

CSR and Firm Value: A Comparative Study of CSR Performance Measures

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Abstract

Despite a growing number of studies examining the effect of firms' corporate social responsibility (CSR) activities on various stakeholders, including shareholders, the relation between CSR and firm value is the subject of much debate among researchers. In this study, we examine whether the lack of a consensus on how to measure CSR performance may at least partially play a role in the debate. Using five measures of CSR performance based on data from the KLD database, we try to answer the following questions in this study: (1) Do differences between CSR measures affect the relation between CSR and firm value? (2) What role does corporate governance play in the link between CSR and firm value? (3) Does the link between CSR and firm value vary across normal/expected and abnormal/unexpected levels of CSR performance? (4) Which CSR categories are likely to have the most robust connection with firm value? (5) Does the relation between CSR and firm value vary between sample periods? Consistent with prior studies, we find a positive relation between CSR and firm value. More importantly, we find that such a relation is not sensitive to how the CSR performance measure is defined but is likely affected by the choice of CSR categories and sample period. We also find that good corporate governance moderates the link between CSR and firm value.

Keywords: CSR, Firm Value, KLD, Empirical Study

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I. Introduction

The consensus in the literature on corporate social responsibility (CSR) is that firms' CSR initiatives can have a significant effect on firm value through various channels.⁴ For example, the literature shows that CSR performance can build reputational capital (Godfrey *et al.*, 2009), protect firm value (Koh *et al.*, 2014; Lins *et al.*, 2017; Shiu and Yang, 2017), improve firms' access to capital (Cheng *et al.*, 2014), signal firms' future financial performance (Lys *et al.*, 2015), create competitive advantages in product markets (Flammer, 2015), increase customer satisfaction (Luo and Bhattacharya, 2006), and attract institutional investors (Dhaliwal *et al.*, 2011).⁵

Although many studies have explored the relationship between firm CSR performance and various outcome variables related to firm financial performance/value, the empirical evidence to date is still considered to be “mixed” (Griffin and Mahon, 1997; Orlitzky and Benjamin, 2001; Margolis and Walsh, 2003; Ramchander *et al.*, 2012; Awaysheh *et al.*, 2019). For example, many researchers find that socially responsible firms outperform less socially responsible firms in terms of various accounting and firm value measures (e.g. Fogler and Nutt, 1975; Alexander and Buchholz, 1978; Cochran and Wood, 1984; McGuire *et al.*, 1988; Porter and Van der Linde, 1995; Nehrt, 1996). Margolis *et al.* (2009) review 251 published papers, books, dissertations, and working papers to investigate the relation between CSR and accounting-based or market-based measures of financial performance. They observe that despite the generally positive relation between CSR and financial performance documented by many existing studies, the relation can become weaker in some years or even insignificant sometimes.

The inconclusive relation between CSR activities and firm value may be partially attributable to methodological concerns, such as model specification (e.g. McWilliams and Siegel, 2000; Margolis and Walsh, 2001), or a poor understanding of the channels through which CSR affects firm value (e.g. Luo and Bhattacharya, 2006; Dhaliwal *et al.*, 2012; Servaes and Tamayo, 2013). In line with this view, some studies argue that these inconclusive findings are due to shareholders' difficulty in understanding the implications of

⁴ According to the World Business Council for Sustainable Development, CSR is defined generally as “the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large.” The Commission of the European Communities defines CSR as a concept by which “companies decide voluntarily to contribute to a better society and a cleaner environment”. This definition means managers engaging in CSR tend to incorporate economic, legal, ethical, and philanthropic responsibilities into corporate decision-making (Carroll, 1979).

⁵ Survey findings echo the perceived importance of CSR to firm value. For example, in recent years, there has been an increasing demand from investors for the integration of environmental, social, and governance (ESG) criteria into investment decisions. For instance, according to a study by the US SIF (i.e. the Forum for Sustainable and Responsible Investment Foundation), at the beginning of 2018, \$11.6 trillion of all professionally managed assets—that is, 25 cents of every dollar invested in the United States—were under ESG investment strategies. See [https://www.ussif.org/files/2018%20_Trends_OnePager_Overview\(2\).pdf](https://www.ussif.org/files/2018%20_Trends_OnePager_Overview(2).pdf).

firms' CSR performance (e.g. Luo *et al.*, 2015; Muslu *et al.*, 2019). In addition, many researchers find it difficult to accurately measure and compare CSR initiatives when examining the relation of CSR performance to firm value (Chen and Delmas, 2011; Chatterji *et al.*, 2016). As a result, researchers generally rely on third-party data sources to measure firms' CSR performance, such as KLD, Asset4, Sustainalytics, Trucost, and Bloomberg.

The data analysts of these databases typically first identify criteria for each major category of CSR. They then collect data points under each category and consolidate them into a single aggregate measure of CSR performance. Because of substantial variations between sources in defining CSR categories and identifying data points, and in assigning scores and weighting different dimensions of CSR, prior studies find large variations in a similar measure (e.g. environmental rating) between different databases (e.g. Hedesström *et al.*, 2011; Semenova and Hassel, 2015). Even today, there are no agreed-upon criteria for evaluating the quality of CSR data (In *et al.*, 2019).

Among the companies providing publicly available databases with information on CSR (sometimes called ESG: i.e. environmental, social, and governance), one of the first to provide CSR ratings was Kinder, Lydenberg, Domini Research & Analytics, Inc. (KLD).⁶ The KLD database (currently known as MSCI ESG STATS) ranks firms on the basis of their reputation across a number of dimensions and provides over 60 ESG indicators organised into seven categories: environmental, employee relations, product, community, human rights, diversity, and corporate governance. The KLD dataset is currently the most widely used source of CSR ratings because of the objectivity of its ratings and its extensive firm coverage (Waddock and Graves, 1997; Hillman and Keim, 2001; Choi and Wang, 2009; Dhaliwal *et al.*, 2011; Borisov *et al.*, 2016; Hubbard *et al.*, 2017). For example, in terms of firm coverage, starting in 2003, the database covers the 3,000 largest US companies (comprising all of the firms in the Russell 2000 Index). Although the KLD measure of CSR is used extensively in the literature, its construct validity has been challenged by some studies (Mattingly and Berman, 2006; Schultze and Trommer, 2012; Semenova and Hassel, 2015; McCarthy *et al.*, 2017). For instance, Chatterji *et al.* (2009) find that the KLD environmental concerns measure is a "fairly good" measure of past environmental performance, whereas the KLD environmental strengths measure does not accurately predict future environmental performance.

The multifaceted nature of CSR suggests that firms' CSR engagement should be measured as a multidimensional construct. Although it is a common practice to use KLD data to combine and weight multiple categories of CSR in order to arrive at an aggregated CSR performance measure across multiple dimensions (Graves and Waddock, 1994; Griffin and Mahon, 1997; Johnson and Greening, 1999),⁷ some criticise this selection and

⁶ KLD was an independent investment advisory firm which compiled ratings of how companies address the needs of their stakeholders that was acquired by Morgan Stanley Capital International (MSCI).

⁷ The use of multiple CSR category indicators is based on the belief that relying on just a single CSR

aggregation process for its lack of empirical and theoretical justification (Rowley and Berman, 2000; Cerin and Dobers, 2001; Sethi, 2005).⁸ As a result, it is quite common for studies to adopt various CSR performance measures using KLD data. These measures include, for example, the net measure of CSR performance (e.g. subtracting the concerns score from the strengths score), the raw measure of CSR strength, and the industry-adjusted measure of CSR strength (i.e. relative performance scores that are comparable across industries).⁹

Similarly, there is also significant variation among studies in terms of the selection of CSR categories for calculating CSR performance measures. For example, Cho *et al.* (2017) focus on three CSR categories only: community, employee relations, and diversity. Adhikari (2016) focuses on four categories: environment, employee relations, diversity, and human rights. Chen *et al.* (2016) also focus on four categories, but include the product category instead of human rights. Servaes and Tamayo (2013) and Cai *et al.* (2012) both use five CSR categories covering slightly different CSR dimensions. Finally, Bae *et al.* (2019) use six CSR dimensions (community, diversity, employee relations, environment, human rights, and product) to define their CSR performance measure.

Additionally, in examining the relationship between CSR performance and firms' financial outcomes, most studies consider corporate governance to be distinct from CSR (Di Giuli and Kostovetsky, 2014).¹⁰ However, previous studies document a high correlation between firms' corporate governance and CSR performance (Jamali *et al.*, 2008; Harjoto and Jo, 2011; Jo and Harjoto, 2012; Ferrell *et al.*, 2016; Liao *et al.*, 2020) and between corporate governance and financial performance (Lemmon and Lins, 2003; Baek *et al.*, 2004; Zhang, 2007). Thus, another question worth exploring is whether and how controlling for a firm's corporate governance performance affects the relationship between firms' CSR performance and firm value and what role corporate governance plays in that relationship.

In addition, Lys *et al.* (2015) introduce the concept of normal/expected versus abnormal/unexpected CSR performance. They argue that unexpected CSR performance/expenditures captures firms' incentive for signalling their future financial performance. Consistent with their argument, they find that an unexpected level of CSR expenditures (i.e. the residual value of CSR expenditures, which estimates the deviation from the optimal level of CSR expenditures by regressing total CSR expenditures on a set of economic characteristics) is positively associated with future financial performance, but

category indicator cannot accurately measure the complexity of CSR performance.

⁸ For example, researchers have observed a significantly positive correlation between KLD's strengths and concerns in various categories and raised concerns about the validity of these aggregated measures in capturing firms' actual CSR performance (In and Park 2019). For a similar reason, other studies (e.g. Chen *et al.*, 2016; Muslu *et al.*, 2019) use KLD's strength and concern scores separately.

