2-2017

Essays in Corporate Responsibility and Finance

Mert Demir
Graduate Center, City University of New York

Essays in Corporate Responsibility and Finance

by

Mert Demir

A dissertation submitted to the Graduate Faculty in Business in partial fulfillment of the requirements for the degree of

Doctor of Philosophy, The City University of New York

2017

Essays in Corporate Responsibility and Finance

by

Mert Demir

This manuscript has been read and accepted by the Graduate Faculty in Business in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

Armen Hovakimian

Date	Chair of Examining Committee

Karl Lang

Date	Executive Officer

Supervisory Committee:

Terrence F. Martell

Mehmet Özbilgin

The City University of New York

Abstract

Essays in Corporate Responsibility and Finance

by

Mert Demir

Advisor: Armen Hovakimian

This dissertation consists of three chapters:

Chapter 1: The Effects of Corporate Social Performance and Social Norms on Market Valuation of Nonfinancial Disclosures Using a novel measure of the quality of corporate social responsibility (CSR) disclosures by global companies, this paper analyzes how CSR report quality affects firm value when mediating roles of social pressure and CSR performance are considered. I find that firms operating in socially controversial industries enjoy higher valuations when they issue high-quality CSR reports. I also find that for firms with poor CSR performance, higher-quality CSR disclosure is associated with a decline in firm value, while this negative association is mitigated for firms with superior CSR performance. These results indicate that CSR disclosure quality is priced by the market over and above CSR performance and the act of CSR disclosure.

Chapter 2: Firm Value, Legal Environment, and Corporate Social Responsibility Disclosure Regulations I study valuation implications of Corporate Social Responsibility (CSR) disclosure quality in countries with strong and weak legal systems. I find that CSR disclosure quality has a negative impact on firm value when CSR reporting is regulated and the legal system in place is strong. By contrast, CSR disclosure quality has a positive impact on firm value when CSR disclosure is regulated and the legal system is weak. I interpret these results as disclosure regulations partially making up for lack of adequate legal system strength to induce credible disclosures to benefit firm value. CSR disclosure regulations do not have as much a role to play in countries with strong legal systems, which already foster disclosure credibility. Instead, CSR disclosure regulations impair the discretion firms could exercise in choosing a

judicious level of disclosure quality to improve firm value.

Chapter 3: Does Corporate Responsibility Affect Firm Leverage? The Roles of Environmental Risk Management and Stakeholder Relations on Capital Structure This paper investigates the impact of a firm's corporate social and environmental activities on its capital structure decisions. I find that firms with superior environmental corporate responsibility (CR) and poor social CR activities hold significantly higher leverage. However, a strong environmental commitment completely dominates the leverage impact of CR for firms that excel in both social and environmental CR. This result is also valid for firms with high cash flow volatility and taxable income, consistent with the risk reduction benefits associated with pursuing a proactive environmental program. Furthermore, environmental commitment mostly preserves its impact on leverage even when the incentives to maintain better stakeholder (social) relations are paramount relative to good environmental reputation, such as for firms producing unique products or those with high liquidation risk, as predicted by the stakeholder theory of capital structure. These results underscore the material impact of environmental management policies, *alongside* social relations, on corporate financing decisions, and thus extend the stakeholder theory of capital structure beyond its initial conceptualization to cover the role of a firm's broader CR orientation on financial leverage.

Acknowledgments

I would like to acknowledge the ones who have helped me tremendously during this journey. First, I owe a great debt of gratitude to my wife, Ceylan, and my two cats, Köpük and Krystal, for their patience, support, and just being on my side during every single stage of this very important phase of my life. This dissertation, like everything else in my life, could neither have been completed nor be meaningful and worth pursuing without them.

Second, I would like to acknowledge the incredible love and support from my parents, Filiz and Naci, my late grandmother, Hayriye; and my brother, Okyar through this long journey. Their guidance and understanding are a big contributor to how I became myself and have always been invaluable and incomparable.

Third, I would like to express my sincere gratitude to my professors, colleagues, and truly unmatched mentors Terrence Martell and Mehmet Özbilgin, for their support, encouragement, and wisdom, without which this dissertation could not have been successfully completed.

Fourth, I would like to thank my dissertation committee chair, Professor Armen Hovakimian, for giving me the opportunity to build the foundations of this dissertation with my true passion–doing good while doing well. This dissertation could not have reached its highest quality without his generous support and patience during this process.

Fifth, I would like to thank Professor Prakash Sethi, who has inspired me to continue working in this field and encouraged me to bring the thoughts in my mind to reality. It has always been a great pleasure working with him.

Finally, I am grateful to all who put their faith in me and raised, inspired, helped, and urged me to work hard and do better.

I gratefully acknowledge financial support by the Doctoral Student Research Grant from the Graduate Center, CUNY.

Wharton Research Data Services (WRDS) was used in preparing this dissertation. This service and the data available thereon constitute valuable intellectual property and trade secrets of WRDS and/or its third-party suppliers.

Contents

List of Tables

The Effects of Corporate Social Performance and Social Norms on Market Valuation of Nonfinancial Disclosures

In response to growing pressure from stakeholders, particularly institutional investors, many firms have started publishing CSR reports to convey how they manage their exposure to environmental and social risks.[1] As of 2013, 72 percent of S&P500 companies published CSR reports, an increase from 53 percent in 2012 and 20 percent in 2011 (Governance and Accountability Institute, 2014). While CSR reporting becomes more ubiquitous, disclosure quality varies widely across reports, because in most cases these reports are not subject to any disclosure standards or mandatory audits. Investors, increasingly keen on valuing nonfinancial risks, find CSR reports useful, yet they are unlikely to view CSR performances equally when disclosure quality differs. That is, a firm reporting a given level of CSR performance in great detail and accuracy will likely command a different valuation from a firm that reports the same performance but without providing much detail or accuracy. As such, CSR disclosure quality should matter in firm valuation alongside CSR performance. While CSR performance has received much attention in the valuation literature, CSR disclosure quality has not. To fill this void, this paper uses a novel measure of CSR disclosure quality and examines its impact on firm value over and above CSR performance.

Extant literature documents several benefits associated with higher CSR including a more efficient information environment and more accurate earnings forecasts (Dhaliwal, Radhakrishnan, Tsang, & Yang, 2012), lower perceived risk and cost of capital (El Ghoul, Guedhami, Kwok, & Mishra, 2011), better reputation (Stanaland, Lwin, & Murphy, 2011), and higher valuations (Margolis, Elfenbein, & Walsh, 2007; Matsumura, Prakash, & Vera-Muñoz, 2014; Orlitzky, Schmidt, & Rynes, 2003; Srivastava, McInish, Wood, & Capraro, 1997; Waddock & Graves, 1997). Other studies examine the link between the act of issuing a CSR report and proxies of firm value including cost of capital (Dhaliwal, Li, Tsang, & Yang, 2011) and cash-flows (Plumlee, Brown, & Marshall, 2008).

This study contributes to this literature by analyzing a comprehensive measure of CSR reporting quality hypothesizing that a firm reporting its CSR activities with better disclosure quality will be viewed more favorably by investors. I further examine the interaction of a firm's membership in sin industries and CSR reporting quality,

[1] I use a broad definition of what constitutes a CSR report, defining it as reporting on various economic, environmental, and social activities of a company.

hypothesizing that firms with lower social reputations will benefit more from high quality CSR reporting. As firms in sin industries (Hong & Kacperczyk, 2009) already face pressure from the general public and socially oriented investors, a higher quality reporting of their socially responsible activities can mitigate such pressures and positively impact social risk and firm value.[2] Investors would also perceive a CSR report favorably provided that it accurately and comprehensively explains the firm's achievements, not lack thereof, in corporate responsibility and sustainability. Hence, I predict that the relation between CSR reporting quality and firm value will be more pronounced for firms with higher CSR performance. I analyze the interaction of CSR reporting quality not only with nonfinancial performance, but also with financial performance, expecting a further improvement in firm value when high CSR disclosure quality is attained by a financially sound firm. This particular specification also allows us to identify when poor overall market conditions during the sample period (2009 and 2011) may shape results.

I collect the data on the quality of CSR reports from a unique database provided by the Corporate Social Responsibility-Sustainability (CSR-S) Monitor® (Weissman Center for International Business, 2012). Using a systematic content-analysis framework, the CSR-S Monitor evaluates the scope and quality of the information on the eleven most common contextual elements in CSR reports, including environmental responsibility, supply-chain management, stakeholder engagement, and corporate governance. A unique feature of the CSR-S Monitor is the external assurance. Due to limited standardization in this area, the content of a CSR report is largely determined by firm management. This raises concerns over the reliability of disclosed information. To address these concerns, companies use external assurance as a control mechanism to establish stakeholder confidence (Simnett, Vanstraelen, & Wai Fong, 2009). Recognizing the exigence of information quality assurance, the CSR-S Monitor measures and scores the extent to which a company utilizes third-party integrity assurance to verify accuracy of its CSR disclosure.

To test these hypotheses, I regress firm value (industry-adjusted Tobin's Q) on CSR reporting quality along with corporate social reputation (sin stocks), CSR performance, legal environment, firm-level control variables, year, and industry dummies to control for sectoral heterogeneity. In the analyses, I adopt the Heckman selection model

[2]I use two alternative definitions of sin industries. I follow Hong and Kacperczyk (2009) and define sin industries as alcohol (SIC 2100-2199), tobacco (SIC 2080-2085), and gaming (NAICS 7132, 71312, 713210, 71329, 713290, 72112, and 721120). In the rest of the study, I report the results using this definition. Following Cai, Jo, and Pan (2012), I also extend this definition of sin industries to include environmentally sensitive industries as weapons (SIC 3760-3769, 3480-3489, 3795), oil (SIC 1310-1339, 1370-1382, 1389, 2900-2912, 2990-2999), biotech (SIC 2833, 2836), and cement (SIC 3240-3241). I obtain qualitatively the same results using either definitions of sin stocks.

(Heckman, 1979; Maddala, 1983; Wooldridge, 2002) to account for potential selection bias. All else being equal, I find negative and mostly insignificant association between CSR reporting quality and firm value. This result is consistent with those of Dhaliwal et al. (2011), who find a positive and mostly insignificant association between cost of equity capital and the initiation of a CSR report, and Richardson and Welker (2001), who document a positive relation between social disclosure and cost of capital. To explain their results, Dhaliwal et al. (2011) examine the interaction of CSR performance and CSR report initiation and Richardson and Welker (2001) examine the interaction of financial performance and social disclosure score. Dhaliwal et al. (2011) find a reduction in cost of equity capital for firms with superior CSR performance, while Richardson and Welker (2001) find only a mitigating effect for firms with high financial performance.

I examine the interaction of CSR reporting quality with both relative CSR performance and financial performance. The addition of relative CSR performance interaction with CSR reporting quality reveals a significantly negative association between firm value and CSR reporting quality for firms with low relative CSR performance. However, the interaction term moderates this negative association, leading to an economically insignificant impact on firm value of CSR reporting quality for firms with high relative CSR performance. Apparently, everything else being equal, firms with low relative CSR performance experience a decline in firm value when they issue more informative CSR reports, while firms with high relative CSR performance seem to experience no economically significant valuation impact. The interaction of financial performance with CSR reporting quality, on the other hand, results in a higher firm value—meaning that firms with better financial performance benefit from issuing a more detailed and accurate CSR report. Interestingly, the relation between CSR reporting quality and firm value turns significantly positive as well when I incorporate the interaction of CSR reporting quality with membership in sin industries. This result confirms that for firms facing inherent reputational risks, credible communication of socially responsible activities is paramount to improving firm value.

The literature on firm value impact of disclosure quality has to date examined primarily financial disclosure quality. Recent examples include the firm value impact of changes in financial disclosure quality brought about by IFRS adoptions (e.g., Charitou, Karamanou, & Lambertides, 2015; Daske, Hail, Leuz, & Verdi, 2008; Pae, Thornton, & Welker, 2008) and financial disclosure quality in general (e.g., Lang, Lins, & Maffett, 2012; Lang & Maffett, 2011).

These studies by and large find that increases in financial disclosure quality have positive firm value consequences. The present paper contributes to this literature by examining the quality of nonfinancial disclosures that are becoming commonplace and that have been documented to attract the attention of investors via sell-side financial analysts (Dhaliwal et al., 2012). That the paper documents a positive relation between nonfinancial disclosure quality and firm value at higher levels of financial performance and for firms more in need of a better public image, yet a negative relation at lower levels of CSR performance constitutes an interesting addition to this literature.

The remainder of the paper is organized as follows. In the next section, I discuss the relevant literature and develop the hypotheses. In Section 3, I review the methodology and the details of the model as well as the data used for the analysis. Section 4 presents the empirical results and is followed by robustness checks in Section 5. Lastly, I provide a summary of the findings and conclude the paper.

Background and Hypotheses Development

Current State of CSR Reporting

Since the 1990s, investors have increasingly gravitated toward sectors promoting environmentally and socially responsible practices. Investor preferences have shifted toward investments that can effectively address societal challenges and still maintain profitability (The Forum for Sustainable and Responsible Investment [US SIF], 2012). According to the US SIF 's 2012 report on sustainable and responsible investing trends in the United States, at least $3.74 trillion is managed using one or more socially responsible investing strategies. Growing concerns from investors related to sustainability issues and increasing demand for socially responsible practices propelled firms to become more socially aware and engage in social responsibility activities. CSR reports have been a key medium for the communication of these efforts and to attain a "social license to operate" (Effas, Eurosif, WICI, Railpen, & AccountAbility, 2010; Gunningham, Kagan, & Thornton, 2004).

These reports outline firms' CSR strategies to anticipate, evaluate, understand, and better manage present and future financial and nonfinancial risks and opportunities (Governance and Accountability Institute, 2012). Firms benefit from disclosing CSR information in several ways. First, less transparent firms may be perceived as being higher

risk, raising suspicion they might be concealing their unfavorable performance (Grossman & Hart, 1980; Milgrom, 1981). Second, content quality and comprehensiveness of a report signal a firm's attitude toward sustainability. This is especially important because such disclosure helps a firm demonstrate alignment with the norms of the social system of which it is a part and allows it to achieve the organizational legitimacy it needs to operate as well as to avoid potential legal, economic, and other social risks (Dowling & Pfeffer, 1975). Third, clearly defined goals, objectively evaluated results, and independently verified content can reduce the information risk of a firm by leading to better understanding of its overall CSR performance, thereby resulting in lower required returns (Graham, Harvey, & Rajgopal, 2005). Fourth, by reducing uncertainties and investor skepticism as well as encouraging more informed investment decisions, a high quality CSR report leads to higher credibility and reputation for the firm, which could trigger higher share prices (Lundholm & Van Winkle, 2006). Last, firms with high-quality CSR reports may be more visible to the public, particularly socially-responsible investors. This results in a broader investor base and produces higher diversification benefits that will have positive implications for cost of capital and firm value (Heinkel, Kraus, & Zechner, 2001).

Readers cite comparability along with the credibility and relevance of information as their top priorities (Wensen, Broer, Klein, & Knopf, 2011). Unlike with financial reporting, companies lack an established format for CSR reporting (Sethi, Martell, & Demir, 2015b). This results in considerable variation in content and comprehensiveness of CSR reports, preventing effective evaluations and comparisons (Derwall, Koedijk, & Ter Horst, 2011; Kolk, 2004). A recent investor survey shows that 79 percent of investors are dissatisfied with the information quality in and comparability of these reports (PwC, 2014). The 2012 report on global trends in sustainability reporting released by the CSR-S Monitor attests to these arguments (Weissman Center for International Business, 2012). The Monitor's assessment of the scope and quality of the information provided by the world's largest companies in their CSR reports reveals that disclosure quality varies widely across a set of 559 global corporations. The highest CSR disclosure quality is 70.75 and the lowest score is 3.25 out of a maximum of 100 points.

Lack of adequate standardization gives managers nearly free rein in determining the content of a CSR report. Unlimited managerial discretion can lead to ineffective reporting that does not quite meet the needs of a firm's stakeholders. Management can also manipulate reporting by promoting more socially alluring activities and concealing the socially controversial ones, casting doubt on the credibility of these reports (Delmas & Cuerel Burbano, 2011;

Marquis & Toffel, 2012). A remedy for concerns about credibility of a CSR report is integrity assurance (Sethi, Martell, & Demir, 2015a). However, outside of Europe, reports with a third-party assurance are relatively scarce. Of the 559 reports analyzed by the Monitor, 28.9 percent are assured by one of the Big Four public accounting firms and 16.1 percent are assured by a specialized provider (such as Bureau Veritas or ERM), while 55 percent have no formal assurance. Among the North American companies, only 6.6 percent provide assurance from a public accounting firm, while 15.1 percent use specialized providers and the remaining 78.3 percent provide no formal assurance at all. In contrast, 56 percent of European CSR reports have assurance from a public accounting firm, 15 percent from a specialized provider, while 29 percent have no formal assurance.

Overall, these statistics illustrate the major variations in CSR reporting quality and call for a detailed analysis of the differences in the content and quality of CSR reports. Previous studies have not examined CSR reporting quality, instead focused on a firm's dichotomous decision of whether or not to issue a CSR report (or a particular section of it, such as environmental disclosures).[3] Studying CSR reporting using data only on the presence or absence of a sustainability report cannot capture the impact of rich variation in reporting quality stemming primarily from lack of standardization. That is, a firm reporting a given level of CSR performance but without detail or qualified third-party assurance will not be viewed as equivalent to another firm reporting the same CSR performance but with great detail and qualified third-party assurance. This study aims to examine whether and how a firm's choice of CSR reporting quality matters for firm valuation in the present global environment with virtually no established CSR reporting standards.

Prior Research

A central question for firm stakeholders is whether CSR is a value-enhancing or value-destroying activity. Opponents argue that CSR-based investing wastes a company's limited resources for suboptimal investments (Friedman, 1970; Jensen, 2002; T. Levitt, 1958), while proponents contend that CSR investments create wealth by addressing society's needs (Berman, Wicks, Kotha, & Jones, 1999; Kotler & Lee, 2008; Porter & Kramer, 2006). Scholars have sought to resolve this dispute by trying to document the link between social and financial performance (Margolis et al., 2007). To do so, they have relied on sustainability reports as the primary source of information about a firm's

[3]Information quality in CSR reports is assessed based on comprehensiveness, specificity of detail, quality, and accuracy of a report's content. See the section CSR reporting quality scores for detailed information.

engagement in CSR on various fronts. Yet the mostly voluntary and unregulated nature of nonfinancial disclosures precipitates significant variation in the scope and quality of the information in these reports.