⁹ We summarise the major CSR measures commonly used by prior studies in Appendix A.

¹⁰ This distinction is because CSR is more related to social/environmental objectives and stakeholders in general rather than shareholders. However, corporate governance is generally considered a mechanism that allows shareholders to monitor managers.

there is little evidence supporting a significant relationship between an expected level of CSR expenditures and future financial performance.

Finally, although a growing number of empirical studies document a positive relationship between CSR performance and financial performance, some question whether this relationship can be observed persistently across different time periods (In *et al.*, 2019).

Altogether, given the large heterogeneity in how previous studies measure and define CSR performance, we argue that the mixed evidence on the relation between CSR and firm value in the literature may be partially explained by this lack of consensus. Thus, using CSR data from KLD to construct CSR performance variables in different ways and Tobin's Q to measure firm value, we try to answer the following questions in this study.

(1) *Do different CSR measures affect the relation between CSR and firm value?*

The results indicate that all five CSR performance measures, despite being defined differently in prior studies, support a significant and positive relationship between CSR performance and firm value.

(2) *What role does corporate governance play in the link between CSR and firm value?*

The results indicate that the inclusion of corporate governance performance as an additional control variable in examining the relationship between CSR performance and firm value does not affect the observation of a positive relationship between CSR performance and firm value. Additionally, our results show that good corporate governance can moderate the link between CSR and firm value.

(3) *Does the CSR and firm value link vary across normal/expected and abnormal/unexpected levels of CSR performance?*

The results show a positive association between both expected/normal and unexpected/abnormal levels of CSR performance and firm value. More importantly, the results indicate that a positive relationship between CSR performance and firm value tends to be more robust when CSR performance is measured by the normal level of CSR than when it is measured by the abnormal level of CSR performance.

(4) *Which CSR category is likely to have the most robust connection with firm value?*

The results indicate that among the six major CSR categories (i.e. environment, employee relations, product, community, human rights, and diversity), environment, employee relations, community, and diversity tend to have the most robust relationship with firm value. Firms' performance in the product and human rights dimensions exhibits a weaker or non-significant relationship with firm value.

(5) *Does the relation between CSR and firm value vary across different sample periods?*

The results support a growing importance of CSR performance to firm value as perceived by investors over time. Specifically, we are more likely to find a robust and positive association between CSR performance and firm value in the later years of the sample period than in the early years across all CSR performance measures.

Over the past two decades, there has been growing interest in CSR among scholars from various disciplines (Radhakrishnan *et al.*, 2018). Our study adds to the literature on the association between CSR performance and firm value by exploring whether and how different measures of CSR performance matter in the relationship. In addition, given the lack of a consensus on how to measure CSR performance in the literature, the answers to the above questions will help future CSR studies in defining CSR performance measures, selecting CSR dimensions, planning their research design, and choosing the sample period. Moreover, the question of whether or how CSR and firm value are related has also attracted a high level of interests from practitioners (Carroll, 1991) because CSR engagement may be considered as a potential departure from shareholder theory, which suggests that firms should strive to maximise shareholder wealth within legal constraints and basic social norms (Friedman, 1970). Such a concern is more pronounced when research findings suggest an insignificant or even a negative relation between CSR engagement and firm value. The findings of our study suggest that the insignificant relation between CSR and firm value could partially be explained by methodological concerns, such as model specification and variable definition.

The rest of this paper is organised as follows. Section II discusses the research design. Section III describes the data and sample selection. Section IV presents the results for the relationship between CSR performance and firm value across different CSR performance measures, CSR dimensions, and sample periods. Finally, we present our conclusions in Section V.

II. Research Design

2.1 CSR Measurement

2.1.1 CSR scores and CG score

KLD evaluates firms' CSR performance across seven major categories: environmental, employee relations, product, community, human rights, diversity, and corporate governance. Each category is associated with a number of positive indicators (i.e. strengths) and negative indicators (i.e. concerns).¹¹ Each year, firms are rated on a variety of positive and negative indicators in each non-exclusive category. For each indicator, if the company meets the requirement for a particular issue, it gains one point in the corresponding cell. Among these seven categories, corporate governance is commonly viewed as a distinct construct from the

¹¹ For instance, positive indicators on the product dimension include the following: a well-developed quality programme; industry-leading research, development, and innovation; a mission to provide products and services to the economically disadvantaged; and other notable social benefits from the products. Negative indicators include the following: fines or penalties relating to product safety; marketing or contracting controversies; controversies relating to antitrust practice; and other major controversies. For details, see Appendix B, summarised on the basis of the rating criteria provided by KLD Research & Analytics, Inc. (2006).

other six categories, and its impact on firm value has been widely examined in the literature (e.g. Lemmon and Lins, 2003; Baek *et al.*, 2004; Larcker *et al.*, 2007). As discussed previously, given that good corporate governance primarily aims to maximise the interests of shareholders, whereas CSR activities primarily focus on improving social and environmental conditions and thus tend to serve the interest of all stakeholders, we construct CSR scores on the basis of the remaining six dimensions of KLD after excluding corporate governance.

Although CSR has become an important business practice in recent years, its opponents argue that it can be a manifestation of agency costs, with the potential to hamper shareholder value (e.g. Friedman, 1970; Bénabou and Tirole, 2010; Krüger, 2015). Thus, the relation between CSR performance and firm value may partially be affected by firms' corporate governance performance (Liao *et al.*, 2020). For instance, if CSR is motivated by managers' self-interest and good corporate governance works as a disciplinary mechanism that reduces CSR initiatives resulting from managerial self-interest (e.g. making firms' CSR initiatives more substantive), then corporate governance may represent an important correlated but omitted variable. On the other hand, a greater level of corporate governance may increase managers' incentive in responding to stakeholders' demands regarding CSR even though some CSR initiatives might have little potential to create an observable financial return. To address these possibilities, we first include firms' corporate governance score, measured as the difference between the number of strengths and number of concerns in the corporate governance category, in our examination of the link between CSR and firm value. We further include an interaction term between CSR and corporate governance to examine the possible moderating effect of corporate governance in the relation between CSR performance and firm value.

Following the literature, we construct the following three measures to capture a firm's CSR performance: (1) *CSR_Level*, measured as the total number of strengths across selected CSR categories (Flammer, 2015; Flammer *et al.*, 2019); (2) *CSR_Net*, measured as the total number of strengths minus the total number of concerns across selected CSR categories (Hillman and Keim, 2001; Choi and Wang, 2009; Kim *et al.*, 2012; Gao *et al.*, 2014; Hubbard *et al.*, 2017; Davidson *et al.*, 2019);¹² (3) *CSR_Adj1*, measured by the raw CSR strength scores each year adjusted by industry medians across selected CSR categories (i.e. a relative CSR performance score that is comparable across industries) (Dhaliwal *et al.*, 2011).

Additionally, we follow the literature to construct two CSR measures. First, *CSR_Adj2*, measured as total scaled strength minus total scaled concerns across selected CSR categories.

¹² An issue related to the net measure of CSR performance is the changes in the number of strength and concern indicators across years. For example, in 1990, there were only four indicators for community strengths and four indicators for community concerns, yet in 2005, there were seven indicators for strengths in the community category and only four indicators for community concerns.

The scaled strength is the number of strengths in each category scaled by the maximum number of strengths for that category in that year, and the scaled concern is the number of concerns in each category scaled by the maximum number of concerns for that category in that year (Lins *et al.*, 2017; Servaes and Tamayo, 2013; Deng *et al.*, 2013).¹³ Second, CSR_Adj3 , measured as total scaled strength minus total scaled concern across all selected CSR categories. The scaled strength (concern) is the number of strengths (concerns) in each CSR category scaled by the combined maximum possible number of strengths and concerns in each CSR category for each firm-year (Albuquerque *et al.*, 2019).

All of these raw, net, and adjusted measures of CSR performance are commonly used in the literature without much justification as regards which measure best captures a firm's CSR performance. Thus, in our study, we include all of these measures to examine the relationship between CSR performance and firm value.

2.1.2 Normal and abnormal CSR

Lys *et al.* (2015) introduce the concept of abnormal/unexpected level of CSR performance. They find a positive association between abnormal/unexpected CSR performance and firms' future financial performance but little evidence of a positive association between normal/expected CSR performance and firms' future financial performance. They argue that this finding suggests that firms signal their future financial performance through a higher level of CSR initiatives. Therefore, following Lys *et al.* (2015), we also construct normal and abnormal CSR scores in our examination of the relationship between CSR performance and firm value. The objective of this analysis is to examine whether the link between CSR performance and firm value is sensitive to these two different CSR performance measures.

Specifically, CSR_Normal (i.e. the normal CSR score) is the predicted component from estimating model (1) and $CSR_Abnormal$ (i.e. the abnormal CSR score) is the unexplained component from estimating model (1). As $CSR_Abnormal$ represents the residual from a regression model estimating the deviation of firms' CSR performance from the optimal level of CSR performance by regressing total CSR performance on a set of economic characteristics, it has both positive and negative values, with a mean of zero.

The regression model for this estimation is specified as follows:

$$\begin{aligned}
 CSR_{i,t} = & \alpha_0 + \alpha_1 AssetTurnover_{i,t} + \alpha_2 ProfitMargin_{i,t} + \alpha_3 Cash_i \\
 & + \alpha_4 CFO_{i,t} + \alpha_5 Leverage_{i,t} + \alpha_6 MTB_{i,t} + \alpha_7 Size_{i,t} \\
 & + \alpha_8 RdExp_{i,t} + \alpha_9 AdExp_{i,t} + \alpha_{10} LitigationExp_{i,t} \\
 & + \alpha_{11} CG_{i,t} + \sum IND_{i,t} + \varepsilon_{i,t}
 \end{aligned} \tag{1}$$

¹³ For example, suppose that in 2003 the summations of the KLD strength indicators for firm j across these six categories (community, diversity, employee, environment, human rights, and product) are 0, 1, 1, 2, 1, and 1, and the maximum number of strength indicators across these six categories are 6, 8, 6, 5, 3, and 4. According to the definition of CSR_Adj2 , the adjusted total strength score for the firm is $0/6+1/8+1/6+2/5+1/3+1/4 = 1.275$. A similar procedure is followed for the total concerns score. If the adjusted total concerns is 1.05, then the adjusted CSR score (CSR_Adj2) is $1.275-1.05 = 0.225$.

In equation (1), CSR is measured by five methods, as defined above. Following prior studies, in this first-stage regression model, we include an extensive set of economic factors that are documented in the literature as affecting firms' CSR performance. Specifically, we include asset turnover (*AssetTurnover*), profitability (*ProfitMargin*), cash (*Cash*), and cash flow of operations (*CFO*) to proxy for firm performance because firm performance can increase the external demand for CSR performance (Campbell, 2007). We also control for leverage (*Leverage*) and market-to-book ratio (*MTB*) because stable firms with lower risk usually spend more on CSR (Orlitzky and Benjamin, 2001). We include firm size (*Size*) because larger firms may have more resources or experience greater pressure to improve CSR performance (Wu, 2006). We include both advertising (*AdExp*) and R&D (*RdExp*) expenses because firms with higher expenditures in these areas invest more in CSR activities (Wieser, 2005). We control for litigation expenses (*LitigationExp*) because CSR performance can act as reputation insurance (Bartov *et al.*, 2020). We also control for corporate governance score because corporate governance may affect the scope and effectiveness of CSR activities (Johnson and Greening, 1999). Last, we include industry and year fixed effects to control for variations in firms' CSR performance across industries and years (Karpoff *et al.*, 2005).

2.1.3 Firm value

We use Tobin's Q to measure firm value. Tobin's Q is constructed from Compustat and defined as the ratio of the market value to the book value of total assets (Rountree *et al.*, 2008).

2.2 Research Models

To examine the relationship between CSR performance and firm value, we estimate the following models:

$$\begin{aligned}
 TQ_{i,t} = & \alpha_0 + \alpha_1 CSR_{i,t-1} + \alpha_2 ROA_{i,t-1} + \alpha_3 Leverage_{i,t-1} \\
 & + \alpha_4 AdExp_{i,t-1} + \alpha_5 RevGrow_{i,t-1} + \alpha_6 Size_{i,t-1} + \alpha_7 RDExp_{i,t-1} \\
 & + \alpha_8 Capex_{i,t-1} + \alpha_9 Logage_{i,t-1} + \sum IND_{i,t-1} + \sum YEAR_{i,t-1} + \varepsilon_{i,t}; \quad (2)
 \end{aligned}$$

$$\begin{aligned}
 TQ_{i,t} = & \alpha_0 + \alpha_1 CSR_{i,t-1} + \alpha_2 CG_{i,t-1} + \alpha_3 ROA_{i,t-1} + \alpha_4 Leverage_{i,t-1} \\
 & + \alpha_5 AdExp_{i,t-1} + \alpha_6 RevGrow_{i,t-1} + \alpha_7 Size_{i,t-1} + \alpha_8 RDExp_{i,t-1} \\
 & + \alpha_9 Capex_{i,t-1} + \alpha_{10} Logage_{i,t-1} + \sum IND_{i,t-1} + \sum YEAR_{i,t-1} + \varepsilon_{i,t}; \quad (3)
 \end{aligned}$$

where $TQ_{i,t}$ is Tobin's Q in year t ; our main variable of interest, CSR score, is measured in year $t-1$, with $CSR_{i,t-1}$ calculated using the five methods defined earlier plus normal/abnormal CSR performance estimated from the first-stage regression model. In model (3), we further include the corporate governance score ($CG_{i,t-1}$) to disentangle the effect of CSR performance in firm value from that of corporate governance. We expect firms with higher CSR performance to have higher firm value.

Moreover, we control for a vector of firm-level characteristics that may affect firm value in our regression model. Prior studies (Rountree *et al.*, 2008; Cremers *et al.*, 2017) suggest that firms with higher financial performance; higher sales growth; higher advertising, research and development; and more capital expenditures have a higher firm value, whereas firms with higher leverage and older firms tend to have a lower Tobin's Q. Specifically, we control for return on assets (*ROA*), defined as the ratio of operating income before depreciation to the book value of total assets; leverage (*Leverage*), defined as the ratio of total long-term debt (long-term debt plus debt in current liabilities) to the book value of total assets; advertising expenses (*AdExp*), defined as advertising costs scaled by sales; growth of revenue (*RevGrow*), defined as change of sales scaled by lagged sales; firm size (*Size*), defined as the natural logarithm of the book value of total assets; research and development expenses (*RdExp*), defined as the intensity of research and development expenses scaled by sales; capital expenditure (*Capex*), defined as capital expenditure scaled by book value of total assets; and firm age (*Logage*), defined as the natural logarithm of firm age, calculated as the difference between year t and the first year the company appeared in the CRSP database. We also control for industry fixed effects, defined on the basis of the two-digit Standard Industrial Classification (SIC), and year fixed effects, using year indicators to control for possible variations across years (Rountree *et al.*, 2008).

III. Sample Selection

3.1 Data and Sample Selection

Our analysis of firms covered by KLD begins in 1991, the first year that KLD provided CSR data for publicly listed companies in North America.¹⁴ We collect financial statement data from the Compustat database to construct our dependent variable and control variables. To remain in the sample, we require firm-year observations to have data for all of the Compustat accounting variables we use in our analysis. After matching KLD data with the Compustat database, our final sample covers 5,634 individual firms for a total of 43,483 firm-year observations spanning the period 1991 to 2016. To mitigate the effect of outliers, all continuous variables are winsorised at the 1st and 99th percentiles of the empirical distribution.

3.2 Descriptive Statistics

For ease of interpretation, in Table 1, we report the number of firm-year observations and the means of CSR scores by year (Panel A) and industry (Panel B) according to the

¹⁴ On the basis of a wide variety of sources, such as corporate filings, government and nongovernment data, and more than 14 thousand social media sources, KLD, an independent social investment advisory firm, assesses the social performance of numerous firms. KLD data are used extensively in scholarly research (e.g. Waddock and Graves, 1997; Dhaliwal *et al.*, 2011; Hoi *et al.*, 2013; Di Giuli and Kostovetsky, 2014; Lins *et al.*, 2017).

industry classification in Barth *et al.* (1998). By examining the average value of CSR scores across years, we find that the CSR score reached its peak level between 1995 and 2000 and declined subsequently. This finding could be partially explained by the reduced profitability of firms during the post-financial-crisis period.

Examining the average value of CSR scores across industries, we find large variations in CSR performance across firms from different industries. However, there is also substantial variation across different CSR performance measures. For instance, although one can observe the highest level of CSR performance among firms in the food industry, based on either the raw or net measure of CSR performance (*CSR_Level* and *CSR_Net*), firms in the insurance/real estate and extractive industries exhibit the lowest CSR performance scores, respectively, based on these two measures.

Table 1 Sample Distribution

Table 1 presents the composition of the sample. Panel A shows the breakdown and average CSR scores by year, and Panel B shows the breakdown and average CSR scores by industry according to the industry classification in Barth *et al.* (1998).

Panel A: By Year

	Year	N	Percent (%)	<i>CSR_Level</i>	<i>CSR_Net</i>	<i>CSR_Adj1</i>	<i>CSR_Adj2</i>	<i>CSR_Adj3</i>
1	1991	577	1.33	1.21	0.27	1.01	-0.01	-0.01
2	1992	575	1.32	1.44	0.26	1.22	-0.01	-0.01
3	1993	570	1.31	1.61	0.16	1.36	-0.06	-0.02
4	1994	558	1.28	1.91	0.30	1.38	-0.04	0.03
5	1995	567	1.30	2.11	0.64	1.50	0.03	0.06
6	1996	556	1.28	2.05	0.70	1.46	0.07	0.06
7	1997	550	1.26	2.15	0.80	1.48	0.07	0.07
8	1998	550	1.26	2.20	0.81	1.53	0.07	0.07
9	1999	546	1.26	2.27	0.72	1.43	0.05	0.06
10	2000	567	1.30	2.29	0.73	1.29	0.05	0.06
11	2001	968	2.23	1.60	0.31	1.32	-0.02	0.02
12	2002	975	2.24	1.67	0.24	1.49	-0.05	0.01
13	2003	2,446	5.63	0.87	-0.26	0.87	-0.14	-0.03
14	2004	2,753	6.33	0.94	-0.37	0.94	-0.18	-0.04
15	2005	2,676	6.15	1.05	-0.35	0.99	-0.19	-0.04
16	2006	2,624	6.03	1.12	-0.37	1.06	-0.20	-0.04
17	2007	2,683	6.17	1.18	-0.36	1.12	-0.20	-0.04
18	2008	2,726	6.27	1.21	-0.36	1.05	-0.20	-0.04
19	2009	2,656	6.11	1.21	-0.37	1.09	-0.20	-0.04
20	2010	2,755	6.34	1.25	-0.63	1.22	-0.35	-0.06
21	2011	2,643	6.08	1.29	-0.38	1.24	-0.28	-0.03
22	2012	2,606	5.99	1.30	0.62	1.30	0.10	0.06
23	2013	2,554	5.87	2.00	0.95	1.74	0.08	0.04
24	2014	2,454	5.64	1.22	0.84	1.17	0.14	0.06
25	2015	2,179	5.01	1.50	0.95	1.35	0.13	0.07
26	2016	2,169	4.99	1.56	1.15	1.36	0.19	0.10
	<i>Overall</i>	<i>43,483</i>	<i>100.00%</i>	<i>1.55</i>	<i>0.27</i>	<i>1.27</i>	<i>-0.04</i>	<i>0.01</i>