In financial reporting, however, disclosure quality has received considerable attention (Botosan, 1997; Botosan & Plumlee, 2005; Diamond & Verrecchia, 1991; Easley & O'hara, 2004; J. S. Hughes, Liu, & Liu, 2007; Lambert, Leuz, & Verrecchia, 2007; Leuz & Verrecchia, 2000). Previous research on financial reporting shows a negative association between disclosure and cost of capital (Botosan, 2006; Healy & Palepu, 2001). Disclosure theory lends support to these results on the basis that greater transparency enhances firm value through reducing the information asymmetry between firm and stakeholders (Botosan, 1997; Diamond & Verrecchia, 1991), which leads to reduced information risk and lower risk premium (Merton, 1987), reduced estimation risk (Barry & Brown, 1984; Clarkson, Guedes, & Thompson, 1996), or enhanced stock market liquidity and lower transaction costs (Amihud & Mendelson, 1986). While these concepts typically apply to financial reporting, they can be extended to nonfinancial reporting because their common fundamental premise is better information content (Bachoo, Tan, & Wilson, 2013; Richardson, Welker, & Hutchinson, 1999). Hence, benefits similar to those from high quality financial disclosure are expected from nonfinancial disclosure as well.

Research on nonfinancial disclosure can be grouped into two major categories. The first category includes studies covering the regulatory and policy efforts to address environmental issues and monitor firms' environmental impacts. These studies focus particularly on firms' environmental disclosures and investigate various aspects of such disclosures, including the stock market's valuation of sulfur dioxide emissions (K. Hughes, 2000; Johnston, Sefcik, & Soderstrom, 2008), voluntary disclosure and valuation impact of carbon disclosures (L. Chapple, Clarkson, & Gold, 2013; Matsumura et al., 2014), the relation between environmental disclosure and performance (Al-Tuwaijri, Christensen, & Hughes, 2004; Clarkson, Li, Richardson, & Vasvari, 2008; S. B. Hughes, Anderson, & Golden, 2001), and firm value (Konar & Cohen, 2001; Plumlee, Brown, Hayes, & Marshall, 2010; Plumlee et al., 2008).

The second category includes studies that take a broader perspective by examining disclosures including but not limited to the environmental activity. Firms are accountable to a diverse set of stakeholders with varying interests and concerns; these stakeholders exert pressure for disclosure on a wider array of activities, ranging from human rights, philanthropy, and community relations to bribery and corruption. Therefore, extending scholarly focus to CSR reports in their entirety instead of concentrating solely on environmental management provides a full scale view into nonfinancial

reporting.[4] For example, Richardson and Welker (2001) use the information on environmental and social performance provided in annual financial reports to examine the association between nonfinancial disclosure and cost of equity capital for a sample of Canadian firms between 1990 and 1992. Their results show a positive impact of social disclosure on cost of capital for firms with poor financial performance, but no impact for firms with better financial performance. Dhaliwal et al. (2011) investigate the link between the initiation of voluntary stand-alone sustainability reporting and cost of equity capital for a sample of US firms. They find lower cost of equity with the publication of a CSR report for firms with above-industry-median CSR performance. While the methods of Dhaliwal et al. (2011) differ from those of this study in that their CSR initiation proxy does not control for the information quality of a CSR report, their results corroborate CSR disclosure's reduced information asymmetry and, thereby, improved firm value under certain conditions.

In both categories of CSR studies, there have been extensions using more elaborate measures of nonfinancial disclosure. Using a disclosure index consistent with the GRI's sustainability reporting guidelines, Plumlee et al. (2010) analyze the relationship between voluntary environmental disclosure quality and valuation for a sample of US firms. They document both a negative and a positive relationship: a negative one when disclosure is disaggregated by type, and a positive one when the overall disclosure score is used. Reverte (2012) analyzes the impact of CSR disclosure ratings on cost of equity capital for a sample of Spanish listed firms and finds a negative impact of disclosure ratings on cost of capital. He further analyzes the moderating effect of a firm's environmental sensitivity on the CSR disclosure/cost of equity association and documents a stronger relationship between the two for firms operating in environmentally sensitive industries. Similarly, Bachoo et al. (2013) investigate the association between CSR reporting quality classified by Corporate Analysis Enhanced Responsibility (CAER) and firm value for a sample of Australian firms. They show a significant negative association between the quality of sustainability reports and cost of equity capital. Like Reverte (2012), Bachoo et al. (2013) report that firms operating in environmentally sensitive industries are particularly driving their results.

Nevertheless, even these recent, more complex analyses of CSR impacts leave room for improved precision in model construction as well as richer sample sets. For instance, the sample used by Plumlee et al. (2010) is comprised

[4]The CSR-S Monitor reports that an average report includes 8.73 of the 11 most common contextual elements included in CSR reports, including environmental management (See section CSR reporting quality scores for a list of these 11 contextual elements). This indicates that a typical CSR report includes considerably more information than environmental performance alone.

of US firms from five industries, while Bachoo et al. (2013) include only Australian firms. In contrast, the sample used in this study includes firms from 42 countries in 13 industries. Plumlee et al. (2010) examine only environmental disclosures, whereas this study analyzes the CSR reports in their entirety, which could include as many as 11 different CSR aspects. The main disclosure quality measure used by Bachoo et al. (2013) is a dichotomous variable that equals 1 if a report passes qualification tests and 0 otherwise, whereas the measure used in this study examines each sustainability report on a continuous scale ranging from 0 to 100, providing a more accurate representation of the variance in the quality of CSR reports. Furthermore, their alternative disclosure quality measure proxies for environmental reporting quality only, while this study's measure improves upon that by assessing the overall CSR reporting quality on a set of 11 different contextual elements covering the most common relevant areas of corporate responsibility.

Hypotheses Development

The benefits from reporting on CSR can be justified on several grounds. First, a high-quality CSR report can reflect a firm's commitment to CSR policies and practices (W. Chapple & Moon, 2005). Second, a well-prepared CSR report can also resolve adverse selection problems by reducing transaction costs and eliminating information asymmetries (S. Brown & Hillegeist, 2007; Leuz & Wysocki, 2008; Verrecchia, 2001). Third, perceived CSR has positive implications on corporate reputation through a firm's increased legitimacy in the eyes of its stakeholders (Stanaland et al., 2011). Furthering this argument, Srivastava et al. (1997) show that investors perceive firms with good reputations to be less risky than those with poor reputations and Iwu-Egwuonwu (2011) suggests that a good reputation benefits the firm both financially and otherwise. Fourth, reporting on CSR attracts socially responsible investors to the firm and increases its analyst coverage (Dhaliwal et al., 2011; Ioannou & Serafeim, 2010). Issuance of these reports leads to higher visibility and the chances of being selected by a broader group of investors (Financial Accounting Standards Board (US), 2001; A. Levitt, 1998; Linsmeier et al., 1998). CSR reporting has thus been shown to result in a broader investor base, higher diversification benefits, lower cost of capital, and higher valuations for higher quality issuers (Dhaliwal et al., 2011; El Ghoul et al., 2011; Heinkel et al., 2001). Fifth, better disclosure can also alter the estimation risk of the firm in the capital markets (Easley & O'hara, 2004; Lambert et al., 2007; Leuz & Verrecchia, 2000).

Empirical research, however, does not unanimously support these arguments. Some earlier studies conclude that capital markets actually penalize CSR-disclosing companies, although such negative impact could be mitigated when disclosure is about high CSR performance (Dhaliwal et al., 2011), or when accompanied by financial performance (Richardson & Welker, 2001). Moreover, Clarkson, Fang, Li, and Richardson (2013) find that environmental disclosure increases firm value with no significant effect on cost of capital. This observed disparity between theory and empirical evidence suggests that the impact of CSR report quality on firm value may vary, and the association between the two remains an empirical question. Therefore, I try to aggregate these two perspectives on CSR disclosure in this study. In particular, despite some of the empirical findings, I hypothesize a positive association between CSR reporting quality and firm value, yet supplement my hypothesis by investigating potential factors that can influence this association (discussed in hypotheses 2 and 3):

HYPOTHESIS 1: *Firms issuing higher-quality CSR reports will have higher values.*

Prior studies show that social norms have become important factors influencing investor behavior (El Ghoul et al., 2011; Hong & Kacperczyk, 2009). Firms operating in socially controversial industries such as alcohol, tobacco, and gaming face serious reputational risks and negative public opinion because of the undesirable social and environmental consequences of their products and services (Hong & Kacperczyk, 2009). According to the value-enhancement hypothesis, firms may view CSR as an important business strategy that can be integrated with the strengths of a firm to enhance its economic as well as social and environmental value, especially for those operating in controversial industry sectors (Cai et al., 2012). I posit that firms with lower reputations and that are subject to more public scrutiny will be more inclined to engage in socially responsible practices and promote their achievements to the public. Disclosure of nonfinancial practices will have higher marginal impact on capital markets' valuation of such firms. Hence, I propose a stronger relationship between CSR reporting quality and firm value for firms operating in socially controversial industries.

HYPOTHESIS 2: *The relation between CSR reporting quality and firm value will be stronger for firms operating*

in socially controversial industries.

Corporate disclosures improve the information environment, but more disclosure may not guarantee higher valuation. Extant literature documents that management could use corporate disclosure as a means of influencing the public's perception of the company (e.g., N. Brown & Deegan, 1998; Hooghiemstra, 2000). Limited standardization could also induce managers to manipulate these *mostly voluntary* disclosures to alter public opinion (Hobson & Kachelmeier, 2005).[5] Moreover, greater transparency for a poor performing firm could also be a negative signal considering potential nonfinancial risks and the firm's weaknesses (Dhaliwal et al., 2011). I predict that the relationship between CSR report quality and firm value will be stronger for firms that actually show high CSR performance, which alleviates concerns over the riskiness of the firm as well as the credibility of the information disclosed in its report:

HYPOTHESIS 3: *The valuation impact of CSR report quality will be stronger for firms with higher CSR performance.*

Methodology

Sample Selection

The data on CSR reports come from the CSR-S Monitor. The CSR-S Monitor collects CSR reports (standalone or integrated) published by the world's largest companies. They are selected among those listed in multiple indices, such as the Fortune 250 and Fortune Global 250 in the years 2009 and 2011. This generates an initial sample of 1338 unique firms from 47 countries (though companies based in the US, Japan and the UK constitute nearly two-thirds of the sample). The CSR-S Monitor then searches for CSR reports issued by these companies using various sources such as the Corporate Register[6] and Corporate Responsibility Newswire (CSRwire)[7] as well as company websites. The CSR-S Monitor has identified a total of 1062 CSR reports published by 620 unique companies over the sample period

[5] This issue is explored in greater depth later in the paper as a robustness check.
[6] http://www.corporateregister.com
[7] http://csrwire.com

that are eligible for scoring. I exclude (i) non-public companies that are not required to issue financial reports to the public, (ii) firms that lack financial and accounting information, and (iii) financial firms (two-digit SIC code 60-69) due to their fundamentally different business models. This reduces the initial sample to 998 unique firms (1881 firm-year observations–data are not available for all firms in both years), and results in a final sample of 815 CSR reports issued by 467 unique firms. CSR performance data come from the Thomson Reuters ASSET4 database (Thomson Reuters ASSET4 ESG, 2002-2012).[8] Financial and accounting data come from the Compustat North America and Compustat Global databases (Standard & Poor's/Compustat, 2002-2013). I obtain legal environment variables, Anti-Director Rights index and Rule of Law index, from La Porta, Lopez-De-Silanes, Shleifer, and Vishny (1998) and the International Country Risk Guide (ICRG) through Lexis-Nexis, respectively. [9]

Model Specification

This study aims to analyze the impact of CSR reporting quality on firm value. Using the Heckman (1979) model, I regress firm value (Tobin's Q) on CSR reporting quality score, CSR performance, a set of legal and firm-level variables, industry and year fixed effects. I cluster firms at the country level to capture any correlation across firms in a given country resulting from similarities in laws and regulations.

Data and Measures

Dependent variable. There can be systematic variations in Tobin's Q across industries due to overall industry growth trends or shocks (Cai et al., 2012). I control for such variations in the analysis using industry dummies and industry-adjusted Tobin's Q.[10] In the analyses, I use industry-adjusted Tobin's Q as the dependent variable. Industry-adjusted Tobin's Q is arguably a better measure than Tobin's Q in that it controls for the effect of industry-specific factors on Tobin's Q (Campbell, 1996). It is also used alone or with other proxies of firm value in several other studies (e.g., Bebchuk & Cohen, 2005; Bebchuk, Cohen, & Ferrell, 2009; Cai et al., 2012; Harjoto & Jo, 2011; La Porta, Lopez-De-Silanes, Shleifer, & Vishny, 2002). Following La Porta et al. (2002), I define Tobin's Q as book assets minus

[8] http://im.thomsonreuters.com/solutions/content/asset4-esg/

[9] http://w3.nexis.com/sources/scripts/info.pl?10896

[10] As a robustness check, I exclude industry dummies and redo the analyses with industry-adjusted Tobin's Q as the dependent variable. I obtain similar results (not reported).

book value of equity and deferred taxes, plus market value of equity, all divided by book assets, where market value of equity is measured as common shares outstanding multiplied by the year-end price. I measure industry-adjusted Tobin's Q as the natural logarithm of a firm's Tobin's Q adjusted for annual industry-median Tobin's Q.

CSR reporting quality scores. The data on nonfinancial reporting quality is provided by the CSR-S Monitor. The CSR-S Monitor provides an assessment of the quality of CSR reports published by companies worldwide. It is not a performance assessment or ranking tool for a company's actual CSR performance or activities. Companies are selected based on large size and presence on multiple global indices. Out of this initial universe of companies, a company is included in the CSR-S Monitor if the company has (1) a stand-alone CSR report, or (2) a sizeable CSR reporting segment as part of its annual report. The CSR-S Monitor uses a multi-step procedure to identify CSR reports that are eligible for scoring. A CSR report is eligible for scoring if it (1) is published in the sample period of 2009 or 2011, (2) is written in English or has an English translation available, and (3) is presented as a cohesive unit. Website-based reports are also accepted provided that they meet the aforementioned criteria. In the case of multiple reports published by a company (e.g., a standalone CSR report and several other CSR publications), the stand-alone CSR report is given priority and scored. The Monitor emphasizes the CSR report as a single unit and, therefore, websites with CSR-related information do not constitute valid documentation and are not included in the sample.

The CSR-S Monitor assesses nonfinancial reporting quality based on 11 key CSR performance attributes identified as the most relevant areas in the CSR domain (Weissman Center for International Business, 2012). These are: environmental management, philanthropy, stakeholder engagement, supply-chain management, labor relations, corporate governance, bribery and corruption, human rights, codes of conduct, executive message, and integrity assurance. The CSR-S Monitor analyzes the content of a CSR report for each attribute based on comprehensiveness, specificity of detail, quality, and accuracy of reporting. As such, each category is scored with respect to (1) the acknowledgment of problems related to the particular attribute, (2) the material and specific activities undertaken to address these problems, (3) the publication of measurable results, and (4) whether independent verification and assurance of these results were included in the report. The scores on these categories are then weighted to provide a total score ranging from 0 to 100, where a higher score indicates higher quality reporting. The CSR-S Monitor provides individual scores for each of the

11 categories as well as an overall score.[11]

Unlike other CSR scoring frameworks, the CSR-S Monitor integrates independent third-party assurance in the scoring process. In the data, assurance measures the degree to which third party validation is part of the report. Unlike financial reporting, lack of standardization in sustainability reporting raises concerns about the credibility of these reports. Providing an independent assurance of a CSR report thus increases the credibility of the information presented in these reports (Simnett et al., 2009).[12]

Corporate social reputation: Sin industries. Increasing social awareness among investors has led them to apply varying levels of "social screening," which is the process of selecting companies to invest in based on social and environmental performance beyond financial performance. The most common type of social screening is avoiding alcohol, tobacco, or gambling industries, which are defined as *sin industries* (Hong & Kacperczyk, 2009). Following Hong and Kacperczyk (2009), I identify three groups of sin stocks and create the variable, *SIN*, which takes values 1 for sin stocks such as alcohol (SIC 2100-2199), tobacco (SIC 2080-2085), and gaming (NAICS 7132, 71312, 713210, 71329, 713290, 72112, and 721120) companies and 0, otherwise. I also search companies at the segment level to identify if any of a company's segments fall into any of these sin industries.[13] I then augment this list with the previous one to create a full list of sin stocks.

Independent variables. La Porta, Lopez-De-Silanes, Shleifer, and Vishny (1997) argue that legal structure is one of the major factors shaping financial systems. In the regressions, I include their legal environment variable to measure the strength of a legal regime in a country. According to the literature, however, the structure of legal regime does not imply that existing laws are enforced strictly. To account for this distinction, I follow Durnev and Kim (2005) and use two different measures: *ADRI*, the Anti-Director Rights index, is a de jure measure of investor protection in a country as in La Porta et al. (1998). The scores on this variable range from 0 to 6. For the strength of de facto law enforcement, *RULE OF LAW*, the Rule of Law index from the International Country Risk Guide is used

[11] See the Appendix for further details of the scoring methodology.

[12] The CSR-S Monitor lists two groups of assurance providers as (1) public accounting/auditing firms such as one of the "Big Four," and (2) specialized integrity assurance provider firms such as Bureau Veritas or ERM.

[13] Company segment data is collected from Compustat Segments (Standard & Poor's/Compustat, 2002-2013) and Lexis-Nexis Corporate Affiliations (http://www.corporateaffiliations.com/) databases.

[14]. This measures the strength of law enforcement in a country and ranges from 0 to 10. I calculate the past two-year average of the latter index and use that in the analysis. In Table 3, the Pearson correlation between *ADRI* and *RULE OF LAW* is negative yet insignificant, while the Spearman correlation between the two is significant positive, as shown in Table 4. This indicates that structure of law and its enforcement do not depart from each other, at least for my sample. Additionally, I use a combination of *ADRI* and *RULE OF LAW* by multiplying the two variables to represent both aspects of regulation and define it as *COMPOSITE*. The average for the composite index is 15.16, and the maximum and minimum scores for our sample are 36.04 for the United Kingdom and 3.58 for China, respectively (not reported). This shows the dispersion in the quality of legal environment across countries in my sample and supports the inclusion of a legal variable in the regression analysis.