Panel B: By Industry

Industry	N	Percent (%)	<i>CSR Level</i>	<i>CSR Net</i>	<i>CSR Adj1</i>	<i>CSR Adj2</i>	<i>CSR Adj3</i>
1 Mining/Construction	1,010	2.32	1.04	-0.68	1.04	-0.21	-0.08
2 Food	1,095	2.52	2.50	0.80	2.11	0.05	0.07
3 Textiles/Print/ Publishing	1,940	4.46	1.57	0.41	1.46	-0.01	0.03
4 Chemicals	1,294	2.98	2.06	0.05	1.64	-0.11	-0.02
5 Pharmaceuticals	2,331	5.36	1.40	0.22	1.13	-0.06	0.01
6 Extractive	1,910	4.39	1.32	-0.85	1.17	-0.22	-0.08
7 Manf: Rubber/Glass/etc.	630	1.45	1.41	0.19	1.31	-0.07	0.00
8 Manf: Metal	1,036	2.38	1.10	-0.46	1.09	-0.18	-0.06
9 Manf: Machinery	1,525	3.51	1.22	-0.01	1.22	-0.10	-0.01
10 Manf: Electrical Equipment	1,088	2.50	1.28	0.05	1.26	-0.11	-0.01
11 Manf: Transport Equipment	1,067	2.45	1.81	-0.32	1.72	-0.19	-0.06
12 Manf: Instruments	2,037	4.68	1.13	0.25	1.13	-0.04	0.02
13 Manf: Misc.	297	0.68	1.54	0.47	1.22	-0.02	0.03
14 Computers	5,320	12.23	1.56	0.62	1.42	-0.01	0.05
15 Transportation	2,481	5.71	1.38	-0.05	1.31	-0.14	-0.02
16 Utilities	2,065	4.75	2.08	0.09	1.41	-0.08	0.00
17 Retail: Wholesale	1,153	2.65	0.89	-0.02	0.89	-0.09	-0.01
18 Retail: Misc	2,391	5.50	1.47	0.18	0.98	-0.08	0.01
19 Retail: Restaurant	548	1.26	1.21	-0.02	1.12	-0.12	-0.01
20 Financial	6,106	14.04	1.29	0.40	1.19	-0.02	0.03
21 Insurance/Real Estate	2,624	6.03	0.63	-0.14	0.62	-0.13	-0.03
22 Services	3,227	7.42	0.80	-0.15	0.80	-0.13	-0.02
23 Others	308	0.71	1.69	-0.79	1.50	-0.31	-0.10
<i>Overall</i>	<i>43,483</i>	<i>100.00</i>	<i>1.55</i>	<i>0.27</i>	<i>1.27</i>	<i>-0.04</i>	<i>0.01</i>

Table 2 Summary Statistics

This table presents the descriptive statistics of the variables of interest from 43,483 observations during the period 1991 to 2016. Refer to Appendix A for variable descriptions. All continuous variables are winsorised at the 1st and 99th percentiles.

Variable	N	Mean	Std. Dev.	P25	Median	P75
<i>CSR Level</i>	43,483	1.359	2.074	0.000	1.000	2.000
<i>CSR Net</i>	43,483	0.114	2.188	-1.000	0.000	1.000
<i>CSR Adj1</i>	43,483	1.210	2.049	0.000	0.000	2.000
<i>CSR Adj2</i>	43,483	-0.082	0.475	-0.333	-0.025	0.125
<i>CSR Adj3</i>	43,483	0.000	0.232	-0.143	0.000	0.091
<i>CG</i>	43,483	-0.177	0.640	-1.000	0.000	0.000
<i>Tobin's Q</i>	43,483	1.883	1.229	1.117	1.456	2.133
<i>ROA</i>	43,483	0.023	0.119	0.007	0.036	0.074
<i>Leverage</i>	43,483	0.203	0.194	0.027	0.163	0.316
<i>AdExp</i>	43,483	0.011	0.026	0.000	0.000	0.010
<i>RevGrow</i>	43,483	0.123	0.309	-0.010	0.072	0.184
<i>Size</i>	43,483	7.594	1.719	6.353	7.538	8.716
<i>RDExp</i>	43,483	0.093	0.410	0.000	0.000	0.031
<i>Capex</i>	43,483	0.045	0.053	0.010	0.030	0.061
<i>Age</i>	43,483	2.751	0.953	2.197	2.833	3.466
<i>AssetTurnover</i>	43,483	0.862	0.721	0.320	0.710	1.190
<i>ProfitMargin</i>	43,483	-0.050	0.726	0.014	0.058	0.115
<i>Cash</i>	43,483	0.157	0.190	0.026	0.079	0.216
<i>CFO</i>	43,483	0.078	0.103	0.035	0.080	0.131
<i>MTB</i>	43,483	1.627	1.345	0.865	1.232	1.922
<i>LitigationExp</i>	43,483	0.000	0.004	0.000	0.000	0.000

Table 2 provides the descriptive statistics of the main variables we use in our regression analyses. For example, the mean *CSR_Net* is 0.114, indicating that firms on average tend to have more CSR strengths than CSR concerns. The mean (median) Tobin's Q is 1.883 (1.456), which is consistent with prior studies examining the association between CSR performance and firm value. The mean of corporate governance (*CG*) is -0.177. A negative *CG* score suggests that firms tend to have more *CG* concerns than *CG* strengths in general.

Table 3 reports the pairwise Pearson correlations between Tobin's Q, CSR, and *CG* score. The five CSR score measures are highly (more than 60%) correlated at the 1% level. Lending support to a positive relationship between CSR performance and firm value, Tobin's Q is positively correlated with all five CSR scores at the 1% level. However, there is no consensus in the correlation between CSR score and *CG* score across different measures of CSR scores. For example, CSR scores measured only by CSR strength (*CSR_Level* and *CSR_Adj1*) are negatively related to *CG* score, whereas CSR scores measured as net score (*CSR_Net*, *CSR_Adj2*, and *CSR_Adj3*) are positively related to *CG* score. In addition, even though *CG* score exhibits significant correlation with all of the five CSR scores in this study, the correlation coefficients are not high in general. This lends support to the argument that corporate governance represents a distinct construct from CSR.

Table 3 Correlation Matrix (Pearson)

This table presents the Pearson correlations between the variables of interest. Refer to Appendix A for variable descriptions. The correlation analysis is based on a sample size of 43,483 observations during the period 1991 to 2016. All correlations are significant at the 1% level.

	<i>Tobin's Q</i>	<i>CSR_Level</i>	<i>CSR_Net</i>	<i>CSR_Adj1</i>	<i>CSR_Adj2</i>	<i>CSR_Adj3</i>	<i>CG</i>
<i>Tobin's Q</i>	1.000						
<i>CSR_Level</i>	0.028***	1.000					
<i>CSR_Net</i>	0.086***	0.765***	1.000				
<i>CSR_Adj1</i>	0.020***	0.981***	0.754***	1.000			
<i>CSR_Adj2</i>	0.084***	0.611***	0.927***	0.600***	1.000		
<i>CSR_Adj3</i>	0.078***	0.699***	0.946***	0.690***	0.965***	1.000	
<i>CG</i>	-0.004	-0.076***	0.068***	-0.072***	0.123***	0.076***	1.000

IV. Empirical Results

4.1 Do different CSR measures affect the relation between CSR performance and firm value?

Table 4 presents the results concerning the relationship between CSR performance and firm value. In Panel A, we report the results without controlling for firms' corporate governance performance. Consistent with the prior literature (e.g. Deng *et al.*, 2013), we find a positive relation between CSR score and firm value. Specifically, the estimated coefficient on *CSR_Net* is positive and significant (0.049, $t=10.29$) at the 1% level,

suggesting that firms with higher CSR performance in year $t-1$ tend to exhibit a higher firm value as measured by Tobin's Q in year t . We observe similar results when we use differently defined CSR score measures.

4.2 What role does corporate governance play in the link between CSR and firm value?

4.2.1 Does firms' corporate governance represent a correlated but omitted variable in the link between CSR performance and firm value?

In Panel B, we further include the corporate governance performance score as an additional control in examining the link between CSR performance and firm value. We continue to find a positive relationship between CSR score and firm value after controlling for corporate governance performance.¹⁵ Turning to the control variables, the coefficients of *ROA*, *AdExp*, *RevGrow*, *RDExp*, and *Capex* are positive and significant, indicating that firms with higher performance and higher advertising, research, and capital expenditures have a higher Tobin's Q . In contrast, leverage and age are negatively though insignificantly related to firm value.

Taken together, this evidence is consistent with the findings of prior studies and suggests that firms with better CSR performance tend to be associated with higher future firm value, regardless of how the CSR performance score is defined using the KLD data.

Table 4 CSR And Firm Value

This table presents the OLS regression results with firm's value measured by Tobin's Q in year t as the dependent variable, and CSR scores in year $t-1$ (variously defined) as the independent variable. In Panel A, we only include the CSR measure, whereas in Panel B we include both the CSR and CG measures. We also control for a set of variables measured in year $t-1$, plus industry and year fixed effects. All of the variables are defined in Appendix A. All of the continuous variables are winsorised at the 1st and 99th percentiles. t -values are reported beneath the coefficient estimates in parentheses and are computed using standard errors robust to firm clustering. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: CSR

		Dependent Variable = <i>Tobin's Q</i>				
<i>CSR</i> =	Predicted Sign	<i>CSR_Level</i>	<i>CSR_Net</i>	<i>CSR_Adj1</i>	<i>CSR_Adj2</i>	<i>CSR_Adj3</i>
		(1)	(2)	(3)	(4)	(5)
<i>CSR</i>	+	0.077*** (12.81)	0.049*** (10.29)	0.072*** (12.01)	0.184*** (8.60)	0.420*** (9.66)
<i>ROA</i>	+	2.099*** (10.72)	2.071*** (10.48)	2.101*** (10.71)	2.082*** (10.49)	2.080*** (10.51)
<i>Leverage</i>	-	-0.081 (-0.96)	-0.131 (-1.54)	-0.089 (-1.05)	-0.148* (-1.73)	-0.140* (-1.65)

¹⁵ Although this result suggests that the corporate governance score is negatively related to firm value, this finding is likely driven by the negative value of the corporate governance score, as indicated in Table 2.

<i>AdExp</i>	+	4.444*** (5.96)	4.600*** (6.12)	4.486*** (6.01)	4.694*** (6.22)	4.662*** (6.18)
<i>RevGrow</i>	+	0.325*** (10.33)	0.317*** (10.05)	0.324*** (10.28)	0.316*** (9.99)	0.316*** (10.00)
<i>Size</i>	-	-0.177*** (-15.48)	-0.142*** (-13.77)	-0.173*** (-15.06)	-0.133*** (-13.09)	-0.137*** (-13.41)
<i>RDExp</i>	+	0.763*** (13.79)	0.765*** (13.71)	0.762*** (13.76)	0.769*** (13.75)	0.765*** (13.70)
<i>Capex</i>	+	1.330*** (4.42)	1.358*** (4.44)	1.336*** (4.44)	1.384*** (4.52)	1.374*** (4.50)
<i>Age</i>	-	-0.020 (-1.51)	-0.011 (-0.86)	-0.020 (-1.52)	-0.011 (-0.79)	-0.011 (-0.84)
<i>Constant</i>		3.045*** (11.24)	2.925*** (9.62)	3.028*** (11.03)	2.869*** (9.42)	2.911*** (9.66)
Industry, Year FE		Yes	Yes	Yes	Yes	Yes
N		43,483	43,483	43,483	43,483	43,483
adj. R-sq		0.307	0.302	0.305	0.300	0.301

Panel B: CSR and CG

		Dependent Variable = <i>Tobin's Q</i>				
<i>CSR =</i>	Predicted Sign	<i>CSR_Level</i>	<i>CSR_Net</i>	<i>CSR_Adj1</i>	<i>CSR_Adj2</i>	<i>CSR_Adj3</i>
		(1)	(2)	(3)	(4)	(5)
<i>CSR</i>	+	0.080*** (13.32)	0.053*** (10.93)	0.075*** (12.55)	0.201*** (9.33)	0.454*** (10.38)
<i>CG</i>	?	-0.111*** (-8.48)	-0.112*** (-8.42)	-0.111*** (-8.46)	-0.111*** (-8.30)	-0.113*** (-8.46)
<i>ROA</i>	+	2.116*** (10.84)	2.085*** (10.58)	2.117*** (10.83)	2.096*** (10.59)	2.095*** (10.61)
<i>Leverage</i>	-	-0.078 (-0.93)	-0.128 (-1.51)	-0.085 (-1.01)	-0.146* (-1.71)	-0.137 (-1.62)
<i>AdExp</i>	+	4.400*** (5.91)	4.553*** (6.07)	4.442*** (5.96)	4.649*** (6.18)	4.616*** (6.14)
<i>RevGrow</i>	+	0.331*** (10.54)	0.323*** (10.26)	0.330*** (10.49)	0.322*** (10.20)	0.322*** (10.21)
<i>Size</i>	-	-0.191*** (-16.70)	-0.155*** (-15.02)	-0.187*** (-16.29)	-0.146*** (-14.30)	-0.151*** (-14.65)
<i>RDExp</i>	+	0.759*** (13.77)	0.760*** (13.68)	0.758*** (13.74)	0.764*** (13.71)	0.761*** (13.67)
<i>Capex</i>	+	1.338*** (4.47)	1.364*** (4.48)	1.345*** (4.48)	1.390*** (4.56)	1.381*** (4.54)
<i>Age</i>	-	-0.021 (-1.56)	-0.012 (-0.89)	-0.021 (-1.57)	-0.011 (-0.82)	-0.012 (-0.87)
<i>Constant</i>		3.148*** (11.89)	3.031*** (10.11)	3.131*** (11.66)	2.974*** (9.90)	3.019*** (10.16)
Industry, Year FE		Yes	Yes	Yes	Yes	Yes
N		43,483	43,483	43,483	43,483	43,483
adj. R-sq		0.309	0.305	0.308	0.302	0.304

4.2.2 Does firms' corporate governance moderate the link between CSR performance and firm value?

Our baseline regression finds that firms' corporate governance performance does not represent a correlated but omitted variable in examining the relationship between CSR performance and firm value. Next, we examine whether or how corporate governance performance may play a moderating role in the link between CSR performance and firm value. Table 5 presents the results of an additional analysis to examine the role of corporate governance on the association between CSR performance and firm value. *HIGHCG* is an indicator variable which equals one if a firm's corporate governance performance is above sample median in the same year and zero otherwise. We then include both the main effect of *HIGHCG* and its interaction with CSR performance in the baseline regression. We find a significantly negative coefficient for interaction term (*CSR*×*HIGHCG*), indicating that corporate governance performance moderates the link between CSR performance and firm value.

Table 5 The Role of CG in the Relationship between CSR and Firm Value

This table presents the OLS regression results with firm's value measured by Tobin's Q in year *t* as the dependent variable, and CSR scores, CG measure, and their interaction in year *t*-1 (variously defined) as the main independent variables. We also control for a set of variables measured in year *t*-1, plus industry and year fixed effects. High CG (*HIGHCG*) is an indicator variable which equals one if a firm's CG measure is above the sample median in the same year. All of the variables are defined in Appendix A. All of the continuous variables are winsorised at the 1st and the 99th percentiles. t-values are reported beneath the coefficient estimates in parentheses and are computed using standard errors robust to firm clustering. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

<i>CSR</i> =	Dependent Variable = <i>Tobin's Q</i>				
	<i>CSR_Level</i> (1)	<i>CSR_Net</i> (2)	<i>CSR_Adj1</i> (3)	<i>CSR_Adj2</i> (4)	<i>CSR_Adj3</i> (5)
<i>CSR</i>×<i>HIGHCG</i>	-0.024*** (-3.25)	-0.018** (-2.13)	-0.019*** (-2.69)	-0.084** (-2.23)	-0.148** (-2.04)
<i>CSR</i>	0.083*** (13.57)	0.053*** (10.65)	0.077*** (12.60)	0.199*** (8.95)	0.450*** (9.96)
<i>HIGHCG</i>	-0.050* (-1.72)	-0.059** (-2.26)	-0.055* (-1.92)	-0.061** (-2.33)	-0.060** (-2.31)
<i>ROA</i>	2.091*** (10.73)	2.060*** (10.46)	2.092*** (10.71)	2.070*** (10.47)	2.069*** (10.49)
<i>Leverage</i>	-0.095 (-1.14)	-0.146* (-1.73)	-0.104 (-1.24)	-0.163* (-1.93)	-0.156* (-1.85)
<i>AdExp</i>	4.501*** (6.03)	4.663*** (6.20)	4.548*** (6.09)	4.755*** (6.30)	4.722*** (6.26)
<i>RevGrow</i>	0.326*** (10.38)	0.318*** (10.08)	0.325*** (10.33)	0.316*** (10.02)	0.316*** (10.03)
<i>Size</i>	-0.179*** (-15.78)	-0.141*** (-13.77)	-0.174*** (-15.30)	-0.133*** (-13.03)	-0.137*** (-13.38)

<i>RDExp</i>	0.762*** (13.85)	0.765*** (13.79)	0.762*** (13.83)	0.769*** (13.82)	0.765*** (13.78)
<i>Capex</i>	1.353*** (4.49)	1.385*** (4.53)	1.363*** (4.52)	1.412*** (4.61)	1.403*** (4.58)
<i>Logage</i>	-0.020 (-1.50)	-0.011 (-0.82)	-0.020 (-1.49)	-0.010 (-0.76)	-0.011 (-0.80)
<i>Constant</i>	3.055*** (11.41)	2.923*** (9.65)	3.035*** (11.19)	2.866*** (9.44)	2.910*** (9.69)
Industry, Year FE	Yes	Yes	Yes	Yes	Yes
N	43,483	43,483	43,483	43,483	43,483
adj. R-sq	0.307	0.301	0.305	0.299	0.301

4.3 Does the CSR and firm value link vary across normal/expected and abnormal/unexpected levels of CSR performance?

Table 6 presents the regression results examining the link between normal/abnormal CSR performance and firm value. To conduct this regression analysis, we replace the CSR score included in models (2) and (3) with the estimated normal and abnormal CSR scores.¹⁶ The results from Panel A show that while both normal and abnormal CSR performance are positively related to firm value, the coefficient for normal CSR performance (*CSR_Normal*) tends to have a much larger and statistically stronger association with future firm value than abnormal CSR performance (*CSR_Abnormal*). The results presented in Panel B remain consistent when we control the corporate governance score in the regression model. While our finding lends support to the signalling incentive of managers, as evidenced by a significant and positive association between abnormal CSR performance and firm value, the significantly positive association between normal CSR performance and firm value suggests that the link between CSR performance and firm value is not only attributable to such an incentive.