Limited standardization and regulatory oversight on CSR reporting incentivize managers to manipulate public perception of their firms through nonfinancial disclosures (Hobson & Kachelmeier, 2005). Such opportunistic behavior misguides investors as the disclosed information may not reflect actual performance of a firm. Accordingly, previous research shows that publication of a CSR report reduces cost of capital only for firms that actually show high CSR performance (Dhaliwal et al., 2011). In the analysis, I follow Dhaliwal et al. (2011) and include a measure of a firm's CSR performance relative to its industry median, *HIPERF*, and its interaction with reporting quality, *CSRSxHIPERF*. *HIPERF* is the relative CSR performance dummy that equals 1 if a firm's CSR performance in a given year is higher than its industry median, and 0 otherwise. I use CSR performance scores provided by the Thomson Reuters ASSET4 ESG database (Thomson Reuters ASSET4 ESG, 2002-2012).[15] [16] This database provides annual sustainability performance information for more than 4,000 companies worldwide. Its measure reflects CSR performance of companies in 18 subcategories of the four main aspects of CSR: environmental, social, corporate governance, and economic. The scores on each of these 18 categories range between 0 and 1, with high scores indicating stronger performance in a given category. These scores on each subcategory are then added to create an equally weighted aggregate CSR performance score ranging from 0 to 100.[17]

[14] https://www.prsgroup.com/about-us/our-two-methodologies/icrg

[15] ESG stands for environmental, social, and governance.

[16] http://im.thomsonreuters.com/solutions/content/asset4-esg/

[17] Thomson Reuters ASSET4 ESG database is used in other studies as well (e.g., Cheng, Ioannou, & Serafeim, 2014; Eccles, Ioannou, & Serafeim, 2014).

Following Durnev and Kim (2005), I define investment opportunities, *INV OPP*, as the 2-year geometric average of annual percentage growth in net sales in the past two years. The motivation behind using a sales- rather than an earnings-based measure is to avoid accounting for the volatility of earnings as well as to mitigate the influence of variations in accounting practices, laws, and regulations across countries and regions (La Porta et al., 2002).

Research and development intensity, *R&D*, is reported as a major factor in CSR research (Padgett & Galan, 2010). It is measured by research and development expenses scaled by lagged sales. However, not all firms report R&D expenditures in their financial statements. When missing, R&D is set to 0 and following Himmelberg, Hubbard, and Palia (1999), an R&D dummy, *R&D DUMMY*, is created and set to 1. This eliminates the possibility of any bias toward technology-oriented firms in the analysis.

I define firm size, *SIZE*, as the logarithm of sales. This choice is motivated by the nature of the cross-country data and to mitigate possible problems due to different accounting practices across countries.

Previous studies show higher valuations for firms cross-listed in the US stock exchanges (Doidge, Karolyi, & Stulz, 2004). Stricter accounting standards in the US to which ADR-listed firms are subject will also affect their disclosures (Durnev & Kim, 2005). To control for the impact of US cross-listings, I include a dummy variable, *ADR*, that equals 1 if a firm's shares are listed on US exchanges, and 0 otherwise. ADR information for firms is collected from Compustat database (Standard & Poor's/Compustat, 2002-2013).

Profitability is measured by return on equity, *ROE*, in the analyses. I include capital expenditures, *CAPEX*, measured by a firm's capital expenditures scaled by its book value of total assets. I use a proxy for the level of financial constraints, *LEVERAGE*, measured by the ratio of total long and short-term debt to total assets. There is still debate about whether (and how) leverage affects firm value (Fama & French, 1998). Hence, it is difficult to have any priors on the direction of its impact. As it is not a variable of interest in my current model, I include *LEVERAGE* as a control variable. Following Campbell (1996), I group firms into 13 industries based on their primary two-digit SIC code. Industry dummies are added to account for differences in accounting practices, business structure, industry-specific performance, and regulations across industries. Year dummies are included to control for year-specific factors in the data.

The Model

CSR reporting is mostly voluntary and several factors could induce firms to disclose their CSR efforts. To address a potential selection bias, I estimate the firm value regressions in Equation 1 jointly with the issue-choice model in Equation 2 below, using the Heckman selection model (Heckman, 1979; Maddala, 1983) procedure. I employ the Full Information Maximum Likelihood (FIML) model in the analysis and jointly estimate the following firm-value model in Equation 1 with the issue-choice model that explains a firm's decision to report on CSR (*ISSUE*) in Equation 2 to test my hypotheses:[18]

$$\begin{aligned} VALUE^{c}_{j,t} =& \alpha + \beta_1 * CSRS^{c}_{j,t-1} + \beta_2 * CSRS^{c}_{j,t-1} * SIN_j + \beta_3 * CSRS^{c}_{j,t-1} * HIPERF_{j,t-1} \\ &+ \gamma_1 * SIN_j + \gamma_2 * HIPERF_{j,t-1} + \gamma_3 * LEGAL^{c}_{t-1} \\ &+ \sum_{k=1}^{K} \delta_k * Z^{c}_{k,j,t-1} + \sum_{t=1}^{T-1} y_t + \sum_{i=1}^{I-1} d_i + \epsilon^{c}_{j,t} \end{aligned} \tag{1}$$

$$\begin{aligned} ISSUE_{j,t} =& \beta_0 + \beta_1 * HIPERF_{j,t} + \beta_2 * SIN_j + \beta_3 * FIRMAGE_{j,t} + \beta_4 * ASSETS_{j,t} \\ &+ \beta_5 * MANDATORY\_REGUL^{c} + \beta_6 LEGAL^{c}_{t} \\ &+ \sum_{k=1}^{K} \delta_k * Z^{c}_{k,j,t} + \sum_{t=1}^{T-1} y_t + \sum_{i=1}^{I-1} d_i + \nu^{c}_{j,t} \end{aligned} \tag{2}$$

where *VALUE* is industry-adjusted Tobin's *Q*; *ISSUE*, an indicator variable that takes values 1 if the firm issues a CSR report for year *t*, and 0 otherwise; α, a constant; *CSRS*, CSR reporting quality score; *SIN*, a dummy for companies operating in sin industries; *HIPERF*, a dummy for companies with above-industry-average CSR performance;

[18]The FIML method requires stricter assumptions (i.e., the two error terms from the full model and the issue-choice model to follow the joint normal distribution) to hold than the two-step, Limited Information Maximum Likelihood (LIML) method. In some cases, the latter could provide more robust estimates (Wooldridge, 2002). Therefore, I redo the analyses using the latter and the results are consistent with those from FIML (not reported).

LEGAL, the quality of a country's legal environment. Interaction terms, *CSRS * SIN* and *CSRS * HIPERF*, measure the interaction of CSR reporting quality score with sin industry and high performance dummies, respectively. *Z*, firm-level control variables; *y*, year dummy; *d*, industry dummy; *c*, country; *i*, industry; *j*, firm; *t*, year; *K*, the number of control variables; *T*, the number of years, and *I*, the number of industries. The exclusion restriction variables in the issue-choice model are chosen among the variables that are documented to influence a firm's decision to disclose (but not to have a direct impact on firm value) in previous studies on nonfinancial disclosure (e.g., Dhaliwal et al., 2011; Durnev & Kim, 2005; Harjoto & Jo, 2011; Matsumura et al., 2014). These variables are *FIRMAGE*, the age of a firm in a given year; *ASSETS*, book value of total assets of a firm; and *MANDATORY_REGUL*, a dummy for the presence of mandatory CSR reporting regulations in a country (KPMG, Center for Corporate Governance in Africa, Global Reporting Initiative, & United Nations Environment Programme, 2013).

Results

The objective is to determine whether the depth of information and scope of coverage in CSR reports have any impact on firm valuation. I regress firm value on CSR reporting quality, a sin industry dummy, CSR performance, a legal environment proxy and firm-level control variables, along with industry and year dummies using the Heckman (1979) model to account for potential selection bias, since CSR reporting is mostly voluntary. I estimate this model using the Full Information Maximum Likelihood (FIML) method. I use three different versions of the legal variable to proxy three distinct aspects of legal environment in the regressions. Following the common practice in the literature, I use industry and year dummies to capture time invariant differences between industries and years, respectively. I report heteroskedasticity-robust standard errors clustered by country to control for similarities among firms within a country.

Summary Statistics

Table 1 provides summary statistics by country for the CSR-S Monitor scores (*CSRS*). The US has the highest number of CSR reports with quality scores. The UK leads Europe with 71 reports, followed by France (49) and Germany (37). These numbers highlight the dominance of developed economies in nonfinancial reporting. Whereas the US leads the sample with the most reports, it has a relatively low average CSR report quality (29.18) compared to other leading

countries such as Japan (31.76), the UK (32.12), and France (36.84). Contrary to Maignan and Ralston (2002), who argue diversion in disclosure practices across European countries, I find overall high-quality reporting from European firms compared to their counterparts in other parts of the world. Italy has the highest average score (both for Europe and for the entire sample) of 53.16, followed by Spain (47.36), Germany (42.88), and Sweden (42.12). The results also indicate that higher quality disclosure is not a phenomenon particular to European firms, but is observed in other countries, such as Brazil (51.89 average) and Taiwan (48.17 average) as well. Overall, there is still considerable room for improvement in CSR reporting quality across all countries.

[Table 1 about here.]

Table 2 lists the industry composition of the overall sample as well as sample of issuers based on industry. I document substantial across-industry variation in reporting practices. Consumer Durables and Basic Industry companies dominate the sample with the highest number of observations (339 and 270 firm-year observations, respectively) and published reports (117 and 144 reports published, respectively). These two industries constitute around 32 percent of the entire sample. At the lower end of the sample are Leisure and Transportation industries with 26 and 39 reports, respectively. The Textile and Trade industry is ranked around the middle with 146 companies, though only 24 percent of them issued a valid CSR report for scoring, the lowest issue rate among all industries in the sample.

[Table 2 about here.]

Table 3 and Table 4 present the Pearson and Spearman correlation coefficients among the main variables, respectively. The results in Table 3 show a significant (p<0.05) and negative (ρ = -0.0878) correlation between CSR reporting quality measure (*CSRS*) and Tobin's *Q*, consistent with the empirical studies outlined above. Similarly, the correlation between *CSRS* and industry-adjusted Tobin's *Q* is negative (ρ = -0.0885) and significant at the 5 percent level. Additionally, I find significant correlations between several other control variables and the CSR reporting quality measure. In particular, *CSRS* and the CSR performance measure, *HIPERF*, are positively (ρ = 0.209) and significantly correlated at the 1 percent level. *HIPERF* is also mostly highly positively correlated with both firm value measures, supporting earlier meta-analytic research findings (e.g., Margolis et al., 2007; Orlitzky et al., 2003). *SIN* is positively correlated with both firm value measures and *CSRS*, yet the correlations are very small and statistically insignificant.

INV OPP, *R&D* and *SIZE* are significant and positively correlated, while *LEVERAGE* is negatively correlated with *CSRS*. These findings underscore the necessity of controlling for confounding factors in the regression analysis to isolate the unique impact of CSR reporting quality on valuation. I observe that all correlation coefficients are below the 0.80 threshold, suggesting that multicollinearity is not an issue in the analysis (Gujarati, 2003). Spearman correlation coefficients presented in Table 4 also provide a qualitatively similar picture.

[Table 3 about here.]

[Table 4 about here.]

CSR Disclosure and Firm Value

Table 5 presents the results of the main analysis.[19] Columns (1)-(3) show the results for the baseline regressions. The signs of the coefficients on *CSRS* point to an insignificant and negative association between reporting quality and valuation. Perhaps this is because stakeholder attention privileges those businesses that conflict with environmental and social norms or with other goals of society at large, thereby resulting in different valuations across firms with varying social and environmental reputations. Therefore, I investigate the mediating role of corporate social reputation on the association between CSR reporting quality and firm value in columns (4)-(6). Corporate reputation is proxied by sin industry membership (*SIN*), and its interaction with CSR report quality (*CSRSxSIN*) is included in the model to test the second hypothesis. The coefficients on the main effect, *CSRS*, remain insignificant and negative, whereas the interaction term, *CSRSxSIN*, is all highly significant (p<0.01) and positive regardless of the choice of legal variable. Consistent with the second hypothesis, this outcome suggests that high-quality CSR reporting has a significantly positive impact on firm value only for firms operating in socially controversial industries. The results suggest that, *ceteris paribus*, membership in other industries does not result in such a significant impact. These findings further highlight two important points: First, the valuation impact of CSR reporting quality varies significantly across firms depending on the public's perception of their social and environmental impacts. Second, the coefficients on *CSRSxSIN* indicate such a strong relation between the quality of a CSR report and firm value for sin industry firms that, combined with the

[19]In all tables, the coefficients on *CSRS* and its interaction terms with other variables are multiplied by 100 to represent maximum potential impact of CSR report quality on firm value.

main effect of *CSRS*, the insignificant negative impact for CSR reporting quality turns positive. This result suggests that it behooves firms with poor reputations not merely to engage in socially responsible projects, but also to document those activities in a report that is comprehensive, complete and credible to improve their standing with capital markets.

In addition to the possibility that stakeholder attention varies across firms, another explanation may be that greater transparency accompanied by poor CSR performance actually places a firm into an unfavorable position with its stakeholders, eventually reducing firm value. A firm with high CSR performance, however, could benefit from high-quality reporting by promoting its strengths, and lower its social risk relative to its industry peers. This can explain the negative coefficients on *CSRS* and is consistent with Dhaliwal et al. (2011), who show that publication of a CSR report should be supplemented with high CSR performance to exert a favorable impact on cost of capital. In models (7)-(9), I include the interaction with the relative CSR performance of a firm, *CSRSxHIPERF*, to test the third hypothesis. The results reveal a strong negative impact of CSR report quality on firm value (p<0.01) but this relation is almost fully mitigated by superior CSR performance. I observe all highly significant (p<0.01) and positive coefficients on *CSRSxHIPERF*, suggesting that the valuation impact of CSR report quality changes with CSR performance. These results, however, provide imperfect support for the third hypothesis. While the negative valuation impact of *CSRS* for firms with higher than industry-median CSR performance does not turn positive, the combined effect of *CSRS* and *CSRSxHIPERF* is very close to zero, indicating that CSR reporting quality is value-irrelevant for such firms.[20] These results are consistent with those of Dhaliwal et al. (2011) in suggesting that capital markets put more weight on the presence of a CSR report than its scope and quality for high CSR performers. However, this is not the case with below-median CSR performers for whom higher CSR report quality further reduces firm value.

I have obtained the expected signs on most of the control variables. Consistent with Orlitzky et al. (2003) and Margolis et al. (2007), CSR performance variable, *HIPERF*, has all positive and significant coefficients, indicating that firms that outperform their industry peers in CSR have higher valuations. Other findings indicate that sin firms, firms with valuable investment opportunities and high capital expenditures, and those that spend more on R&D have higher firm values. Firms are also valued higher in countries with better investor protection (shown by *ADRI*), supporting La Porta et al. (2002). I find no evidence of an effect of ADR-listing on valuations.[21] Overall, these results underscore

[20]Unreported statistics testing the combined effect of the coefficients on *CSRS* and *CSRSxHIPERF* show no significant relation.

[21]There is no consensus on the valuation effect of ADR listing in the literature. Doidge et al. (2004) finds a positive impact of ADR-listing on firm

the existence of other factors that mediate the valuation effect of CSR reporting quality. I find that higher-quality CSR reporting (1) provides more incentives to increase firm value for firms that suffer from poor social reputation or face higher public scrutiny due to negative environmental and social consequences of their businesses, and (2) helps firms with above-industry-median CSR performances to mitigate potential negative effects of greater transparency on firm value.

[Table 5 about here.]

Robustness Checks

Industry Screenings

Two industries, Basic Industries and Consumer Durables, have the highest number of issued reports in my sample, and could be driving the results. To isolate their impact and determine whether these findings truly apply to a broad range of industries, I drop the observations from these two industries from the sample and redo the analysis.[22]. The results are presented in Table 6. *CSRS* remains insignificant in this reduced industry sample. When integrating the interaction with *SIN*, I find qualitatively similar results that indicate a strong negative effect (i.e., a positive coefficient) of social reputation on the valuation of CSR reporting quality. The results for the interaction with performance, *CSRSxHIPERF*, also reiterate the role that relative CSR performance plays in the relation between the quality of a CSR report and firm value. These results indicate that industry bias does not contaminate the results.

[Table 6 about here.]

The Influence of Economic Conditions

I investigate further the finding of an insignificant valuation effect of CSR report quality for certain groups of firms such as non-sin and high CSR performers. The latter contrasts with previous research findings, particularly with those of Dhaliwal et al. (2011), who document that increased cost of capital for first-time CSR reporters turns negative

value. La Porta et al. (2002) analyze the relation across *LEGAL* settings and find no valuation impact of ADR listing in civil law countries, while only a small positive effect in common law countries. Durnev and Kim (2005) echo their findings and find no significant effect on firm value.

[22]Similarly, I drop observations from the two largest countries in the sample, the US and Japan, to isolate a potential unbalanced impact of these two largest-size countries and redo the analyses. The results are consistent with those in Table 5 (not reported).

for those with superior CSR performances. I suspect that my findings might be an artifact of the recent financial crisis, which coincides with the sample period. Financial performance is documented to influence valuations of nonfinancial disclosures in times of economic distress (Richardson & Welker, 2001), and may explain these results. Due to lack of data from another period, I follow an approach similar to that of Richardson and Welker (2001), and predict that relative financial performance of a firm could alter capital markets' valuation of nonfinancial disclosures. To test this prediction, I introduce to the model in Equation 1 an interaction of reporting quality with a dummy variable representing a firm's relative financial performance (i.e., *ROE*) against its industry peers, *CSRSxDROE*.

[Table 7 about here.]

I expect a positive coefficient on the CSR report quality/financial performance interaction term. The results are shown in Table 7. In line with my expectation, the coefficients on *CSRSxDROE* are all highly significant positive (p<0.01), as shown in columns (1)-(3). These results confirm that CSR reporting quality/firm value association is mediated by financial performance such that firm value increases (decreases) with the quality of CSR reporting for firms with superior (poor) financial performance. Moreover, in columns (7)-(9), the combined effect of the interactions with financial and nonfinancial performances adjusted for the main effect of CSR report quality is significantly positive (i.e., the sum of the coefficients on the first three variables in Table 7 ranges between 0.121 and 0.129, yielding a combined significance of p<0.05 (not reported)), suggesting that firms with better financial and CSR performance enjoy even higher valuations from higher-quality CSR reporting. Conversely, neither of these performance measures alone has a sufficiently strong positive valuation impact to induce a reversal effect. These results are consistent with Waddock and Graves (1997), who argue that internal financial resources are used by firms to strategically invest in CSR activities that are more challenging to finance externally for various reasons (Helfat, 1997; Surroca, Tribó, & Waddock, 2010). Hence, availability of internal resources (or profitability) that generates the surplus needed to finance CSR investments is necessary, and perhaps even more so during economic downturns. Thus, the results of this study document firms that outperform their industry peers both financially and nonfinancially as having higher incentives to publish higher-quality CSR reports.

Firm Value Effect by Years

In Table 5, I pool two years of data, 2009 and 2011, for which the CSR-S Monitor provides report quality scores. Reporting firms publish reports in either one or both of these years, making independence of these observations questionable. Thus, in Table 8 and Table 9, I split the sample into two and report the results of the analysis for each year separately. Overall, these results mostly echo the earlier findings and confirm that my results are not driven by my pooling of sample data. I also observe different coefficients on some of the variables between the two years. Specifically, I observe some positive coefficients on CSR report quality in 2009, consistent with the first hypothesis. This effect, however, turns negative in 2011, as in the pooled sample results in Table 5. I observe similar patterns in some other variables as well. For instance, two traditional measures of firm financial strength, profitability (*ROE*) and leverage (*LEVERAGE*), are also significant in 2009, whereas their significance mostly disappears in 2011. This could be an artifact of the recent financial crisis during which increasing short-termism overtakes long-term strategic focus. Sudden shifts in investor preferences between core-financials and nonfinancials over such periods of distress could be a driving factor. Nevertheless, I continue to find significant and positive coefficients on the interactions with sin industry membership (*CSRSxSIN*), relative CSR (*CSRSxHIPERF*) and financial performances (*CSRSxDROE*) in both years, attesting to the hypotheses detailed above. The combined effect of *CSRS* and *CSRSxSIN* presents positive valuations from issuing high-quality CSR reports for firms facing social and environmental issues on a regular basis. Potential negative impacts of higher-quality disclosure are also mitigated for firms with superior CSR performances, presented by the joint effect of *CSRS* and *CSRSxHIPERF*. Firm relative financial performance preserves its significant impact on the valuation of CSR reporting quality. Overall, these findings suggest that higher-quality information released by certain groups of firms is valued favorably by the capital markets despite counter-pressures resulting from overall market conditions.

[Table 8 about here.]

[Table 9 about here.]

Alternative CSR Disclosure Proxy

As a robustness check, I redo the analysis using firm-level CSR disclosure data compiled by Bloomberg (Bloomberg ESG, 2009-2012) as a substitute for the CSR reporting quality measure of the CSR-S Monitor. [23] Bloomberg ESG data assesses a firm's level of disclosure on its environmental, social, and governance (ESG) practices. Bloomberg's ESG extends beyond CSR reports and collects ESG data from publicly available resources such as CSR reports, annual reports, and company websites. Bloomberg ESG assigns an overall as well as component-specific disclosure score between 0 and 100 (higher score indicates greater transparency) to companies based on the extent to which they disclose CSR-related activities. ESG scores are based on the presence (or lack thereof) of mainly quantitative information in company filings and measure whether a company discloses information on a set of CSR-related elements. In contrast, the CSR-S Monitor provides an assessment of disclosure content and accounts for both quantitative and narrative information to convey a detailed review of a CSR publication. Therefore, ESG data on Bloomberg can be taken not as a measure of disclosure quality but, at best, as a measure of disclosure level that enables a somewhat higher level of objectivity. In untabulated results, I obtain qualitatively similar results in all of the disclosure level regressions and therefore conclude that the results are robust to alternative measures of CSR transparency.

CSR Reporting Regulations

My sample covers a broad range of countries, which require or endorse CSR reporting at varying levels. The presence of such restrictions has implications for corporate disclosure behavior in general and CSR reporting in particular. These requirements represent a bare minimum amount of information firms must provide in their nonfinancial disclosures and improve informativeness and credibility of such disclosures. To control for their potential influence on the valuation of CSR reports, I collect country-level data on CSR disclosure regulations and guidelines worldwide from the Carrots and Sticks report on regulation on sustainability reporting (KPMG et al., 2013). I split the sample of countries into two groups based on the existence of mandatory CSR reporting requirements. I re-perform the analysis on each of these samples separately. In these analyses, I continue to find similar results (unreported). Firm value mostly does not respond to CSR reporting quality in both sub-samples, whereas the positive moderating role of corporate

[23] https://www.bloomberg.com/professional/sustainable-finance/

social reputation (and financial performance) on valuation persists for both groups, supporting the second hypothesis. Similarly, higher-quality reporting leads to less negative impact on firm value for firms that outperform their industry medians. These results show that my approach is robust with respect to and not affected by government- or exchange-led efforts with considerable non-governmental organization assistance to regulate disclosure of nonfinancial information.

Additional Sensitivity Analyses

Extant literature posits that endogeneity could be a potential problem in my analysis. It could be argued that higher-valued firms have more resources to allocate to CSR activities, creating a reverse causality problem. There could also be other unobserved factors that determine the quality of CSR reporting and that I fail to control for in the regressions. This will result in the overstatement of CSR reporting quality effects and lead to false conclusions. I try to address these potential issues by using a lead-lag approach in the analysis. Specifically, I use the lagged values of all right-hand-side variables in the regressions, as presented in Equation 1. Alternatively, I follow an instrumental variable approach. I repeat the main analysis using firm age, *FIRM AGE*, to instrument reporting quality (Harjoto & Jo, 2011). The results are consistent with those in Table 5, indicating that endogeneity is not an issue affecting my findings (unreported). In further analyses, I analyze sin firms and other firms in my sample separately. Despite the reduced power of the tests due to smaller sample size of sin industry firms, my results support those in Table 5 for both of these two subsamples. Finally and in a similar fashion, I check whether my results apply similarly to firms with high and low financial performances. I split the sample based on the *DROE* variable, which takes the value of 1 if a firm outperforms its industry-relevant firms, and 0 otherwise. I form two subsamples, one with firms that have *DROE* equal to 1 and the other with those that have *DROE* equal to 0. I repeat the analyses for these two subsamples and obtain results consistent with those in Table 7. Overall, I find that these alternative specifications do not alter the main inferences I draw from the main analysis.

Discussion and Conclusion

Over the last two decades, driven by the globalization of sustainability issues, increasing demand from investors for ethical and social practices, and the mission and values of company managements, the number of individuals,

investment companies, money managers and financial institutions practicing sustainable and responsible investing has grown dramatically (The Forum for Sustainable and Responsible Investment [US SIF], 2012). Companies have begun issuing CSR reports to address increasing stakeholder demand and also to earn a "social license" from their stakeholders to operate (Effas et al., 2010; Gunningham et al., 2004; Wensen et al., 2011). Around 4,000 companies, most of which are located in Europe, reported their sustainability practices worldwide in 2010 (Wensen et al., 2011). As the number grows, reporting on CSR performance has also become a source of competitive advantage for companies. Publishing reports that have better scope, are comprehensive and of higher quality allowed firms to improve their credibility and public image in the global investment arena. These reports, however, vary widely in quality due to lack of standardization in nonfinancial reporting (Kolk, 2004; Marquis & Toffel, 2012). Subsequently, it becomes harder for investors to distinguish between companies truly committed to high-quality reporting from those that are "free-riders." This is a pressing issue for investors who rely heavily on the information presented in these reports to assess companies' performances from environmental and social perspectives.

The scoring framework used in this study, the CSR-S Monitor, provides a practical solution to the variation in sustainability reports. It employs a comprehensive content evaluation framework to evaluate CSR reports based on 11 leading aspects of corporate responsibility. Through these reports, firms inform their stakeholders about their exposure to ESG-related risks and opportunities, which have emerged as important factors in investment decision-making. Using overall CSR scores provided by the CSR-S Monitor, this study investigates links between a firm's commitment to high-quality reporting and its value perceived by investors. Moreover, given the significant differences across firms and the environments in which they operate, the relationship between corporate social responsibility and firm performance may vary under different settings (Goll & Rasheed, 2004). The premise in this paper is that the scope and quality of disclosed information in CSR reports and their impact on firm value will be stronger (1) in environments where there is more information asymmetry and higher (reputational) risk, and (2) for firms with superior nonfinancial (CSR) and financial performance. I find strong support for the influence of both corporate social reputation and social as well as financial performance on the valuation impact of reporting quality.

This study contributes to the literature in a number of ways. First, it diverges from the prior literature by focusing on the quality of CSR reports. Our understanding of corporate nonfinancial reporting is limited and its potential

link to capital markets' valuation of firms needs further research. This study sheds light on this long-overlooked aspect of CSR by particularly focusing on the quality of information in CSR reports. Second, using an analytic framework, any potential concerns regarding reliability and accuracy of the CSR information used in my analyses are mitigated. In this respect, the CSR-S Monitor has significant advantages over other, mostly author-constructed measures of reporting quality used in previous studies. Third, with its global coverage, this study overcomes the limitations of previous research in geographical representation and, thereby, broadens our knowledge of corporate reporting practices worldwide. Last but not least, I document the role of two important moderating factors, namely membership in sin industries and above-median CSR performance, in the relationship between CSR reporting quality and firm value. These factors, although very important, are largely unexplored in the relevant literature. Hence, the results of this study contribute to a better understanding of firm value implications of disclosing firm nonfinancial information such as CSR disclosure quality.

Table 1: CSR Disclosure Quality, by Country

Country	Mean	Median	Max	Min	Std Dev	No. of Reports
Australia	37.99	33.23	62	20.90	12.97	16
Austria	41.50	38.50	48	38	5.63	3
Belgium	27.66	29	37.25	10.25	10.82	5
Brazil	51.89	50.45	70.75	35.90	18.05	4
Canada	31.50	30.50	63.25	5	13.78	20
China	26.60	24.30	31.50	24	4.25	3
Colombia	40.38	40.38	63.75	17	33.06	2
Denmark	33.86	36.05	49.30	16.50	11.37	6
Egypt	13.20	13.20	13.20	13.20	.	1
Finland	35.57	38.88	53	10.70	13.41	10
France	36.84	33.60	65	12.70	13.17	49
Germany	42.88	42.75	59	16	11.04	37
Greece	33.32	33.32	50.75	15.90	24.64	2
Hong Kong	29.61	32.50	39.80	19.75	8.29	5
Hungary	29.45	29.45	33	25.90	5.02	2
India	38.42	40.75	48	26.50	10.94	3
Indonesia	27.62	26.10	36.75	20	8.48	3
Ireland	34.65	28.90	58	18.75	15.99	7
Israel	38.48	38.48	38.75	38.20	0.39	2
Italy	53.16	55.42	66.50	34.25	9.45	10
Japan	31.76	30	68.75	9.10	10.79	113
Malaysia	17.40	17.40	22.30	12.50	6.93	2
Mexico	31.90	30.45	49.30	15	12.96	8
Netherlands	40.77	42.15	61.80	25	9.07	18
New Zealand	29.22	26.50	41.40	19.75	11.08	3
Norway	30.64	36.60	46.25	9.50	15.44	7
Peru	7.70	7.70	7.70	7.70	.	1
Poland	18.77	18.77	20.25	17.30	2.09	2
Russia	16.03	16.03	17.25	14.80	1.73	2
Saudi Arabia	12	12	12	12	.	1
Singapore	16.45	16.40	17.25	15.70	0.78	3
South Africa	34.04	32.25	61.10	14.10	14.34	15
South Korea	43.05	44.63	64.50	13.50	14.18	10
Spain	47.36	51.63	74.30	6.40	16.89	14
Sri Lanka	29.58	29	41.75	18	11.89	3
Sweden	42.12	45.38	64.75	18.40	13.84	16
Switzerland	31.92	32.75	52.30	7.25	12.80	19
Taiwan	48.17	51.60	64	21.80	16.66	6
Thailand	32.90	32	49.50	11.80	15.17	5
Turkey	33.13	33.13	41.75	24.50	12.20	2
United Kingdom	32.12	32.70	63.90	5	14.24	71
United States of America	29.18	27.40	64.75	2	12.65	304
Total	32.95	32.25	74.30	2	13.66	815

Source: Weissman Center for International Business (2012)

Includes firms with non-missing CSR-S scores only.

Table 2: Industry Composition of Firms

Two-Digit SIC Code	Industry Definition	Firms	Percent	Cumulative	Issuers	Issuer Percentage
25,30,36,37,50,55,57	Consumer Durables	339	18.02	18.02	117	35%
8,10,12,14,24,26,28,33	Basic Industry	270	14.35	32.38	144	53%
49	Regulated Utilities	159	8.45	40.83	83	52%
34,35,38,39	Capital Goods	154	8.19	49.02	77	50%
7,72,73,75,76,80,82,83,87,89,96	Services	148	7.87	56.88	42	28%
22,23,31,51,53,56,59	Textiles and Trade	146	7.76	64.65	35	24%
1,2,9,20,21,54	Food and Tobacco	142	7.55	72.2	75	53%
13,29	Petroleum	135	7.18	79.37	63	47%
46,48	Unregulated Utilities	123	6.54	85.91	52	42%
15,16,17,32,52	Construction	98	5.21	91.12	46	47%
40,41,42,44,45,47	Transportation	80	4.25	95.37	39	49%
27,58,70,78,79	Leisure	63	3.35	98.72	26	41%
99	Other	24	1.28	100	16	67%
	Total	1,881	100		815	

Table 3: Pearson Correlation Matrix

	Tobin's *Q*	Industry-Adj. Tobin's *Q*	*CSRS*	*ADRI*	*RULE OF LAW*	*HIPERF*	*SIN*	*INV OPP*	*R&D*	*SIZE*	*ROE*	*CAPEX*	*LEVERAGE*
Tobin's *Q*	1												
Industry-Adj. Tobin's *Q*	0.831***	1											
CSRS	-0.0878**	-0.0885**	1										
ADRI	-0.0200	0.0302	0.0211	1									
RULE OF LAW	-0.0102	-0.0484	0.0193	-0.00252	1								
HIPERF	0.000738	0.122***	0.209***	0.0225	0.0378	1							
SIN	0.0575	0.0459	0.0235	0.0484	0.0102	-0.0892**	1						
INV OPP	0.138***	0.159***	0.0849**	0.0699**	-0.0936***	0.0999***	0.0511	1					
R&D	0.136***	0.201***	0.0946***	-0.146***	0.0945***	0.0481	-0.0928***	-0.0599*	1				
SIZE	-0.305***	-0.274***	0.161***	0.00111	-0.158***	-0.299***	-0.0200	0.0112	-0.0386	1			
ROE	0.0977**	0.0881**	-0.0442	0.0447	-0.00613	-0.0121	0.0278	0.0431	0.0150	-0.0122	1		
CAPEX	0.0104	0.105***	0.0510	0.122***	-0.246***	0.0932***	-0.105***	0.206***	-0.194***	0.0844**	0.0510	1	
LEVERAGE	0.128***	0.0467	-0.0777**	0.0105	-0.0186	-0.0673*	0.0111	-0.123***	-0.153***	0.00546	-0.0674*	-0.0120	1

This table reports the Pearson correlation coefficients among all dependent and independent variables used in the analyses. *Tobin's Q* is book assets minus book value of equity and deferred taxes plus market value of equity, all divided by book assets where market value of equity is measured as common shares outstanding multiplied by the year-end price. *Industry-adjusted Tobin's Q* is natural log of *Tobin's Q* adjusted for annual industry median based on Campbell (1996) industry classifications. *CSRS* is CSR reporting quality provided by the CSR-S Monitor (Weissman Center for International Business, 2012). *ADRI* is the Anti-Director Rights index from La Porta et al. (1998). *RULE OF LAW* is the Rule of Law index from International Country Risk Guide. *HIPERF* is a dummy taking values 1 if CSR performance exceeds annual industry median CSR performance, and 0 otherwise. *SIN* takes values 1 for sin stocks such as alcohol (SIC 2100-2199), tobacco (SIC 2080-2085), and gaming (NAICS 7132, 71312, 713210, 71329, 713290, 72112, and 721120) companies and 0, otherwise (Hong & Kacperczyk, 2009). *INV OPP* is the geometric average of annual percentage growth in net sales in the past two years. *R&D* is research and development expenses scaled by sales. *SIZE* is the logarithm of sales. *ROE* is the 2-year average of income before extraordinary items divided by stockholders equity. *CAPEX*, measured by a firm's capital expenditures scaled by its book value of total assets. *LEVERAGE* is book debt over book assets. The sample covers the years 2009 and 2011 for which CSR reporting quality data are available.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Spearman Correlation Matrix

	Tobin's *Q*	Industry-Adj. Tobin's *Q*	*CSRS*	*ADRI*	*RULE OF LAW*	*HIPERF*	*SIN*	*INV OPP*	*R&D*	*SIZE*	*ROE*	*CAPEX*	*LEVERAGE*
Tobin's *Q*	1												
Industry-Adj. Tobin's *Q*	0.909***	1											
CSRS	-0.0691*	-0.0896**	1										
ADRI	-0.0435	-0.0143	-0.0147	1									
RULE OF LAW	-0.00355	0.00416	0.0855**	0.361***	1								
HIPERF	0.213***	0.238***	0.217***	-0.0944***	0.104***	1							
SIN	0.124***	0.0390	0.0244	0.0231	0.0546	-0.0892**	1						
INV OPP	0.176***	0.196***	0.0760**	0.0326	0.172***	0.109***	0.0709**	1					
R&D	0.172***	0.0450	0.151***	-0.115***	-0.00200	-0.0407	-0.0791**	-0.0601*	1				
SIZE	-0.207***	-0.202***	0.237***	0.105***	-0.157***	-0.160***	-0.00300	0.0483	0.164***	1			
ROE	0.603***	0.608***	0.0150	0.00537	0.0884**	0.223***	0.106***	0.420***	0.0336	-0.0556	1		
CAPEX	-0.00265	0.126***	0.0325	0.154***	-0.0181	0.0768**	-0.148***	0.134***	-0.264***	0.116***	0.0866**	1	
LEVERAGE	-0.151***	-0.116***	-0.0520	0.0278	-0.0433	-0.0643*	0.0241	-0.144***	-0.159***	-0.00544	-0.0504	0.0709**	1