Table 6 Normal vs. Abnormal CSR and Firm Value

This table presents the OLS regression results with firm's value measured by Tobin's Q in year t as the dependent variable, and normal and abnormal CSR scores in year $t-1$ (variously defined) as the main independent variables. In Panel A, we only include the CSR measure, whereas in Panel B we include both the CSR and CG measures. We also control for a set of variables measured in year $t-1$, plus industry and year fixed effects. Normal and abnormal CSR are estimated in Appendix D. All of the variables are defined in Appendix A. All of the continuous variables are winsorised at the 1st and the 99th percentiles. t -values are reported beneath the coefficient estimates in parentheses and are computed using standard errors robust to firm clustering. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: CSR

<i>CSR =</i>	Dependent Variable = <i>Tobin's Q</i>				
	<i>CSR_Level</i> (1)	<i>CSR_Net</i> (2)	<i>CSR_Adj1</i> (3)	<i>CSR_Adj2</i> (4)	<i>CSR_Adj3</i> (5)
<i>CSR_Normal</i>	2.379*** (44.78)	1.262*** (34.65)	2.261*** (40.12)	4.054*** (28.37)	12.006*** (33.18)

¹⁶ In Appendix D, we report the first stage regression results of the model in equation (1).

<i>CSR_Abnormal</i>	0.014*** (3.21)	0.013*** (3.11)	0.017*** (3.56)	0.057*** (2.95)	0.093** (2.49)
<i>ROA</i>	0.603*** (4.70)	0.554*** (3.57)	0.776*** (5.55)	1.071*** (6.31)	0.690*** (4.35)
<i>Leverage</i>	2.548*** (30.92)	0.626*** (8.62)	2.304*** (26.62)	0.124 (1.64)	0.490*** (6.73)
<i>AdExp</i>	-7.585*** (-14.05)	-2.198*** (-3.62)	-6.478*** (-11.15)	0.739 (1.13)	-1.115* (-1.81)
<i>RevGrow</i>	0.116*** (5.06)	0.175*** (6.87)	0.143*** (5.89)	0.219*** (7.95)	0.183*** (7.04)
<i>Size</i>	-1.876*** (-44.82)	-0.696*** (-33.83)	-1.723*** (-40.28)	-0.436*** (-26.99)	-0.616*** (-32.22)
<i>RDExp</i>	0.095** (2.32)	0.229*** (4.92)	0.066 (1.48)	0.395*** (7.88)	0.201*** (4.19)
<i>Capex</i>	0.950*** (4.49)	0.587** (2.38)	1.225*** (5.34)	0.798*** (2.98)	0.681*** (2.71)
<i>Age</i>	0.023** (2.37)	0.009 (0.88)	0.023** (2.18)	0.000 (0.04)	0.008 (0.71)
<i>Constant</i>	10.903*** (34.34)	8.499*** (26.22)	10.232*** (31.42)	6.738*** (20.44)	8.295*** (25.15)
Industry, Year FE	Yes	Yes	Yes	Yes	Yes
N	43,483	43,483	43,483	43,483	43,483
adj. R-sq	0.528	0.438	0.492	0.385	0.426

Panel B: CSR and CG

<i>CSR =</i>	Dependent Variable = <i>Tobin's Q</i>				
	<i>CSR_Level</i> (1)	<i>CSR_Net</i> (2)	<i>CSR_Adj1</i> (3)	<i>CSR_Adj2</i> (4)	<i>CSR_Adj3</i> (5)
<i>CSR_Normal</i>	2.734*** (47.78)	3.029*** (75.17)	2.616*** (42.21)	15.904*** (83.53)	31.425*** (75.38)
<i>CSR_Abnormal</i>	0.017*** (4.14)	0.005** (2.15)	0.020*** (4.49)	0.016 (1.59)	0.047** (2.13)
<i>CG</i>	-0.480*** (-34.77)	-1.539*** (-73.71)	-0.457*** (-31.07)	-2.230*** (-83.66)	-1.648*** (-74.04)
<i>ROA</i>	0.452*** (3.80)	-1.401*** (-13.47)	0.637*** (4.85)	-1.649*** (-16.85)	-1.367*** (-13.33)
<i>Leverage</i>	2.955*** (35.50)	1.739*** (36.09)	2.693*** (30.51)	0.977*** (24.69)	1.556*** (33.47)
<i>AdExp</i>	-9.567*** (-18.33)	-12.492*** (-32.77)	-8.373*** (-14.75)	-11.925*** (-35.11)	-11.224*** (-30.20)
<i>RevGrow</i>	0.111*** (5.07)	0.057*** (2.89)	0.140*** (5.97)	0.051*** (2.67)	0.054*** (2.73)
<i>Size</i>	-2.190*** (-47.93)	-1.668*** (-73.81)	-2.024*** (-42.50)	-1.600*** (-82.29)	-1.595*** (-73.87)
<i>RDExp</i>	-0.021 (-0.54)	-0.593*** (-17.61)	-0.059 (-1.37)	-0.806*** (-24.82)	-0.790*** (-22.63)
<i>Capex</i>	0.930*** (4.69)	-0.418*** (-2.75)	1.241*** (5.70)	-0.820*** (-6.05)	-0.356** (-2.36)
<i>Age</i>	0.027*** (2.88)	0.034*** (4.95)	0.027*** (2.66)	0.025*** (4.06)	0.033*** (4.77)
<i>Constant</i>	12.518*** (41.46)	17.865*** (71.19)	11.783*** (37.28)	20.358*** (78.86)	18.672*** (71.29)
Industry, Year FE	Yes	Yes	Yes	Yes	Yes
N	43,483	43,483	43,483	43,483	43,483
adj. R-sq	0.573	0.668	0.532	0.690	0.669

4.4 Which CSR category is likely to have the most robust connection with firm value?

Table 7 presents the regression results examining the link between the performance score of each CSR subcategory and firm value; that is, instead of using the aggregate CSR performance score created using multiple selected CSR dimensions, we use the dimensional performance score for each of the six major CSR categories identified by KLD: environment (*ENV*), employee relations (*EMP*), product (*PRO*), community relations (*COM*), human rights (*HUM*), and diversity (*DIV*). A detailed description of these CSR categories is provided in Appendix B.

For brevity, we report only the estimated coefficients for the key variables of interest, although all of the control variables, including the variable controlling for corporate governance performance, are included in the regression. The results presented in Panel A show that across all of the six major CSR categories, four of them (environment, employee relations, community, and diversity) tend to have the most robust relationship with firm value. However, firms' performance in the product and human rights dimensions exhibits a weaker or non-significant relationship with firm value. This finding is consistent with findings from previous studies. For example, Ryou *et al.* (2020) find that firms tend to face a higher proprietary cost concern when they disclose product-related CSR information. Lending further support to their argument, they find that a greater level of product market competition is associated with a lower level of CSR reporting readability. To the extent that firms are likely to provide CSR disclosure in the product dimension and/or provide CSR disclosure in the product dimension with lower level of readability, this likely explains why one would observe a less significant association between CSR performance and firm value in the product dimension.¹⁷

In Panel B, we present the results estimating the link between normal/abnormal CSR performance and firm value. We first construct normal and abnormal CSR scores for each CSR category and then separately examine their association with future firm value. The results concerning the normal CSR performance score are generally consistent with those presented in Panel A. Across all of the six major CSR categories, five (environment, employee relations, product, community, and diversity) tend to have a robust relationship with firm value. However, we do not find the link between abnormal CSR score and future firm value to be robust across different CSR categories. For example, we find an insignificant association between abnormal CSR performance and firm value in the environmental category when the abnormal CSR performance variable is estimated using *CSR_Net*, *CSR_Adj2*, and *CSR_Adj3*. Similar findings can also be observed for the product category. The finding of an insignificant relation between the abnormal CSR performance

¹⁷ The human rights category only applies to a smaller number of firms with concerns on labour rights outsourcing and foreign operations.

and firm value for some CSR dimensions suggests that it is unlikely that abnormal CSR performance in every CSR subcategory can serve as an equally effective signalling mechanism.

Taken together, we conclude that for most of the major CSR categories, with the exception of human rights, we can observe a significant and positive link between CSR performance (or normal levels of CSR performance) and firm value. Moreover, our findings suggest that in measuring firms' overall CSR performance score, it is important to justify the selection of CSR categories because some might not apply to all firms or industries (e.g. CSR performance in the product and human rights dimensions). Our findings also indicate that the estimation of abnormal CSR performance can be contextual and appears to be influenced significantly by the choice of CSR performance measure.

Table 7 CSR Subcategories and Firm Value

This table presents the relationship between firm value and CSR across different CSR categories. All of the continuous variables are winsorised at the 1st and the 99th percentiles. t-values are reported beneath the coefficient estimates in parentheses and are computed using standard errors robust to firm clustering. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: CSR across Subcategories

	Dependent Variable = <i>Tobin's Q</i>					
	<i>ENV</i>	<i>EMP</i>	<i>PRO</i>	<i>COM</i>	<i>HUM</i>	<i>DIV</i>
	(1)	(2)	(3)	(4)	(5)	(6)
1 <i>CSR_Level</i>	0.077***	0.133***	0.283***	0.194***	0.075	0.121***
	(5.42)	(9.72)	(8.04)	(7.25)	(1.32)	(8.98)
All controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year FE	Yes	Yes	Yes	Yes	Yes	Yes
adj. R-sq	0.297	0.301	0.3	0.299	0.296	0.301
2 <i>CSR_Net</i>	0.053***	0.080***	0.008	0.131***	-0.034	0.087***
	(4.90)	(7.84)	(0.42)	(6.25)	(-1.03)	(8.64)
All controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year FE	Yes	Yes	Yes	Yes	Yes	Yes
adj. R-sq	0.297	0.299	0.296	0.298	0.296	0.300
3 <i>CSR_Adj1</i>	0.097***	0.113***	0.284***	0.198***	0.052	0.105***
	(6.51)	(8.40)	(8.07)	(7.29)	(0.90)	(8.14)
All controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year FE	Yes	Yes	Yes	Yes	Yes	Yes
adj. R-sq	0.298	0.300	0.300	0.299	0.296	0.300
4 <i>CSR_Adj2</i>	0.339***	0.416***	0.066	0.308***	-0.044	0.300***
	(4.75)	(6.43)	(0.88)	(5.62)	(-0.48)	(7.57)
All controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year FE	Yes	Yes	Yes	Yes	Yes	Yes
adj. R-sq	0.297	0.298	0.296	0.297	0.296	0.299
5 <i>CSR_Adj3</i>	0.668***	0.950***	0.038	0.817***	-0.203	0.774***
	(4.67)	(7.53)	(0.25)	(7.36)	(-1.00)	(8.69)
All controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year FE	Yes	Yes	Yes	Yes	Yes	Yes
adj. R-sq	0.297	0.299	0.296	0.298	0.296	0.300

Panel B: Normal and Abnormal CSR across Subcategories

	Dependent Variable = <i>Tobin's Q</i>					
	<i>ENV</i>	<i>EMP</i>	<i>PRO</i>	<i>COM</i>	<i>HUM</i>	<i>DIV</i>
	(1)	(2)	(3)	(4)	(5)	(6)
1 <i>CSR_Level_Normal</i>	2.082*** (17.27)	5.852*** (43.39)	24.594*** (63.12)	24.414*** (42.79)	5.982*** (7.92)	4.833*** (33.11)
<i>CSR_Level_Abnormal</i>	0.030** (2.08)	0.036*** (3.49)	0.063*** (2.95)	0.070*** (3.66)	0.025 (0.44)	0.062*** (5.31)
All controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year FE	Yes	Yes	Yes	Yes	Yes	Yes
adj. R-sq	0.316	0.498	0.608	0.538	0.299	0.428
2 <i>CSR_Net_Normal</i>	2.583*** (22.83)	4.253*** (39.85)	2.400*** (14.27)	21.534*** (43.45)	-0.420 (-0.90)	5.379*** (36.29)
<i>CSR_Net_Abnormal</i>	0.010 (0.91)	0.024*** (2.97)	-0.021 (-1.15)	0.038** (2.38)	-0.032 (-0.97)	0.024*** (3.07)
All controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year FE	Yes	Yes	Yes	Yes	Yes	Yes
adj. R-sq	0.336	0.476	0.311	0.507	0.296	0.500
3 <i>CSR_Adj1_Normal</i>	2.829*** (19.45)	5.291*** (37.77)	24.694*** (63.62)	24.793*** (44.08)	6.727*** (8.38)	4.121*** (27.39)
<i>CSR_Adj1_Abnormal</i>	0.041*** (2.79)	0.033*** (2.94)	0.063*** (2.96)	0.069*** (3.61)	0.001 (0.02)	0.064*** (5.45)
All controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year FE	Yes	Yes	Yes	Yes	Yes	Yes
adj. R-sq	0.324	0.451	0.610	0.542	0.299	0.381
4 <i>CSR_Adj2_Normal</i>	16.735*** (22.52)	32.140*** (43.28)	10.160*** (15.86)	43.405*** (28.24)	3.906*** (3.33)	10.844*** (27.81)
<i>CSR_Adj2_Abnormal</i>	0.054 (0.77)	0.106** (2.19)	-0.070 (-0.95)	0.107** (2.06)	-0.073 (-0.78)	0.147*** (4.15)
All controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year FE	Yes	Yes	Yes	Yes	Yes	Yes
adj. R-sq	0.334	0.503	0.315	0.391	0.296	0.390
5 <i>CSR_Adj3_Normal</i>	35.449*** (22.81)	59.310*** (43.15)	17.886*** (13.46)	68.775*** (28.55)	-0.108 (-0.04)	46.380*** (32.81)
<i>CSR_Adj3_Abnormal</i>	0.111 (0.79)	0.244*** (2.58)	-0.188 (-1.24)	0.219** (2.11)	-0.203 (-1.00)	0.217*** (3.02)
All controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year FE	Yes	Yes	Yes	Yes	Yes	Yes
adj. R-sq	0.335	0.501	0.309	0.391	0.296	0.478

ENV = Environment; *EMP* = Employee; *PRO* = Product; *COM* = Community; *HUM* = Human Rights; *DIV* = Diversity.

4.5 Does the relation between CSR and firm value vary across different sample periods?

Finally, in Table 8, we present the results of a subsample analysis based on different sample periods. Specifically, for each group, we divide our sample into five 5-year periods covering different years. Specifically, in columns (1) and (2), we limit our examination to

samples spanning the periods 1992 to 1996 and 1997 to 2001, respectively; in the remaining three columns, our examination is limited to samples spanning the periods 2002 to 2006, 2007 to 2011, and 2012 to 2016, respectively.

Table 8 CSR and Firm Value by Period

This table exhibits the relationship between firm value and CSR across different sample periods. All of the continuous variables are winsorised at the 1st and the 99th percentiles. t-values are reported beneath the coefficient estimates in parentheses and are computed using standard errors robust to firm clustering. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

		Dependent Variable = <i>Tobin's Q</i>				
		1992-1996	1997-2001	2002-2006	2007-2011	2012-2016
		(1)	(2)	(3)	(4)	(5)
1	<i>CSR_Level</i>	0.025* (1.72)	0.040** (2.34)	0.099*** (9.64)	0.080*** (10.60)	0.094*** (11.00)
	All controls	Yes	Yes	Yes	Yes	Yes
	Industry, Year FE	Yes	Yes	Yes	Yes	Yes
	adj. R-sq	0.494	0.366	0.292	0.289	0.356
2	<i>CSR_Net</i>	0.019* (1.88)	0.048*** (3.58)	0.053*** (6.55)	0.047*** (8.28)	0.079*** (9.19)
	All controls	Yes	Yes	Yes	Yes	Yes
	Industry, Year FE	Yes	Yes	Yes	Yes	Yes
	adj. R-sq	0.493	0.369	0.284	0.282	0.352
3	<i>CSR_Adj1</i>	0.017 (1.15)	0.019 (1.10)	0.100*** (9.82)	0.082*** (11.01)	0.095*** (11.24)
	All controls	Yes	Yes	Yes	Yes	Yes
	Industry, Year FE	Yes	Yes	Yes	Yes	Yes
	adj. R-sq	0.493	0.363	0.292	0.290	0.357
4	<i>CSR_Adj2</i>	0.087* (1.95)	0.225*** (3.39)	0.195*** (4.79)	0.174*** (6.69)	0.285*** (8.16)
	All controls	Yes	Yes	Yes	Yes	Yes
	Industry, Year FE	Yes	Yes	Yes	Yes	Yes
	adj. R-sq	0.493	0.368	0.281	0.279	0.350
5	<i>CSR_Adj3</i>	0.181** (2.11)	0.471*** (3.57)	0.501*** (6.00)	0.438*** (7.92)	0.568*** (8.51)
	All controls	Yes	Yes	Yes	Yes	Yes
	Industry, Year FE	Yes	Yes	Yes	Yes	Yes
	adj. R-sq	0.494	0.369	0.283	0.282	0.350

Using a US sample covering over 15 years, Ioannou and Serafeim (2015) find that the emergence of a stakeholder focus among corporations has shifted analysts' perceptions of firms' CSR initiatives from pessimism to optimism, affecting the relation between CSR ratings and analysts' investment recommendations. Consistent with their findings, Table 8 provides evidence that the positive link between CSR performance and firm value tends to become stronger over time. This finding is important as it suggests that the inconclusive

findings in the literature regarding the relationship between CSR performance and firm value may also be partially affected by the choice of sample period. Although this evidence appears to support the growing importance of CSR performance to firm value as perceived by investors, an alternative explanation for this finding is that the CSR scores provided by information intermediaries, such as KLD, have become increasingly credible and more easily comparable across industries and firms. As differentiating between these two explanations is not the focus of this study, we leave it as an open question for future investigation.

V. Conclusion

Because the environmental and social dimensions of corporate performance have become critical issues globally, many capital market participants, including investors and financial analysts, have begun to pay attention to how firms address social and environmental issues. Although many studies examine the link between firms' CSR performance and firm value, this relationship is still a matter of ongoing debate. Hence, in this study, we examine whether these mixed findings in the literature are partially attributable to differences in how studies measure firms' CSR performance. In addition, we examine whether corporate governance, sample period, normal versus abnormal CSR investment, and selection of CSR categories affect the relationship between firms' CSR performance and firm value.

Overall, the evidence presented in this study suggests that there is generally a positive link between CSR performance and future firm value, regardless of how CSR performance is defined using CSR rating data from KLD. The evidence also indicates that although firms' corporate governance performance does have a significant effect on the link between CSR performance and firm value, controlling for the role of corporate governance in examining such a link does not reject the hypothesis that there is a positive relation between CSR performance and firm value. In our further examination of the link between normal versus abnormal CSR performance and firm value, we find that normal CSR performance tends to have a much stronger and significant association with future firm value than abnormal CSR performance. Finally, in examining the link between CSR performance and future firm value across CSR categories and sample periods, our evidence suggests that certain CSR categories (environment, employee, community, and diversity) and CSR performance ratings from later sample periods tend to exhibit a greater association with firms' future value. We believe future studies of the role of CSR performance in capital markets will find the findings of this study useful in helping them decide how to measure CSR performance using KLD data and design research models.