This table reports the Spearman correlation coefficients among all dependent and independent variables used in the analyses. Variables are defined in Table 3. The sample covers the years 2009 and 2011 for which CSR reporting quality data are available.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Firm Value Regressions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Firm-Value Model									
CSRS	-0.0286	-0.0311	-0.0386	-0.0439	-0.0468	-0.0537	-0.215***	-0.218***	-0.220***
	(0.610)	(0.631)	(0.523)	(0.409)	(0.444)	(0.346)	(0.000)	(0.000)	(0.000)
CSRSxSIN				0.301***	0.325***	0.302***			
				(0.000)	(0.000)	(0.001)			
CSRSxHIPERF							0.204***	0.206***	0.199***
							(0.000)	(0.000)	(0.000)
HIPERF	0.0575***	0.0651***	0.0599***	0.0580***	0.0649***	0.0600***	0.0392***	0.0459***	0.0418***
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SIN	0.0690**	0.0704**	0.0694**	0.0195	0.0167	0.0196	0.0705**	0.0717**	0.0708**
	(0.022)	(0.034)	(0.023)	(0.488)	(0.566)	(0.504)	(0.018)	(0.029)	(0.019)
ADR	-0.0586	-0.0445	-0.0494	-0.0612	-0.0483	-0.0524	-0.0609	-0.0475	-0.0517
	(0.162)	(0.320)	(0.215)	(0.143)	(0.272)	(0.186)	(0.105)	(0.239)	(0.149)
INV OPP	0.130***	0.125***	0.133***	0.127***	0.121***	0.129***	0.131***	0.126***	0.134***
	(0.000)	(0.002)	(0.001)	(0.001)	(0.003)	(0.001)	(0.000)	(0.001)	(0.000)
R&D	0.833***	0.829***	0.835***	0.836***	0.832***	0.838***	0.840***	0.835***	0.842***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SIZE	-0.00603	-0.00339	-0.00431	-0.00558	-0.00316	-0.00397	-0.00341	-0.000965	-0.00180
	(0.282)	(0.595)	(0.473)	(0.328)	(0.618)	(0.513)	(0.552)	(0.877)	(0.766)
ROE	-0.000152	-0.000335	-0.000133	-0.000157	-0.000353	-0.000150	-0.0000304	-0.000233	-0.0000229
	(0.945)	(0.888)	(0.952)	(0.944)	(0.884)	(0.947)	(0.989)	(0.922)	(0.992)
CAPEX	0.398***	0.407***	0.412***	0.406***	0.415***	0.420***	0.401***	0.410***	0.415***
	(0.001)	(0.002)	(0.001)	(0.000)	(0.002)	(0.001)	(0.000)	(0.002)	(0.001)
LEVERAGE	-0.0425	-0.0446	-0.0440*	-0.0418	-0.0436	-0.0432	-0.0431	-0.0451	-0.0446*
	(0.107)	(0.110)	(0.099)	(0.107)	(0.111)	(0.100)	(0.101)	(0.105)	(0.094)
R&D DUMMY	-0.0394***	-0.0365*	-0.0355**	-0.0413**	-0.0388*	-0.0374**	-0.0376***	-0.0348*	-0.0336*
	(0.008)	(0.054)	(0.044)	(0.010)	(0.054)	(0.048)	(0.010)	(0.057)	(0.052)
ADRI	0.0313**			0.0307*			0.0317**		
	(0.046)			(0.051)			(0.041)		
RULE OF LAW		-0.00441			-0.00555			-0.00535	
		(0.857)			(0.815)			(0.818)	
COMPOSITE			0.00364			0.00347			0.00361
			(0.281)			(0.304)			(0.272)
Issue-Choice Model									
FIRMAGE	0.00880***	0.00864***	0.0101***	0.00880***	0.00868***	0.0101***	0.00876***	0.00864***	0.0100***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)	(0.004)	(0.005)	(0.004)	(0.004)
ASSETS	0.340***	0.317***	0.320***	0.342***	0.318***	0.321***	0.347***	0.323***	0.326***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
MANDATORY_REGUL	0.567**	0.0975	0.422	0.570**	0.0981	0.425	0.572**	0.103	0.429
	(0.045)	(0.713)	(0.106)	(0.044)	(0.711)	(0.105)	(0.042)	(0.696)	(0.101)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ρ	0.379	0.443	0.399	0.385	0.442	0.400	0.398	0.454	0.415
Wald χ^2	5.189***	5.245***	5.855***	5.948***	5.835***	6.508***	8.676***	7.661***	9.227***
No. of Countries	43	45	43	43	45	43	43	45	43

This table shows the regression results using the Heckman selection model (Heckman, 1979; Maddala, 1983). The Heckman model is estimated using the Full Information Maximum Likelihood Model (FIML). Firm value model in Equation 1 and issue-choice model in Equation 2 are jointly estimated to correct for selection bias. Firm value is measured by industry-adjusted Tobin's *Q*. *FIRMAGE* is age of a firm in a given year. *ASSETS* is book value of total assets of a firm. *MANDATORY_REGUL* is a dummy for the presence of mandatory CSR reporting regulations in a country (KPMG et al., 2013). *ADR* is a dummy that equals 1 if a firm is an ADR-listed firm, and O otherwise. *COMPOSITE* is *ADRI* multiplied by *RULE OF LAW*. For firms with missing R&D data, *R&D* is set to zero and an R&D dummy is created and set to 1. Other variables are defined in Table 3. The coefficients on *CSRS* and its interactions with *SIN* (*CSRSxSIN*) and *HIPERF* (*CSRSxHIPERF*) are multiplied by 100. The sample covers the years 2009 and 2011 for which CSR reporting quality data are available. Regressions include industry and year fixed effects and use heteroskedasticity-robust standard errors clustered by country. *p*-values are in parentheses. * $p<0.1$, ** $p<0.05$, *** $p<0.01$

Table 6: Regression Results Excluding Two High Size Industries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
CSRS	0.0636	0.0707	0.0557	0.0366	0.0429	0.0290	-0.0714	-0.0733	-0.0846
	(0.318)	(0.267)	(0.393)	(0.570)	(0.504)	(0.656)	(0.384)	(0.382)	(0.325)
CSRSxSIN				0.306***	0.327***	0.305***			
				(0.001)	(0.000)	(0.001)			
CSRSxHIPERF							0.132**	0.142**	0.138**
							(0.033)	(0.014)	(0.032)
HIPERF	0.0388***	0.0475**	0.0428***	0.0401***	0.0477**	0.0434***	0.0299***	0.0375**	0.0331***
	(0.006)	(0.020)	(0.005)	(0.004)	(0.015)	(0.004)	(0.006)	(0.030)	(0.006)
SIN	0.0603**	0.0618**	0.0611**	0.0105	0.00833	0.0113	0.0623**	0.0639**	0.0631**
	(0.036)	(0.049)	(0.036)	(0.711)	(0.771)	(0.700)	(0.034)	(0.045)	(0.034)
ADR	-0.0539	-0.0389	-0.0437	-0.0582*	-0.0448	-0.0485	-0.0529	-0.0381	-0.0430
	(0.117)	(0.319)	(0.177)	(0.088)	(0.229)	(0.129)	(0.108)	(0.307)	(0.165)
INV OPP	0.133***	0.137***	0.138***	0.127***	0.131***	0.132***	0.132***	0.137***	0.137***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R&D	0.867***	0.848***	0.869***	0.880***	0.859***	0.881***	0.864***	0.844***	0.866***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SIZE	-0.00291	-0.00121	-0.000960	-0.00243	-0.00102	-0.000622	-0.00173	0.0000162	0.000205
	(0.703)	(0.871)	(0.904)	(0.758)	(0.895)	(0.939)	(0.818)	(0.998)	(0.979)
ROE	-0.000478	-0.000658	-0.000478	-0.000488	-0.000687	-0.000503	-0.000405	-0.000580	-0.000403
	(0.847)	(0.807)	(0.849)	(0.846)	(0.803)	(0.845)	(0.870)	(0.830)	(0.873)
CAPEX	0.390***	0.399***	0.404***	0.398***	0.407***	0.412***	0.389***	0.398***	0.404***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LEVERAGE	-0.0627*	-0.0603*	-0.0635*	-0.0617*	-0.0591*	-0.0624*	-0.0649**	-0.0628*	-0.0658**
	(0.058)	(0.077)	(0.059)	(0.058)	(0.075)	(0.060)	(0.049)	(0.064)	(0.049)
R&D DUMMY	-0.0347***	-0.0346**	-0.0311**	-0.0377***	-0.0381**	-0.0342**	-0.0339***	-0.0335**	-0.0302**
	(0.009)	(0.013)	(0.035)	(0.007)	(0.010)	(0.031)	(0.010)	(0.015)	(0.038)
ADRI	0.0306**			0.0301**			0.0303**		
	(0.028)			(0.032)			(0.030)		
RULE OF LAW		-0.00858			-0.0101			-0.00789	
		(0.684)			(0.615)			(0.705)	
COMPOSITE			0.00327			0.00309			0.00329
			(0.223)			(0.252)			(0.219)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ρ	0.311	0.376	0.335	0.319	0.374	0.337	0.331	0.393	0.353
Wald χ^2	7.450***	8.544***	9.988***	9.271***	10.72***	11.80***	9.576***	10.48***	12.39***
No. of Countries	43	45	43	43	45	43	43	45	43

This table shows the firm value regression results for the reduced sample excluding two high-size industries: basic industries and consumer durables. The Heckman model (Heckman, 1979; Maddala, 1983) is used and estimated using the Full Information Maximum Likelihood Model (FIML). Firm value is measured by industry-adjusted Tobin's *Q*. *ADR* is a dummy that equals 1 if a firm is an ADR-listed firm, and O otherwise. *COMPOSITE* is *ADRI* multiplied by *RULE OF LAW*. For firms with missing R&D data, *R&D* is set to zero and an R&D dummy is created and set to 1. Other variables are defined in Table 3. The coefficients on *CSRS* and its interactions with *SIN* (*CSRSxSIN*) and *HIPERF* (*CSRSxHIPERF*) are multiplied by 100. The sample covers the years 2009 and 2011 for which CSR reporting quality data are available. Regressions include industry and year fixed effects and use heteroskedasticity-robust standard errors clustered by country. *p*-values are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Firm Value Regressions With Financial Performance Dummy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Firm-Value Model									
CSRS	-0.307***	-0.306***	-0.319***	-0.215***	-0.218***	-0.220***	-0.407***	-0.407***	-0.414***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CSRSxDROE	0.432***	0.428***	0.436***				0.421***	0.417***	0.426***
	(0.000)	(0.000)	(0.000)				(0.000)	(0.000)	(0.000)
CSRSxHIPERF				0.204***	0.206***	0.199***	0.117**	0.118**	0.111**
				(0.000)	(0.000)	(0.000)	(0.023)	(0.017)	(0.026)
HIPERF	0.0436***	0.0513***	0.0461***	0.0392***	0.0459***	0.0418***	0.0334***	0.0406***	0.0363***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SIN	0.0516**	0.0533**	0.0520**	0.0705**	0.0717**	0.0708**	0.0529**	0.0544**	0.0531**
	(0.033)	(0.043)	(0.032)	(0.018)	(0.029)	(0.019)	(0.027)	(0.036)	(0.027)
ADR	-0.0525	-0.0382	-0.0436	-0.0609	-0.0475	-0.0517	-0.0540*	-0.0401	-0.0451
	(0.106)	(0.249)	(0.149)	(0.105)	(0.239)	(0.149)	(0.075)	(0.197)	(0.111)
INV OPP	0.0980***	0.0942**	0.100***	0.131***	0.126***	0.134***	0.0994***	0.0955**	0.102***
	(0.008)	(0.022)	(0.009)	(0.000)	(0.001)	(0.000)	(0.005)	(0.018)	(0.007)
R&D	0.827***	0.824***	0.830***	0.840***	0.835***	0.842***	0.831***	0.827***	0.833***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SIZE	-0.00397	-0.00124	-0.00222	-0.00341	-0.000965	-0.00180	-0.00252	0.0000932	-0.000870
	(0.356)	(0.809)	(0.645)	(0.552)	(0.877)	(0.766)	(0.589)	(0.986)	(0.864)
ROE	-0.00178	-0.00191	-0.00175	-0.0000304	-0.000233	-0.0000229	-0.00167	-0.00182	-0.00165
	(0.496)	(0.495)	(0.503)	(0.989)	(0.922)	(0.992)	(0.521)	(0.516)	(0.527)
CAPEX	0.340***	0.351***	0.354***	0.401***	0.410***	0.415***	0.344***	0.354***	0.357***
	(0.000)	(0.001)	(0.001)	(0.000)	(0.002)	(0.001)	(0.000)	(0.001)	(0.001)
LEVERAGE	-0.0475*	-0.0495*	-0.0491*	-0.0431	-0.0451	-0.0446*	-0.0477*	-0.0497*	-0.0492*
	(0.069)	(0.071)	(0.063)	(0.101)	(0.105)	(0.094)	(0.068)	(0.070)	(0.062)
R&D DUMMY	-0.0362***	-0.0329**	-0.0323**	-0.0376***	-0.0348*	-0.0336*	-0.0352***	-0.0320**	-0.0313**
	(0.005)	(0.044)	(0.038)	(0.010)	(0.057)	(0.052)	(0.007)	(0.048)	(0.044)
ADRI	0.0299*			0.0317**			0.0301*		
	(0.054)			(0.041)			(0.050)		
RULE OF LAW		-0.00104			-0.00535			-0.00169	
		(0.961)			(0.818)			(0.935)	
COMPOSITE			0.00383			0.00361			0.00381
			(0.196)			(0.272)			(0.195)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ρ	0.330	0.399	0.355	0.398	0.454	0.415	0.343	0.406	0.365
Wald χ^2	7.451***	9.368***	9.836***	8.676***	7.661***	9.227***	10.52***	11.73***	13.06***
No. of Countries	43	45	43	43	45	43	43	45	43

This table shows the firm value regression results using the Heckman selection model (Heckman, 1979; Maddala, 1983). The Heckman model is estimated using the Full Information Maximum Likelihood Model (FIML). Firm value model in Equation 1 and issue-choice model in Equation 2 are jointly estimated to correct for selection bias. Firm value is measured by industry-adjusted Tobin's *Q*. *DROE* is a dummy taking values 1 if firm financial performance (*ROE*) exceeds industry median financial performance in a given year, and 0 otherwise. *ADR* is a dummy that equals 1 if a firm is an ADR-listed firm, and O otherwise. *COMPOSITE* is *ADRI* multiplied by *RULE OF LAW*. For firms with missing R&D data, *R&D* is set to zero and an R&D dummy is created and set to 1. Other variables are defined in Table 3. The coefficients on *CSRS* and its interactions with *DROE* (*CSRSxDROE*) and *HIPERF* (*CSRSxHIPERF*) are multiplied by 100. The sample covers the years 2009 and 2011 for which CSR reporting quality data are available. Regressions include industry and year fixed effects and use heteroskedasticity-robust standard errors clustered by country. *p*-values are in parentheses. * $p<0.1$, ** $p<0.05$, *** $p<0.01$

Table 8: Regression Results For The Year 2009

	(1) Law	(2) Enforce	(3) Composite	(4) Law	(5) Enforce	(6) Composite	(7) Law	(8) Enforce	(9) Composite	(10) Law	(11) Enforce	(12) Composite
CSRS	0.106**	0.129***	0.113***	0.00187	0.0254	0.0152	-0.198**	-0.169**	-0.188**	-0.141***	-0.115***	-0.128***
	(0.018)	(0.000)	(0.001)	(0.976)	(0.689)	(0.790)	(0.012)	(0.027)	(0.016)	(0.000)	(0.002)	(0.001)
CSRSxSIN	0.364***	0.341***	0.358***									
	(0.000)	(0.000)	(0.000)									
CSRSxHIPERF				0.119**	0.118**	0.113**				-0.0628	-0.0600	-0.0661
				(0.035)	(0.034)	(0.036)				(0.379)	(0.404)	(0.343)
CSRSxDROE							0.482***	0.470***	0.475***	0.493***	0.480***	0.486***
							(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
HIPERF	0.0578***	0.0604***	0.0607***	0.0493***	0.0519***	0.0526***	0.0411***	0.0451***	0.0442***	0.0453***	0.0492***	0.0487***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SIN	0.0189	0.0191	0.0172	0.0551	0.0530	0.0527	0.0418	0.0397	0.0396	0.0416	0.0396	0.0394
	(0.576)	(0.557)	(0.609)	(0.153)	(0.139)	(0.153)	(0.235)	(0.229)	(0.243)	(0.234)	(0.228)	(0.242)
ADR	-0.116**	-0.108**	-0.109**	-0.124***	-0.115***	-0.116***	-0.0713**	-0.0631*	-0.0652*	-0.0672*	-0.0591	-0.0608
	(0.013)	(0.017)	(0.013)	(0.004)	(0.006)	(0.005)	(0.047)	(0.098)	(0.075)	(0.065)	(0.130)	(0.107)
INV OPP	0.129***	0.144***	0.133***	0.133***	0.148***	0.138***	0.107***	0.121***	0.111***	0.106***	0.121***	0.110***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R&D	0.701***	0.686***	0.696***	0.710***	0.695***	0.704***	0.712***	0.696***	0.707***	0.708***	0.693***	0.703***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SIZE	-0.00432	-0.00361	-0.00261	-0.00312	-0.00245	-0.00145	-0.00204	-0.000864	-0.000272	-0.00262	-0.00140	-0.000881
	(0.340)	(0.432)	(0.619)	(0.464)	(0.580)	(0.774)	(0.628)	(0.845)	(0.956)	(0.527)	(0.761)	(0.860)
ROE	0.0192***	0.0188***	0.0191***	0.0190***	0.0186***	0.0190***	0.0138***	0.0136***	0.0139***	0.0139***	0.0136***	0.0139***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CAPEX	0.324***	0.310***	0.321***	0.318***	0.303***	0.315***	0.301***	0.288***	0.300***	0.300***	0.287***	0.298***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LEVERAGE	-0.113***	-0.112**	-0.116***	-0.116***	-0.115***	-0.119***	-0.111***	-0.111**	-0.114**	-0.111***	-0.111**	-0.114**
	(0.005)	(0.010)	(0.010)	(0.003)	(0.007)	(0.008)	(0.008)	(0.013)	(0.013)	(0.009)	(0.014)	(0.014)
R&D DUMMY	-0.0273***	-0.0276***	-0.0267***	-0.0230***	-0.0235**	-0.0224**	-0.0225***	-0.0228***	-0.0219***	-0.0230***	-0.0233***	-0.0224***
	(0.002)	(0.006)	(0.006)	(0.005)	(0.012)	(0.012)	(0.003)	(0.009)	(0.007)	(0.002)	(0.008)	(0.005)
ADRI	0.0156			0.0158			0.0188			0.0187		
	(0.507)			(0.505)			(0.438)			(0.441)		
RULE OF LAW		-0.0474**			-0.0488**			-0.0436**			-0.0433*	
		(0.037)			(0.029)			(0.049)			(0.053)	
COMPOSITE			-0.000669			-0.000734			-0.0000931			-0.0000874
			(0.835)			(0.816)			(0.978)			(0.979)
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ρ	0.426	0.450	0.455	0.419	0.442	0.449	0.390	0.428	0.421	0.391	0.430	0.424
Wald χ^2	5.519***	4.447***	5.300***	5.765***	4.651***	5.370***	5.950***	5.050***	5.704 ***	5.706***	4.923***	5.526***
No. of Countries	19	19	19	19	19	19	19	19	19	19	19	19

This table shows the firm value regression results for the year 2009 using the Heckman selection model (Heckman, 1979; Maddala, 1983). The Heckman model is estimated using the Full Information Maximum Likelihood Model (FIML). Firm value is measured by industry-adjusted Tobin's *Q*. *DROE* is a dummy taking values 1 if firm financial performance (*ROE*) exceeds industry median financial performance in a given year, and 0 otherwise. *ADR* is a dummy that equals 1 if a firm is an ADR-listed firm, and O otherwise. *COMPOSITE* is *ADRI* multiplied by *RULE OF LAW*. For firms with missing R&D data, *R&D* is set to zero and an R&D dummy is created and set to 1. Other variables are defined in Table 3. The coefficients on *CSRS* and its interactions with *SIN* (*CSRSxSIN*), *HIPERF* (*CSRSxHIPERF*), and *DROE* (*CSRSxDROE*) are multiplied by 100. Regressions include industry fixed effects and use heteroskedasticity-robust standard errors clustered by country. *p*-values are in parentheses. * $p<0.1$, ** $p<0.05$, *** $p<0.01$

Table 9: Regression Results For The Year 2011

	(1) Law	(2) Enforce	(3) Composite	(4) Law	(5) Enforce	(6) Composite	(7) Law	(8) Enforce	(9) Composite	(10) Law	(11) Enforce	(12) Composite
CSRS	-0.0997	-0.0983	-0.112**	-0.254***	-0.296***	-0.294***	-0.343***	-0.343***	-0.351***	-0.430***	-0.471***	-0.474***
	(0.122)	(0.120)	(0.041)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CSRSxSIN	0.231*	0.284**	0.279**									
	(0.077)	(0.038)	(0.029)									
CSRSxHIPERF				0.191**	0.232***	0.224***				0.107	0.167**	0.159**
				(0.011)	(0.001)	(0.001)				(0.210)	(0.013)	(0.018)
CSRSxDROE							0.410***	0.414***	0.417***	0.400***	0.379***	0.387***
							(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
HIPERF	-0.0610**	-0.0542**	0.0765***	-0.0835***	0.0646***	0.0533***	-0.0675***	-0.0609**	-0.0624***	-0.0797***	0.0552***	0.0443***
	(0.012)	(0.045)	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.014)	(0.006)	(0.000)	(0.000)	(0.000)
SIN	-0.0151	-0.0232	0.0302	0.0328	0.0971***	0.0892***	0.0159	0.0182	0.0195	0.0171	0.0775**	0.0697**
	(0.738)	(0.640)	(0.497)	(0.373)	(0.002)	(0.002)	(0.643)	(0.655)	(0.597)	(0.610)	(0.010)	(0.017)
ADR	-0.151***	-0.151***	-0.0253	-0.151***	-0.00815	-0.0226	-0.144***	-0.142***	-0.131***	-0.146***	-0.0136	-0.0276
	(0.000)	(0.000)	(0.568)	(0.000)	(0.835)	(0.568)	(0.000)	(0.000)	(0.000)	(0.000)	(0.679)	(0.404)
INV OPP	0.189***	0.166***	0.178***	0.190***	0.161**	0.177***	0.146***	0.129***	0.159***	0.147***	0.122*	0.135**
	(0.000)	(0.001)	(0.004)	(0.000)	(0.017)	(0.003)	(0.001)	(0.009)	(0.000)	(0.001)	(0.082)	(0.028)
R&D	0.751***	0.726***	1.047***	0.741***	1.061***	1.043***	0.738***	0.713***	0.724***	0.737***	1.033***	1.016***
	(0.002)	(0.003)	(0.000)	(0.002)	(0.000)	(0.000)	(0.002)	(0.003)	(0.002)	(0.002)	(0.000)	(0.000)
SIZE	-0.0328***	-0.0344***	-0.000916	-0.0310***	0.00494	0.00192	-0.0299***	-0.0313***	-0.0283***	-0.0287***	0.00470	0.00183
	(0.002)	(0.000)	(0.905)	(0.002)	(0.510)	(0.802)	(0.002)	(0.001)	(0.003)	(0.004)	(0.487)	(0.785)
ROE	-0.00333**	-0.00403**	-0.00172	-0.00313**	-0.00169	-0.00145	-0.00453**	-0.00518**	-0.00490**	-0.00439**	-0.00297	-0.00277
	(0.017)	(0.039)	(0.463)	(0.021)	(0.537)	(0.536)	(0.019)	(0.038)	(0.033)	(0.018)	(0.345)	(0.317)
CAPEX	0.439*	0.390*	0.602**	0.431*	0.615**	0.598**	0.319	0.273	0.336	0.321	0.497**	0.479**
	(0.065)	(0.089)	(0.010)	(0.069)	(0.011)	(0.010)	(0.110)	(0.146)	(0.123)	(0.110)	(0.016)	(0.016)
LEVERAGE	-0.0138	-0.0128	0.0335	-0.0145	0.0354	0.0336	-0.0272	-0.0255	-0.0251	-0.0275	0.0196	0.0170
	(0.753)	(0.752)	(0.391)	(0.745)	(0.419)	(0.404)	(0.567)	(0.564)	(0.577)	(0.570)	(0.604)	(0.625)
R&D DUMMY	-0.0541**	-0.0653***	-0.0412	-0.0517**	-0.0339	-0.0380	-0.0489**	-0.0586***	-0.0430	-0.0481**	-0.0316	-0.0353
	(0.030)	(0.005)	(0.132)	(0.029)	(0.226)	(0.135)	(0.037)	(0.006)	(0.102)	(0.041)	(0.236)	(0.153)
ADRI	0.0374			0.0383			0.0351			0.0355		
	(0.170)			(0.159)			(0.201)			(0.198)		
RULE OF LAW		-0.0641***			0.0185			-0.0576***			0.0176	
		(0.004)			(0.465)			(0.004)			(0.458)	
COMPOSITE			0.00675*			0.00696**			-0.00141			0.00652**
			(0.059)			(0.041)			(0.730)			(0.032)
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ρ	-0.818	-0.822	0.506	-0.822	0.615	0.531	-0.830	-0.833	-0.829	-0.830	0.548	0.459
Wald χ^2	211.6***	195.5***	9.577***	193.6***	35.36***	15.31***	269.9***	234.4***	240.3***	255.3***	31.61***	13.10***
No. of Countries	43	45	43	43	45	43	43	45	43	43	45	43

This table shows the firm value regression results for the year 2011 using the Heckman selection model (Heckman, 1979; Maddala, 1983). The Heckman model is estimated using the Full Information Maximum Likelihood Model (FIML). Firm value is measured by industry-adjusted Tobin's *Q*. *DROE* is a dummy taking values 1 if firm financial performance (*ROE*) exceeds industry median financial performance in a given year, and 0 otherwise. *ADR* is a dummy that equals 1 if a firm is an ADR-listed firm, and O otherwise. *COMPOSITE* is *ADRI* multiplied by *RULE OF LAW*. For firms with missing R&D data, *R&D* is set to zero and an R&D dummy is created and set to 1. Other variables are defined in Table 3. The coefficients on *CSRS* and its interactions with *SIN* (*CSRSxSIN*), *HIPERF* (*CSRSxHIPERF*), and *DROE* (*CSRSxDROE*) are multiplied by 100. Regressions include industry fixed effects and use heteroskedasticity-robust standard errors clustered by country. *p*-values are in parentheses. * $p<0.1$, ** $p<0.05$, *** $p<0.01$

Firm Value, Legal Environment, and Corporate Social Responsibility Disclosure Regulations

Corporate Social Responsibility (CSR) reporting has become commonplace across the world. A survey of the largest 100 firms in 41 countries found that 71% of these firms issued CSR reports in 2013 (KPMG et al., 2013). CSR reports typically provide nonfinancial information and exhibit large variation in disclosure quality because they are not subject to nearly as strict standards as financial reports. To ensure adequate disclosure quality, consumer groups, trade unions, and socially responsible investors have called for introducing CSR reporting regulations. They expect CSR reporting regulation to increase firm value by inducing more transparency and managerial accountability that will improve a firm's standing with its stakeholders who influence the success (or failure) of firms on different fronts. Firms and industry groups, on the other hand, favor keeping CSR disclosures voluntary. They contend that unlike the one-size-fits-all approach of disclosure regulations, voluntary disclosure can be tailored to the specific needs of firms, allowing firms to maintain a level of transparency that improves firm value (KPMG & United Nations Environment Programme, 2006). To shed light on this debate, I examine whether CSR disclosures made under regulations benefit firm value when considered in connection with the resulting CSR transparency.

Opponents of regulating CSR disclosures posit that if disclosures benefit a firm, then the firm would make those disclosures voluntarily anyway (e.g., Ross, 1979). Disclosure regulations diminish a firm's discretion, which may sometimes call for choosing less transparency to protect firm value. Considering also the costs of compliance, firm value may decline with regulated disclosure. These views against disclosure regulations rest on voluntary disclosures always being truthful–an assumption that is unrealistic unless there is a strong legal system that deters misleading disclosures. Otherwise, voluntary disclosures may not have the hypothesized credibility. Even if a firm truthfully discloses its CSR performance, other less CSR conscientious firms may make similar disclosures without much fear of punishment thereby reducing the credibility of the truthful firm as well.

I hypothesize that weaker legal systems favor regulating CSR disclosures, which typically entail firms to comply with a set of rules. The presence of rules reduces uncertainty for courts in deciding whether a firm is in compliance with regulations making it easier for stakeholders to initiate litigation (Shleifer, 2005). In fact, rules reduce the discretion

courts can exercise in deciding a case, allowing potential litigants to partly circumvent the weaknesses embedded in the judicial system (Hay & Shleifer, 1998). By facilitating legal enforcement in this way, disclosure regulations provide better incentives for managers to avoid issuing misleading CSR reports when such incentives are most needed.

In contrast, strong legal systems already foster credible disclosures. As agency problems are also less pronounced in such systems (Shleifer & Wolfenzon, 2002), managers are more likely to make disclosure choices that protect firm value. Introducing regulations limits those choices, at least partly disallowing firms to exploit managerial acumen in choosing disclosure quality. I thus expect a negative relation between average firm value and CSR disclosure regulations considered in connection with the disclosure quality they entail in strong legal systems.

To test these hypotheses, I calculate a legal score for each country as the product of a de jure investor protection index and an enforcement index. I divide my sample into countries with strong and weak legal systems using the median legal score as the cutoff. I also identify the countries with CSR disclosure regulations in place from Carrots and Sticks 2013 (KPMG et al., 2013) and Global CSR Disclosure report of Initiative for Responsible Investment at Harvard Kennedy School (Initiative for Responsible Investment [IRI], 2015). I use a composite scoring system to calculate a CSR disclosure quality index for each CSR report issued by firms as explained in the methodology section.

The results largely corroborate my hypotheses. In countries with weak legal systems, firm value increases with CSR disclosure quality only when there is regulation. This result is consistent with disclosure regulation compensating some of the deficiency in a legal system to make CSR transparency matter for firm value in a positive way. In stark contrast, in countries with strong legal systems firm value decreases with CSR disclosure quality when there is regulation. In a strong legal system, regulation induced transparency seems on average to impair firm value. Without disclosure regulations, a firm could choose a judicious level of transparency that suits its unique circumstances vis-à-vis its customers, competitors, employees, investors, and stakeholders in general. Imposing disclosure regulations can frustrate such efforts in a strong legal environment.

My results also show that when there is no regulation, CSR disclosure quality is statistically significant and positive in explaining firm value in strong legal systems, and is insignificant in weak legal systems. Hence, I provide evidence that CSR disclosure regulation along with legal system strength does matter for the sign of the impact of CSR transparency on firm value. While improving average firm value may not be the sole objective of a governing body, this

evidence provides guidance on the potential consequences of regulating CSR disclosures for public firms operating in different legal environments.

The implications of this paper extend to several areas. Whether there is need for disclosure regulation has been debated since the enactment of Securities Act of 1933 and Securities Exchange Act of 1934. To inform the debate, researchers extensively studied economic consequences of mandatory financial reports (e.g., Coffee Jr, 1984; Easterbrook & Fischel, 1984). As some countries have already adopted CSR disclosure regulations while others have not, a cross-country examination of regulated versus voluntary CSR reports offers a unique context to study the merits of disclosure regulation, if any. While this is an inquiry of scholarly importance, its results also have practical implications. Regulators across the world consider making CSR disclosures mandatory. For example, the EU issued an amended directive in December 2014 asking member states to transpose mandatory CSR reporting into law in two years. Public interest entities with more than 500 employees are expected to start issuing CSR reports in 2018 covering the fiscal year 2017-2018. My results imply that this law may improve CSR transparency at the expense of firm value in countries with stronger legal systems but may benefit firm value in countries with weaker legal systems. One-size-fits-all type regulation may do more harm than good in some settings.

Recent studies on disclosure regulation have focused on country-level IFRS adoptions for financial reporting. These studies find that IFRS, which is considered an enhanced reporting system compared to local GAAP, benefit primarily firms in countries with strong legal institutions (Daske et al., 2008) and those that make concurrent changes to their legal enforcement regimes (Christensen, Hail, & Leuz, 2013). These studies compare reporting before and after IFRS and conclude that improvements in financial reporting standards benefit firms if the legal and institutional infrastructure is strong enough to support their implementation. By contrast, I study nonfinancial disclosure regulations under which firm value benefits from CSR reporting transparency only in weaker legal environments—a result that is consistent with Hay and Shleifer (1998). My study, however, is cross-sectional covering years 2009, 2011, and 2012 (for which I have CSR disclosure quality data) and comparing the firms in countries with and without CSR disclosure regulations during these years.

The papers that are most related to mine are Bruno and Claessens (2010), Ioannou and Serafeim (2014), Matsumura et al. (2014), and Dhaliwal et al. (2011). Bruno and Claessens (2010) find that better governance practices

and transparency benefit (impair) firm performance in countries with weaker (stronger) legal systems. Their contention is that a strong legal regime engenders excessive monitoring of firms (i.e., beyond an optimal level) to harm managerial initiatives that foster operational efficiency. These results are consistent with mine demonstrating that imposing on firms to provide more transparency may be excessive in a strong legal system. Ioannou and Serafeim (2014) examine how mandating CSR disclosures affects firm value, CSR disclosure frequency, and propensities to obtain disclosure assurance and adopt reporting guidelines in four countries that include China, Denmark, Malaysia, and South Africa. While theirs is an event-study over 4 countries, mine is a cross-sectional study covering 46 countries, which allows me to compare regulated and non-regulated disclosure regimes. Matsumura et al. (2014) use a sample of U.S. firms to examine the firm value impact of the act of voluntarily disclosing carbon emissions, which can be considered as part of CSR reports. Dhaliwal et al. (2011) use the act of disclosing a CSR report as a binary variable to examine its impact on cost of capital for U.S. firms. My study, on the other hand, uses a disclosure quality score on CSR reports to distinguish more or less transparent disclosing firms. These data allow me to infer the firm value impact of more transparency under different disclosure and legal regimes also taking advantage of the multi-country data.

Background and Hypotheses Development

Corporate Social Responsibility (CSR) reports typically disclose a firm's environmental, social, and governance (ESG) activities and performance. Examples of information reported in CSR reports include a firm's energy efficiency, environmental impact, product safety initiatives, social projects undertaken in localities the firm has a presence, workforce diversity, labor practices including those of overseas suppliers, and governance measures implemented to prevent potential agency problems. As most of the information is nonfinancial in nature, CSR reports provide a view of operations of firms that is largely missing from financial reports. Stakeholders, whose welfare in part depends on the firm's stance on ESG, value CSR information particularly highly. As stakeholder activism initiated by customers, employees, and community can influence a firm's success or failure, their positive actions constitute opportunities for firms and adverse actions constitute potential risks. Providing high quality CSR information to keep stakeholders informed has become paramount for firms aiming to stay in good terms with them. Other prominent users of CSR information include investors aiming to limit their holdings to socially responsible firms as well as those interested in

knowing the risks and opportunities facing their potential investment targets (Dhaliwal et al., 2012). To illustrate the investor appetite for CSR information, a report prepared by Ernst & Young has revealed that 46% of all shareholder proposals submitted in 2014 and 52% of all shareholder proposals submitted by April 2015 concerned environmental and social issues facing firms (Ernst & Young, 2015).

Given the importance placed on CSR information, firms aiming to reduce information asymmetry can issue CSR reports. The quality of CSR reports determines the firm's level of transparency to its stakeholders. In addition to fostering better stakeholder relations, more transparency offers investors a level playing field vis-à-vis the firm and better-informed large investors thereby reducing the need for regular investors to discount the firm's stock to protect themselves (Diamond, 1985). Moreover, transparency allows investors to better assess the covariance of the firm's stock with other stocks, reducing investors' information risk and the firm's cost of capital (Lambert et al., 2007). Better knowledge of the firm's CSR agenda allows the firm to additionally tap into socially responsible investors. Dealing with agency problems also becomes easier with transparency especially because managers or controlling shareholders are accountable for preventing CSR risks that threaten sustainability and longevity of firms. More transparency allows better monitoring of CSR efforts, encouraging managers to reduce CSR risks and tap CSR opportunities rivals miss. These benefits of transparency contribute to improving firm value.

CSR transparency is not without costs. CSR information mostly concerns operational activities. There are direct costs such as collecting the information, preparing the report and disseminating it in addition to indirect costs such as revealing strategically sensitive information to competitors, unions, and regulators who may use the information to take advantage of the firm (Özbilgin & Penno, 2005). More disclosure can also increase costs of compensating managers because additional disclosures increase managerial risk for reporting less than favorable results causing risk-averse managers to demand more pay (Hermalin & Weisbach, 2012). Additionally, more disclosure increases a firm's exposure to litigation risk, textitceteris paribus, by increasing the likelihood of errors of omission or commission (Enriques & Gilotta, 2014). If the aggregate impact of these costs falls below (exceeds) that of the benefits, firm value will increase (decrease) with higher quality CSR disclosures. Whether costs of higher quality CSR disclosures dominate their benefits appears to be an empirical question.

Firms reveal CSR information voluntarily, if their managers expect such information to benefit themselves.

For example, if a firm's production process pollutes the environment, its labor practices are harsh on workers, or its products lack the requisite level of safety or quality, displaying such information in a CSR report would not suit managers. Instead of remedying these problems, managers may find it easier to conceal such information and issue reports that paint a misleading picture about important aspects of CSR. Agency problems make it difficult to induce managers to voluntarily issue CSR reports that cover the full range of a firm's CSR issues. Instead, managers may disclose information "green-washing" the firm's CSR efforts if any and selectively releasing information that casts those efforts in the best light. For outsiders, such practices reduce credibility of CSR disclosures of not just the firms overstating their CSR but also those of the firms that have a genuine CSR agenda. Unless a strong legal system exists, it is difficult to discern cunning firms from truthful ones among voluntary disclosers. One way for firms invested in CSR to stand out is to engage in signaling which involves significant costs (Enriques & Gilotta, 2014). Competitive and reputational forces are usually slow and ineffective in eliciting truthful disclosures (Shleifer, 2005). Depending on its strength, legal system is usually the most effective conduit in preventing misleading voluntary disclosures (Djankov, La Porta, Lopez-De-Silanes, & Shleifer, 2008). Usually giving top priority to minority shareholder protection, a strong legal system designs and enforces strict laws emphasizing corporate transparency. As such, a strong legal system backs voluntary disclosures that are truthful in order to monitor proper use of investor funds. A firm whose best interests call for volunteering information on its successful CSR program can do so credibly as potential mimickers are deterred by the legal system. With the benefit of curtailed agency problems in strong legal systems, the firm can choose a judicious level of CSR transparency that balances the costs and benefits. Imposing CSR reporting regulations strips firms off this choice, more likely leading to too much transparency. I thus expect firm value to decrease with CSR disclosure quality when there is CSR reporting regulation in a stronger legal system.