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Appendix A Variable Definitions

Variable	Definition	Source
CSR Variables		
<i>CSR_Level</i>	Total number of strengths. References: Flammer (2015, SMJ); Flammer <i>et al.</i> (2019, SMJ).	KLD database
<i>CSR_Net</i>	Total number of strengths – Total number of concerns across all selected categories. References: Choi and Wang (2009, SMJ); David <i>et al.</i> (2007, SMJ); Davidson <i>et al.</i> (2019, TAR); Gao <i>et al.</i> (2014, JAE); Hillman and Keim (2001, SMJ); Hubbard <i>et al.</i> (2017, SMJ); Kim <i>et al.</i> (2012, TAR).	KLD database
<i>CSR_Adj1</i>	The total number of CSR strengths each year adjusted by the median CSR strengths of the industry (i.e. industry-adjusted CSR strengths). References: Dhaliwal <i>et al.</i> (2011, TAR); Clarkson <i>et al.</i> (2019, AAAJ).	KLD database
<i>CSR_Adj2</i>	Strengths – Concerns, where Strengths = Total number of strengths in each category / Maximum number of strengths for that category in that year; and Concerns = Total number of concerns in each category / Maximum number of concerns for that category in that year. References: Lins <i>et al.</i> (2017, JF); Servaes and Tamayo (2013, MS).	KLD database
<i>CSR_Adj3</i>	(Total number of strengths across all selected CSR categories / Maximum possible number of strengths and concerns combined in all selected categories for each firm-year) – (Total number of concerns across all selected CSR categories / Maximum possible number of strengths and concerns combined in all selected categories for each firm-year). Reference: Albuquerque <i>et al.</i> (2019, MS).	KLD database
CG Variable		
<i>CG</i>	<i>CG</i> = Total number of strengths in Corporate Governance category – Total number of concerns in Corporate Governance category.	KLD database
All Other Variables		
<i>Tobin's Q</i>	Market value of assets divided by total book value of assets. Market value of assets is calculated as (<i>Assets</i> – <i>Book equity</i> + <i>Market equity</i>). <i>Assets</i> is book value of total assets. <i>Book equity</i> is book value of total common/ordinary equity. <i>Market equity</i> is the share price times the number of common shares outstanding.	Compustat
<i>ROA</i>	Net income before extraordinary items scaled by book value of total assets.	Compustat
<i>Leverage</i>	Total long-term debt scaled by book value of total assets.	Compustat
<i>AdExp</i>	Advertising expenses scaled by sales.	Compustat
<i>RevGrow</i>	Change of sales scaled by lagged sales.	Compustat
<i>Size</i>	Natural logarithm of book value of total assets in millions.	Compustat
<i>RDExp</i>	Research and development expenses scaled by sales.	Compustat
<i>Capex</i>	Capital expenditure scaled by book value of total assets.	Compustat
<i>Age</i>	Natural logarithm of the number of years since the company appeared in the CRSP database.	Compustat & CRSP

Appendix B

CSR Categories (Information Provided by KLD)

CSR Category	STR/CON	Subcategories
1 Environment (<i>ENV</i>)	<i>ENV_STR</i>	(1) Beneficial products and services, (2) pollution prevention, (3) recycling, (4) clean energy, (5) management systems, and (6) other strengths.
	<i>ENV_CON</i>	(1) Hazardous waste, (2) regulatory problems, (3) ozone-depleting chemicals, (4) substantial emissions, (5) agricultural chemicals, (6) climate change, and (7) other concerns.
2 Employee Relations (<i>EMP</i>)	<i>EMP_STR</i>	(1) Union relations, (2) cash profit sharing, (3) employee involvement, (4) retirement benefits, (5) health and safety, and (6) other strengths.
	<i>EMP_CON</i>	(1) Union relations, (2) health and safety concerns, (3) workforce reductions, (4) retirement benefits, and (5) other concerns.
3 Product (<i>PRO</i>)	<i>PRO_STR</i>	(1) Benefits for the economically disadvantaged, (2) quality, (3) R&D/innovation, and (4) other strengths.
	<i>PRO_CON</i>	(1) Product safety, (2) marketing/contracting concerns, (3) antitrust, and (4) other concerns.
4 Community (<i>COM</i>)	<i>COM_STR</i>	(1) Charitable giving, (2) innovative giving, (3) non-US charitable giving, (4) support for housing, (5) support for education, (6) volunteer programmes, and (7) other strengths.
	<i>COM_CON</i>	(1) Investment controversies, (2) negative economic effect, (3) tax disputes, and (4) other concerns.
5 Human rights (<i>HUM</i>)	<i>HUM_STR</i>	(1) Positive record in South Africa, (2) indigenous people relations, (3) labour rights, and (4) other strengths.
	<i>HUM_CON</i>	(1) South Africa, (2) Northern Ireland, (3) Burma, (4) Mexico, (5) labour rights, (6) indigenous people relations, and (7) other concerns.
6 Diversity (<i>DIV</i>)	<i>DIV_STR</i>	(1) CEO, (2) promotion, (3) board of directors, (4) work/life benefits, (5) women & minority contracting, (6) employment of the disabled, (7) gay & lesbian policies, and (8) other strengths.
	<i>DIV_CON</i>	(1) Controversies, (2) non-representation, and (3) other concerns.

STR = Strength; *CON* = Concern.

Appendix C

Firm-level Determinants of CSR Performance (Based on Lys, Naughton, and Wang, 2015)

Variable	Definition	Source
<i>CSR_Normal</i>	Estimated level of CSR performance obtained by regressing total CSR performances on various economic determinants described below and both industry and year fixed effects.	
<i>CSR_Abnormal</i>	CSR residual obtained by regressing total CSR performances on various economic determinants as described below and both industry and year fixed effects.	
<i>AssetTurnover</i>	Net sales divided by total assets.	Compustat
<i>ProfitMargin</i>	Income before extraordinary items divided by net sales.	Compustat
<i>Cash</i>	Cash scaled by total assets.	Compustat
<i>CFO</i>	Cash flow from operating activities divided by total assets.	Compustat
<i>Leverage</i>	Total long-term debt scaled by book value of total assets.	Compustat
<i>MTB</i>	Sum of market value of equity, long-term debt, debt in current liabilities, liquidation value of preferred stock and deferred taxes, and investment credit divided by total assets.	Compustat
<i>Size</i>	Natural logarithm of total assets.	Compustat
<i>RDExp</i>	Research and development expenses scaled by sales.	Compustat
<i>AdExp</i>	Advertising expenses scaled by sales.	Compustat
<i>LitigationExp</i>	Settlement (litigation/insurance) after-tax scaled by net sales.	Compustat
<i>CG</i>	Difference between number of strengths in Corporate Governance category and number of concerns in Corporate Governance category.	KLD Database

Appendix D

First Stage Model for Constructing Abnormal CSR

CSR =	Predicted Sign	CSR_Level (1)	CSR_Net (2)	CSR_Adj1 (3)	CSR_Adj2 (4)	CSR_Adj3 (5)
<i>AssetTurnover</i>	+	0.187*** (4.98)	0.066 (1.41)	0.180*** (4.86)	0.017* (1.78)	0.008* (1.68)
<i>ProfitMargin</i>	+	-0.066** (-2.51)	0.004 (0.14)	-0.047* (-1.77)	0.002 (0.32)	0.001 (0.29)
<i>Cash</i>	+	1.022*** (8.13)	0.617*** (4.26)	1.133*** (8.92)	0.076** (2.53)	0.060*** (4.01)
<i>CFO</i>	+	0.600*** (3.82)	1.239*** (6.51)	0.589*** (3.75)	0.235*** (5.69)	0.113*** (5.62)
<i>Leverage</i>	-	-0.890*** (-8.53)	-0.463*** (-4.00)	-0.822*** (-8.01)	-0.047* (-1.91)	-0.038*** (-3.12)
<i>MTB</i>	+	0.115*** (8.22)	0.168*** (10.87)	0.092*** (6.33)	0.036*** (10.86)	0.016*** (9.92)
<i>Size</i>	+	0.812*** (33.82)	0.558*** (23.17)	0.780*** (32.63)	0.102*** (21.23)	0.052*** (20.70)
<i>RdExp</i>	+	0.013 (0.22)	0.278*** (3.81)	0.068 (1.12)	0.072*** (4.47)	0.034*** (4.29)
<i>AdExp</i>	+	4.144*** (4.31)	4.512*** (4.44)	3.996*** (4.23)	0.826*** (4.26)	0.395*** (3.83)
<i>LitigationExp</i>	-	-5.029* (-1.69)	3.608 (1.01)	-5.996* (-1.93)	0.672 (0.88)	0.311 (0.82)
<i>CG</i>	+	0.177*** (6.45)	0.510*** (16.57)	0.173*** (6.23)	0.140*** (21.63)	0.053*** (16.11)
Constant		-4.506*** (-7.77)	-5.819*** (-9.48)	-4.341*** (-8.15)	-1.269*** (-8.80)	-0.589*** (-9.35)
Industry, Year FE		Yes	Yes	Yes	Yes	Yes
N		43,483	43,483	43,483	43,483	43,483
adj. R-sq		0.355	0.178	0.321	0.142	0.143

This table presents the results from the first-stage estimation in which the dependent variable is the level of a firm's CSR performance, and the independent variables are various economic determinants. t-values are reported beneath the coefficient estimates in parentheses and are computed using standard errors robust to firm clustering. All variables are defined in Appendix A. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.