HYPOTHESIS 1: *In countries with stronger legal systems, higher quality CSR reporting results in lower firm value when CSR reporting is regulated.*

In weaker legal systems, however, ensuring disclosure credibility is problematic. Regulating CSR disclosures entails that disclosures conform to a set of rules or principles. Presence of rules makes it easier for potential plaintiffs to

establish that a firm is not in compliance, in part reducing judicial discretion in decision making (Hay & Shleifer, 1998). Furthermore, imposing disclosure regulations acts as a low cost commitment device for continued periodic disclosures that private contracting may not achieve in a weak legal system (Leuz & Wysocki, 2008). More efficient commitment to issue periodic CSR reports allows a firm to appease investor and stakeholder fears that the firm may stop disclosing after entering into a contract with them. A firm gaining the ability to enter into contracts with less cost experiences benefits ranging from raising less costly capital and hiring more talented employees to having better public relations and expanding its customer base. Hence, I predict firm value to increase with CSR reporting quality when there is CSR reporting regulation in effect in a country with a weaker legal system.

HYPOTHESIS 2: *In countries with weaker legal systems, higher quality CSR reporting results in higher firm value when CSR reporting is regulated.*

One can argue that even in stronger legal systems agency problems remain unsolved, and managers may not have sufficient incentives to be so forthcoming as to voluntarily and truthfully disclose CSR information. Disclosure regulations backed by strong legal enforcement may be necessary for eliciting a healthy amount of transparency from firms to control agency problems and improve firm value. This argument predicts a positive impact for CSR disclosure quality to have on firm value when there is regulation and a strong legal system in a country. Such an argument views disclosure regulation as a futile effort in weak legal systems lacking sufficient enforcement. This argument, generally favored in the disclosure regulation literature (Leuz & Wysocki, 2016), goes against my hypotheses, and resolving the differences is largely an empirical matter which I take up in this paper.

Methodology

Regression Specification

I test these hypotheses by regressing firm value proxied by the market value of common equity on measures of CSR disclosure quality (*CSRS*), CSR reporting regime (*REGULATION*) where *REGULATION*=1 if there is CSR disclosure regulation and *REGULATION*=0 if CSR disclosure is not regulated, interaction of these two

(*CSRS*REGULATION*), and a set of firm and country level controls, Z, along with industry, d, and year dummies, y :

$$VALUE^{c}_{j,t} = \alpha + \beta_1 * CSRS^{c}_{j,t} + \beta_2 * REGULATION_c + \beta_3 * (CSRS^{c}_{j,t} * REGULATION_c) + \sum_{k=1}^{K} \delta_k * Z^{c}_{k,j,t-1} + \sum_{t=1}^{T-1} y_t + \sum_{i=1}^{I-1} d_i + \epsilon^{c}_{j,t} \quad (3)$$

VALUE is measured by the natural logarithm of the market value of common equity (*MKVAL*) calculated as common shares outstanding multiplied by the year-end price; *CSRS*, CSR reporting quality score; *REGULATION*, a dummy for the presence of mandatory CSR reporting regulations in a country (KPMG et al., 2013); *CSRS*REGULATION* measure the interaction of CSR reporting quality score with regulation dummy; Z, firm- and country-level control variables; y, year dummy; d, industry dummy; c, country; i, industry; j, firm; t, year; K, the number of control variables; T, the number of years, and I, the number of industries; α, a constant. Robust standard errors are estimated using the Huber/White/Sandwich estimation procedure.

I partition the sample into two groups based on whether a company operates in a country with strong or weak legal regime. This partition allows me to examine the hypothesized differential impact of disclosure regulations across legal regimes. I classified the countries into strong and weak legal system groups using the median value of the product of the revised Anti-Director Rights index of Djankov et al. (2008) and the Rule of Law index provided by the International Country Risk Guide (ICRG) through Lexis-Nexis.[24] I then estimate Equation 3 separately for these two subsamples to better capture variations in the key variables across strong and weak legal regimes.

Data

The CSR-Sustainability (CSR-S) monitor. I use the data provided by the CSR-S Monitor (Weissman Center for International Business, 2014) for CSR disclosure quality. The CSR-S Monitor provides an assessment of the quality of CSR reports published by companies worldwide. These companies are selected based on large size and their presence

[24] http://w3.nexis.com/sources/scripts/info.pl?10896

on multiple global indices. This generated an initial sample of 2524 company-years from 24 industries and 46 countries in the years 2009, 2011, and 2012. Out of this initial universe of companies, a company is included in the CSR-S Monitor if the company either issued a stand-alone CSR report or included a sizeable CSR reporting segment as part of its annual report.

The CSR-S Monitor assesses nonfinancial reporting quality based on 11 key CSR performance attributes including environment and sustainability, corporate governance, bribery and corruption, and integrity assurance that are identified as the most relevant areas in corporate social responsibility (see the Appendix for details). The CSR-S Monitor analyzes the content of a CSR report for each attribute based on comprehensiveness, specificity of detail, quality, and reporting accuracy. As such, each category is scored with respect to (1) the acknowledgment of problems related to the particular attribute, (2) the material and specific activities undertaken to address these problems, (3) the publication of measurable results, and (4) whether independent verification and assurance of these results were included in the report. The scores on these categories are then weighted to provide a total score ranging from 0 to 100, where a higher score indicates higher quality of report.

What makes the CSR-S Monitor unique as compared to other CSR scoring frameworks is that it integrates independent third-party assurance to the scoring process, a section that is not present in other CSR scoring frameworks (Sethi et al., 2015a, 2015b). In the data, assurance measures the degree to which third party validation was part of the report. Unlike financial reporting, lack of standardization in sustainability reporting raises concerns about the reliability of these reports. Thus, providing an independent assurance of a CSR report partly allays these concerns.

There is considerable research on the relationship between corporate social performance (CSP) and financial performance (CFP). Despite the overall positive yet small relationship documented by Margolis et al. (2007), I included the CSR performance variable in the regressions to avoid a possible missing variable bias. I use the CSR performance scores provided by Thomson Reuters ASSET4 ESG database (Thomson Reuters ASSET4 ESG, 2002-2012).[25] ASSET4 ESG database provides annual CSR performance information for about 3400 listed companies worldwide. Its measure reflects CSR performance of companies in eighteen subcategories of the four main aspects of CSR: environmental, social, corporate governance, and economic. The scores on each of these eighteen categories range between 0 and 1,

[25] http://im.thomsonreuters.com/solutions/content/asset4-esg/

with high scores indicating strong performance in a given category. These scores on each sub-category are then added to create an equally-weighted aggregate CSR performance score ranging from 0 to 100.

The data on CSR reporting regime is provided in KPMG et al. (2013) and Global CSR Disclosure report of Initiative for Responsible Investment at Harvard Kennedy School (Initiative for Responsible Investment [IRI], 2015). The countries that have CSR disclosure regulations in place during the sample period are Denmark, Finland, France, Germany, India, Indonesia, Italy, Malaysia, Netherlands, Norway, Pakistan, South Africa, Spain, Sweden, and the UK. The dummy variable *REGULATION* equals one if a country has CSR reporting regulations in effect and equals zero otherwise.

Firm variables. The dependent variable, *Value*, is measured by the natural logarithm of the market value of common equity (*MKVAL*) calculated as common shares outstanding multiplied by the year-end price. I exclude firms with missing financial data from the sample.

Increasing social awareness among investors in the last two decades has shaped economic and social behavior in capital markets. Accordingly, investors have started applying varying levels of "social screening", which is the process of selecting companies to invest in based on social and environmental performance in addition to a company's financial performance. The most common type of social screening is to avoid alcohol, tobacco, or gambling industries, which are defined as "sin industries". The products offered by these firms are against common societal norms or harmful to the environment, which can have implications on their valuations. Following Hong and Kacperczyk (2009), I identify three groups of such stocks and create the variable *SIN*, which takes value 1 for sin stocks such as alcohol (SIC 2100-2199), tobacco (SIC 2080-2085), and gaming (NAICS 7132, 71312, 713210, 71329, 713290, 72112, and 721120) companies and 0, otherwise.

Research and development intensity (R&D) emerged as a major factor in CSR research (Padgett & Galan, 2010). The measure for research and development intensity (*R&D*) is research and development expenses scaled by lagged sales. However, not all firms report R&D expenditures in their financial statements. When missing, *R&D* is set to zero and following Himmelberg et al. (1999), an R&D dummy, *R&DDUMMY*, is created and set to 1. This is to eliminate the possibility of any bias toward technology-oriented firms.

I defined firm size, *SIZE*, as the logarithm of sales. This choice is motivated by the nature of the cross-country data and to mitigate possible problems due to different accounting practices across countries in calculating other firm size proxies such as total assets. As robustness check, I tried the logarithm of the number of employees and assets to proxy for size. With these proxies I obtained estimates that were consistent with the initial results.

I used firm return on assets, *ROA*, for profitability. For robustness, I also tried return on equity that gave similar results. To eliminate a potential omitted variable bias at the country level, I included the natural logarithm of the per-capita Gross Domestic Product (GDP), *GDP*, in the regressions. I used a proxy for the level of financial constraints, *LEVERAGE*, measured by the ratio of total liabilities to total assets. There is still debate about whether (and how) leverage affects firm value (Fama & French, 1998). Hence, it is difficult to have any priors on the direction of its impact. As it is not a variable of interest in the current setup, I just included leverage as a control variable.

Industry dummies (d_i) are added based on a company's primary two-digit SIC code. These dummies account for differences in accounting practices, business structure, industry-specific performance, and regulations across industries. Year dummies are included to control for year specific factors in the data. I use lagged values for each of the control variables to circumvent endogeneity problems. Private companies, family-owned, and state-owned enterprises are excluded as they are not required to issue financial reports to the public. Financial firms (two-digit SIC code 60-69) are excluded due to their fundamentally different business models.

Results

Descriptive Statistics

Table 10 shows the number of firm-years in each country that issue or do not issue CSR reports. CSR disclosure regulations allow companies that satisfy certain criteria–such as size as measured by sales revenue or number of employees–the option to "report or explain". That is, firms with legitimate reasons to not reveal their CSR activities are asked to provide a satisfactory explanation for not issuing a CSR report. As such, there are firms that do not report even in countries with CSR disclosure regulations. As Table 10 shows, although CSR disclosures are not regulated in Japan, a majority of firms issue formal CSR reports, demonstrating the power of markets and reputation for well-known

firms to voluntarily share CSR information. A similar case can be made for Canada and the USA. It is interesting to note that although CSR regulations are present in India and Malaysia, the percentage of firms issuing CSR reports is very low (0% for Malaysia) implying that firms used their option to explain why they do not report their CSR activities.

[Table 10 about here.]

Table 11 provides the breakdown of reporting and non-reporting firms by industry. Basic Industry, Other Industries, and Transportation are the industries with the highest percentage of firms issuing CSR reports. Services, Textile and Trade, and Consumer Durables are the industries with the lowest percentage of firms issuing CSR reports.

[Table 11 about here.]

Table 12 provides the summary statistics for the dependent and independent variables for the full sample in Panel A. The mean and median *MKVAL* for the sample are 21,297.40 and 8,642.03, respectively. My measure of CSR disclosure quality, *CSRS*, ranges from 0 to 100 by design, and the mean *CSRS* value is 37.97, while the median *CSRS* value is 37.00, for the firms that issued CSR reports. 20% of the firm-year observations are subject to CSR disclosure regulation. 3% of the firm-year observations are from sin industries. Average and median profitability (*ROA*) for my sample of firms are 13% and 12%, respectively.

[Table 12 about here.]

Panel B of Table 12 provides the breakdown of the descriptive statistics by whether firm-year observations are subject to CSR disclosure regulation. Firms that are subject to disclosure regulation on average issue higher quality CSR reports than those that are not subject to disclosure regulation while also exhibiting higher CSR performance. Average and median market values for regulation firms are more than those of no regulation firms. Panel C shows the breakdown of the sample based on legal system strength. Average and median market values are similar in these legal systems. However, mean CSR disclosure quality is lower in strong legal systems than in weak legal systems. Moreover, CSR disclosure regulation is more prevalent in weak legal systems (42%) than in strong legal systems (17%), indicating an effort by countries with weak legal systems to introduce structure into CSR reports to mitigate inadequate legal support for credible disclosures. In weak legal systems, CSR performance is also significantly better on average. The

significance tests also show that the mean and median values of the variables are largely different between the two groups with the exception of *MKVAL*, *CSR_DUMMY*, *ROA*, and *SIN*. Interestingly, however, mean value of *CSRS* is greater in weak legal environments, implying a greater need for firms operating in weak legal environment to provide more transparency. Another interesting statistic is the difference in the pervasiveness of CSR disclosure regulations between these samples. In strong legal environments, only 17% of firms face CSR disclosure regulations, while in weak legal environments, 42% of firms face them. Regulation has a more important role to play in a weak legal environment, where there is more need for structure in disclosures to partly make up for the deficiency in the legal system. As such, regulation is more pervasive in weak legal environments, consistent with my hypotheses.

[Table 13 about here.]

Table 13 provides the correlation matrix for the dependent and independent variables. My independent variable of interest, *CSRS*, has a significantly positive correlation with market value. *CSRS* has also a significantly positive correlation with *REGULATION*, *CSRPERF*, and *SIZE*, and a negative correlation with *GDP* for both Pearson and Spearman rank correlations. The positive *CSRS-REGULATION* correlation confirms the descriptive statistics in Panel B of Table 12 that *REGULATION* is associated with higher CSR disclosure quality. That *CSRS* has a positive correlation with *CSRPERF* is intuitive and is consistent with the result in Titman and Trueman (1986) that firms with more favorable information report it with more precision. Firm size, *SIZE*, also plays a positive role in CSR reporting quality owing to the reputation concerns of larger firms that have more at stake in their relations with their stakeholders.

Regression Analyses

Table 14 presents the regression results using firm value as the dependent variable. Columns (1)-(4) show the results for the baseline regressions. Columns (5) and (6) show the results for the full model. The independent variables are CSR disclosure quality score (*CSRS*), CSR disclosure regulation dummy (*REGULATION*), interaction term of *CSRS* with *REGULATION*, CSR performance scores (*CSRPERF*), R&D expenditures (*R&D*), firm size (*SIZE*), per-capita GDP (*GDP*), profitability (*ROA*), level of risk (*LEVERAGE*), absence of R&D reporting (*R&DDUMMY*), capital expenditures (*CAPEX*), and sin industry membership (*SIN*), along with industry and year dummies.

[Table 14 about here.]

The sample is split into two groups based on the strength of legal system, and regressions are run separately for each subsample. In countries with strong legal systems, on average, CSR disclosure quality has a significantly negative association with firm value only when CSR disclosures are regulated. When CSR disclosures are not regulated the association is positive and significant. By contrast, in countries with weak legal systems, CSR disclosure quality has a significantly positive association with firm value only when CSR disclosures are regulated. The association is insignificant when CSR disclosures are not regulated (i.e., voluntary).

These results are consistent with my hypotheses. That CSR disclosure quality has no material impact on firm value in weak legal systems with voluntary CSR disclosures seems to suggest costs of disclosure quality level off its benefits. The reason may be that mimicking by less CSR conscientious firms renders the expenditures spent on disclosure quality rather useless.

R&D and *SIN* have significant and positive association with firm value only for countries with strong legal systems. They are insignificant for countries with weak legal systems. *REGULATION* has significant and negative association with firm value only for countries with weak legal systems. *SIZE* has statistically significant and positive coefficients, and *LEVERAGE* has statistically significant and negative coefficients in both legal systems. The coefficient for *ROA* is positive and significant only in weak legal systems, and the coefficients for *CSRPERF* and *CAPEX* are insignificant regardless of the legal system strength. Lack of R&D information has a negative coefficient for countries with strong legal systems, but a positive yet insignificant coefficient for countries with weak legal systems. Per capita GDP has mostly insignificant association with firm value.

To correct for selection bias, I estimate the regression using the Full Information Maximum Likelihood (FIML) method as reported in Table 15. In the FIML method, the firm-value model and the CSR report issue-choice model are jointly estimated using the maximum likelihood approach. In the issue-choice model, I use "National Corporate Responsibility Index (*National CSR Index*)" provided by AccountAbility (2005) as the exclusion restriction variable, because *National CSR Index* positively impacts CSR reporting choice through peer and market pressure but is not expected to impact firm value by itself. Table 15 shows that indeed *National CSR Index* is positive and significant in

all of the model specifications. The exclusion of *National CSR Index* in the firm-value model serves also to avoid multicollinearity in the firm-value model (Lennox, Francis, & Wang, 2011). *CSR_DUMMY*, as reported in the firm-value model, represents the predicted CSR disclosure choice from the issue-choice model. *CSR_DUMMY* loads significantly in the firm-value model for both strong and weak legal systems implying that self-selection into disclosing CSR is potentially an issue for all firms regardless of their facing strong or weak legal systems.

[Table 15 about here.]

In Table 15, the sign and significance of the coefficient of *CSRS* and *REGULATION* interaction remains unchanged in support of my hypotheses. The coefficients of *REGULATION* and CSR performance are significant and positive for only strong legal systems indicating their favorable reception in environments with less pronounced agency problems.

In Table 16, I report the regression results using two-stage least squares. The results of my analysis using the OLS framework could be misleading in presence of potential endogeneity problems related to firms' decisions regarding reporting quality. Although this approach limits our sample of firms only to those that publish CSR reports, it allows a more focused analysis of the interaction of CSR disclosure quality and regulation when potential endogeneity issues of CSR disclosure quality are accounted for. I use industry-median CSRS scores as the exclusion restriction variable, because industry-median CSR disclosure quality can impact firm value only through its influence on individual firm's CSR reporting quality due to peer pressure. The results in Table 16 confirm those in Table 14. In that, CSR disclosure quality impact firm value negatively in strong legal systems when CSR disclosure regulations exist. The impact is positive in weak legal systems with CSR disclosure regulation.

[Table 16 about here.]

In Table 17, I report the firm value regressions for ADR firms with strong and weak home-country legal systems. This analysis addresses the question of whether having its stock listed in the US that has a strong legal system alter how a firm's CSR disclosure quality impact firm value especially if the firm's home country has a weak legal system. I find that ADR-status of a firm does not change the main tenor of the results. Firms facing weak home-country

legal systems benefit from issuing high quality CSR reports when there is regulation in their home countries, and significantly more so when the firms do not have ADRs. Non-ADR firms facing strong home-country legal systems experience a decline in firm value when they issue high quality CSR only under disclosure regulation. ADR firms facing strong home-country legal systems do experience a decline in firm value when they issue high quality CSR reports per se but not due to disclosure regulation.

[Table 17 about here.]

In Table 18, I report regression results using *CSRS* variable adjusted for integrity assurance. The idea of defining countries based on the strength of their legal systems is to test my argument that CSR disclosure regulation can make up for lack of adequate legal system strength and, thus, enhance the credibility of such reports and the reliability of the information therein. Unfortunately, a company's self-assessment of the quality of its CSR report carries a measure of public skepticism (Sethi et al., 2015a). Accordingly, firms tend to adopt voluntary integrity assurance on their CSR reports from a third-party organization attesting to the truthfulness of the information provided in the report. Although such feature of a CSR report helps improve credibility of the CSR information and enhance stakeholder confidence, third party content verification can also serve as a low-cost substitute to disclosure regulations and mitigate the influence of such regulations on disclosure quality. To address this potential issue, I adjusted the CSR disclosure quality variable (*CSRS*) for assurance by subtracting the assurance component from the overall disclosure quality score and redid the analysis using this adjusted CSR disclosure quality variable (*adjCSRS*). The results in Table 18 provide strong support to those in Table 14. Specifically, CSR disclosure quality impact firm value negatively in strong legal systems, whereas the impact is positive in the case of no such regulations in effect. The impact is strongly positive in weak legal systems with CSR disclosure regulation.

[Table 18 about here.]

Conclusions

CSR has gained prominence after scandals broke revealing corporate actions that are harmful for the environment, investors, employees, customers, communities, and the society at large. Since CSR accountability demands informative

disclosures, corporations increasingly issue CSR reports to appease stakeholder and investor concerns over CSR risks facing firms. These reports typically contain nonfinancial operational data that are not subject to the type of strict standards that financial reports are subject to. Some companies take advantage of this situation to issue CSR reports that paint an overstated and misleading picture of their CSR activities, which results in less CSR transparency. While CSR transparency has costs and benefits, it is important to identify settings in which the benefits exceed the costs and vice versa to gain insights into CSR reporting. The settings I study in this paper include countries with strong or weak legal systems that mandate or do not mandate CSR disclosures. I use firm value as a dependent variable to assess whether CSR transparency has a positive or negative impact in each of these settings. Furthermore, the presence/absence of CSR disclosure regulations across countries provides a unique context to study the relative efficacy of corporate disclosure regulations in general.

My results show that in countries with strong legal systems CSR transparency has a statistically significant negative impact on firm value when CSR disclosures are regulated. Otherwise, I find significant and positive impact. On the contrary, in countries with weak legal systems, CSR disclosure quality has a statistically significant positive impact when CSR disclosures are regulated. In these countries, depending on the estimation method, the impact is either insignificant or significant and positive when CSR disclosures are voluntary.

These results call into question the efficacy of disclosure regulations in countries that can promote credible voluntary disclosures by virtue of their strong legal systems. Nevertheless, CSR disclosure regulations seem to benefit firm value in those countries that lack adequate legal strength. In these countries, disclosure regulations and the rules that they involve may allow stakeholders to circumvent weaknesses in the legal system to enforce informative CSR disclosures that come with benefits that improve average firm value.

Table 10: CSR Report Status and Regulation by Country

	Report Status				
	No	Yes	Total	% Reporting	CSR Disclosure Regulation
Australia	12	15	27	56%	No
Austria	6	6	12	50%	No
Belgium	3	6	9	67%	No
Bermuda	3	0	3	0%	No
Brazil	23	6	29	21%	No
Canada	25	28	53	53%	No
Chile	6	0	6	0%	No
China	22	6	28	21%	No
Colombia	0	3	3	100%	No
Czech Republic	3	0	3	0%	No
Denmark	4	9	13	69%	Yes
Egypt	6	1	7	14%	No
Finland	5	16	21	76%	Yes
France	25	72	97	74%	Yes
Germany	21	54	75	72%	Yes
Greece	3	4	7	57%	No
Hong Kong	6	5	11	45%	No
Hungary	9	3	12	25%	No
India	30	3	33	9%	Yes
Indonesia	1	5	6	83%	Yes
Ireland	9	8	17	47%	No
Israel	6	2	8	25%	No
Italy	5	15	20	75%	Yes
Japan	67	169	236	72%	No
Malaysia	4	0	4	0%	Yes
Mexico	12	11	23	48%	No
Netherlands	11	22	33	67%	Yes
New Zealand	9	3	12	25%	No
Norway	4	11	15	73%	Yes
Pakistan	3	0	3	0%	Yes
Poland	15	3	18	17%	No
Russia	3	3	6	50%	No
Saudi Arabia	3	3	6	50%	No
Singapore	3	3	6	50%	No
South Africa	9	14	23	61%	Yes
South Korea	9	16	25	64%	No
Spain	6	22	28	79%	Yes
Sri Lanka	4	5	9	56%	No
Sweden	3	21	24	88%	Yes
Switzerland	9	15	24	63%	No
Thailand	15	7	22	32%	No
Turkey	0	3	3	100%	No
United Arab Emirates	6	0	6	0%	No
United Kingdom	19	83	102	81%	Yes
United States of America	923	471	1,394	34%	No
Venezuela	2	0	2	0%	No
Total	1,372	1,152	2,524	46%	

The sample period includes years 2009, 2011, and 2012. Report status shows the firm-years with either a standalone CSR report or a sizeable CSR reporting segment in annual report (treatment group) and without such a report (control group) in each country. Countries with CSR disclosure regulation are identified from Global CSR Disclosure report of Initiative for Responsible Investment at Hauser Institute for Civil Society at Harvard Kennedy School (Initiative for Responsible Investment [IRI], 2015), and Carrots and Sticks 2013 (KPMG et al., 2013), a publication of the U.N. Environment Programme and KPMG.

Table 11: CSR Report Status by Industry

	Report Status			
	No	Yes	Total	% Reporting
Basic industry	142	189	331	57%
Capital goods	113	107	220	49%
Construction	71	72	143	50%
Consumer durables	295	174	469	37%
Food and tobacco	84	104	188	55%
Leisure	43	40	83	48%
Other	11	24	35	69%
Petroleum	88	90	178	51%
Regulated utilities	108	107	215	50%
Services	141	52	193	27%
Textiles and trade	153	57	210	27%
Transportation	39	58	97	60%
Unregulated utilities	84	78	162	48%
Total	1,372	1,152	2,524	46%

Firm-years with and without CSR report in 46 countries are classified by industry using primary two-digit SIC codes.

Table 12: Descriptive Statistics

Panel A: Full-Sample (N=2,524)

	Mean	Lower Quartile	Median	Upper Quartile	St. Dev.
MKVAL	21,297.40	3,572.19	8,642.03	20,968.83	43,918.60
CSRSxCSR_DUMMY	37.97	25.75	37.00	49.00	15.87
CSR_DUMMY	0.46	0.00	0.00	1.00	0.50
REGULATION	0.20	0.00	0.00	0.00	0.40
CSRPERF	0.67	0.00	1.00	1.00	0.47
R&D	0.03	0.00	0.00	0.03	0.13
SIZE	10.06	8.63	9.52	10.83	2.28
GDP	29.32	28.52	30.26	30.34	1.37
ROA	0.13	0.08	0.12	0.17	0.20
LEVERAGE	0.27	0.16	0.25	0.37	0.17
CAPEX	0.05	0.02	0.04	0.07	0.10
SIN	0.03	0.00	0.00	0.00	0.18

Panel B: Breakdown of Sample by CSR Disclosure Regime

	Regulation (N=497)		No Regulation (N=2,027)			
	Mean	Median	Mean	Median	t-test *p*-values	Wilcoxon *p*-values
MKVAL	25,490.12	12,826.36	20,269.38	8,013.42	0.02	0.00
CSRS	29.90	32.50	14.25	0.00	0.00	0.00
CSR_DUMMY	0.70	1.00	0.40	0.00	0.00	0.00
CSRPERF	0.81	1.00	0.64	1.00	0.00	0.00
R&D	0.02	0.00	0.03	0.00	0.25	0.00
SIZE	10.19	10.01	10.02	9.37	0.15	0.00
GDP	28.03	28.41	29.63	30.26	0.00	0.00
ROA	0.13	0.11	0.13	0.12	0.81	0.00
LEVERAGE	0.25	0.23	0.28	0.26	0.01	0.00
CAPEX	0.05	0.04	0.05	0.04	0.82	0.29
SIN	0.04	0.00	0.03	0.00	0.13	0.13

Panel C: Breakdown of Sample by Legal System Strength

	Strong Legal System (N=2,225)		Weak Legal System (N=299)			
	Mean	Median	Mean	Median	t-test *p*-values	Wilcoxon *p*-values
MKVAL	21,166.55	8,718.13	22,271.06	7,696.09	0.68	0.24
CSRS	16.78	0.00	21.39	0.00	0.00	0.34
CSR_DUMMY	0.45	0.00	0.49	0.00	0.24	0.24
REGULATION	0.17	0.00	0.42	0.00	0.00	0.00
CSRPERF	0.66	1.00	0.76	1.00	0.00	0.00
R&D	0.03	0.00	0.01	0.00	0.04	0.00
SIZE	9.97	9.40	10.69	10.54	0.00	0.00
GDP	29.53	30.26	27.74	28.11	0.00	0.00
ROA	0.13	0.12	0.15	0.11	0.22	0.30
LEVERAGE	0.27	0.26	0.25	0.24	0.03	0.16
CAPEX	0.05	0.04	0.07	0.05	0.00	0.00
SIN	0.03	0.00	0.03	0.00	0.87	0.87

Panel A reports the descriptive statistics for the full sample. Panel B breaks down the sample based on whether or not firms are subject to CSR disclosure regulations in their respective countries. Panel C breaks down the sample based on whether or not firms face a strong legal system in their respective countries. Legal system strength is measured by the product of the revised Anti-Director Rights index from Djankov et al. (2008) and the Rule of Law index from the International Country Risk Guide (ICRG) available in Lexis-Nexis. Countries with strong (weak) legal systems are those with above- (below-) median legal system strength scores. *MKVAL* is market value of equity measured as common shares outstanding multiplied by the year-end price (reported in USD millions). *CSRS* is CSR reporting quality provided by the CSR-S Monitor (Weissman Center for International Business, 2014) and ranges from 0 to 100. *REGULATION* is a dummy variable that equals 1 if a country has CSR disclosure regulations in effect and equals 0 otherwise. *CSRPERF* is a dummy variable that equals 1 if CSR performance exceeds annual industry median CSR performance, and 0 otherwise. *R&D* is research and development expenses scaled by sales. *SIZE* is the logarithm of sales. *GDP* is the natural logarithm of the per-capita Gross Domestic Product. *ROA* is income before extraordinary items divided by total assets. *LEVERAGE* is book debt over book assets. *CAPEX* is capital expenditures scaled by book value of total assets. *SIN* equals 1 for sin stocks such as alcohol (SIC 2100-2199), tobacco (SIC 2080-2085), and gaming (NAICS 7132, 71312, 713210, 71329, 713290, 72112, and 721120) companies and equals 0 otherwise (Hong & Kacperczyk, 2009).

Table 13: Correlation Matrix

		Spearman											
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) MKVAL		1	**0.38**	**0.36**	**0.12**	**0.13**	**0.18**	**0.52**	-0.03	**0.36**	**-0.09**	**0.21**	**0.09**
(2) CSRS		**0.22**	1	-	**0.26**	**0.20**	**0.14**	**0.36**	**-0.17**	0.02	0.03	**0.13**	0.03
(3) CSR_DUMMY	P	**0.18**	-	1	**0.24**	**0.18**	**0.13**	**0.34**	**-0.17**	0.02	0.04	**0.13**	0.02
(4) REGULATION	e	**0.05**	**0.29**	**0.24**	1	**0.14**	**0.07**	**0.12**	**-0.49**	-0.03	**-0.05**	**0.04**	0.03
(5) CSRPERF	a	**0.07**	**0.22**	**0.18**	**0.14**	1	-0.01	0.03	-0.03	**0.08**	-0.01	**0.07**	-0.04
(6) R&D	r	0.02	-0.01	-0.02	-0.02	0.00	1	**0.07**	0.01	0.04	**-0.18**	**-0.19**	**-0.04**
(7) SIZE	s	**0.23**	**0.30**	**0.29**	0.03	**-0.06**	**-0.15**	1	**-0.28**	-0.02	0.00	**0.22**	-0.01
(8) GDP	o	0.04	**-0.18**	**-0.16**	**-0.47**	**-0.12**	**0.07**	**-0.24**	1	**0.12**	**0.05**	**-0.14**	-0.01
(9) ROA	n	**0.15**	0.01	0.00	0.00	**0.04**	**-0.35**	**0.06**	-0.03	1	**-0.15**	**0.30**	**0.07**
(10) LEVERAGE		**-0.11**	-0.01	0.01	**-0.05**	-0.01	**-0.13**	0.00	**0.08**	**-0.12**	1	**0.08**	**0.05**
(11) CAPEX		**0.07**	0.02	0.02	0.00	0.03	-0.03	**0.09**	**-0.09**	**0.68**	0.02	1	**-0.09**
(12) SIN		**0.05**	0.03	0.02	0.03	-0.04	-0.03	-0.02	0.01	0.02	0.03	-0.04	1

Pearson and Spearman correlation coefficients for the full sample (N=2,524) appear in bold if they are statistically significant at $p<0.05$. Variable definitions are provided in Table 12.

Table 14: Firm Value Regressions - Ordinary Least Squares (OLS)

	Legal System (LS) Strength in Home Country					
	Strong LS (1)	Weak LS (2)	Strong LS (3)	Weak LS (4)	Strong LS (5)	Weak LS (6)
CSRSxREGULATION					-0.790**	1.290***
					(0.015)	(0.006)
CSRS	0.276	1.045**	0.355	1.230**	0.665***	0.443
	(0.269)	(0.022)	(0.128)	(0.013)	(0.005)	(0.453)
REGULATION			-0.291**	-0.373*	-0.0889	-0.639***
			(0.011)	(0.052)	(0.578)	(0.005)
CSRPERF	-0.0462	0.131	-0.0229	0.122	-0.0367	0.0684
	(0.355)	(0.270)	(0.687)	(0.302)	(0.525)	(0.572)
R&D	0.939***	0.479	0.927***	1.351	0.924***	1.358
	(0.001)	(0.777)	(0.001)	(0.400)	(0.001)	(0.371)
SIZE	0.864***	1.028***	0.857***	1.024***	0.851***	1.026***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GDP	0.0102	-0.130**	-0.0346	-0.0977	-0.0352	-0.116*
	(0.688)	(0.046)	(0.219)	(0.141)	(0.206)	(0.091)
ROA	0.171	3.053***	0.163	3.291***	0.163	3.427***
	(0.336)	(0.002)	(0.363)	(0.001)	(0.365)	(0.000)
LEVERAGE	-1.810***	-0.905**	-1.806***	-1.153***	-1.795***	-1.079**
	(0.000)	(0.033)	(0.000)	(0.009)	(0.000)	(0.014)
R&DDUMMY	-0.170***	0.238*	-0.183***	0.163	-0.188***	0.179
	(0.003)	(0.061)	(0.001)	(0.193)	(0.001)	(0.153)
CAPEX	0.768	-1.524	0.743	-1.575	0.721	-1.431
	(0.257)	(0.312)	(0.267)	(0.280)	(0.274)	(0.307)
SIN	1.181***	0.668	1.218***	0.519	1.242***	0.538
	(0.000)	(0.108)	(0.000)	(0.240)	(0.000)	(0.205)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
# of countries	28	18	28	18	28	18

Ordinary Least Squares (OLS) regressions of firm value as measured by market value (*MKVAL*) on independent variables. *CSRSxREGULATION* is the interaction term for *CSRS* and *REGULATION*. *R&DDUMMY* is equal to 1 if a firm does not report an R&D expense and is 0 otherwise. Other variables are defined in Table 12. p-values are in parentheses. * , **, and *** denote $p<0.1$, $p<0.05$, and $p<0.01$, respectively.

Table 15: Firm Value Regressions - Full Information Maximum Likelihood (FIML) Estimation

	Legal System (LS) Strength in Home Country					
	Strong LS (1)	Weak LS (2)	Strong LS (3)	Weak LS (4)	Strong LS (5)	Weak LS (6)
Firm-Value Model						
CSRSxREGULATION					-0.781***	1.368***
					(0.002)	(0.002)
CSRS	0.317	1.241***	0.375*	1.379***	0.669***	0.598
	(0.140)	(0.007)	(0.079)	(0.003)	(0.004)	(0.250)
REGULATION			0.0185	0.0943	0.223**	-0.167
			(0.828)	(0.600)	(0.039)	(0.382)
CSRPERF	0.280***	0.234*	0.282***	0.234*	0.272***	0.184
	(0.000)	(0.077)	(0.000)	(0.076)	(0.000)	(0.168)
R&D	1.008***	0.739	1.009***	0.493	1.008***	0.459
	(0.000)	(0.754)	(0.000)	(0.837)	(0.000)	(0.849)
SIZE	0.945***	1.085***	0.947***	1.085***	0.942***	1.090***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GDP	-0.00811	-0.0882	-0.00482	-0.0986	-0.00477	-0.118*
	(0.709)	(0.146)	(0.855)	(0.109)	(0.857)	(0.059)
ROA	0.154**	2.905***	0.154**	2.838***	0.154**	2.959***
	(0.020)	(0.000)	(0.020)	(0.000)	(0.020)	(0.000)
LEVERAGE	-1.945***	-0.353	-1.947***	-0.302	-1.938***	-0.183
	(0.000)	(0.444)	(0.000)	(0.534)	(0.000)	(0.701)
R&DDUMMY	-0.185***	-0.0346	-0.185***	0.000438	-0.190***	0.0115
	(0.001)	(0.828)	(0.001)	(0.998)	(0.001)	(0.941)
CAPEX	0.870***	-2.236**	0.872***	-2.182**	0.851***	-2.053*
	(0.001)	(0.044)	(0.001)	(0.049)	(0.001)	(0.065)
SIN	1.315***	0.882**	1.314***	0.907**	1.338***	0.944**
	(0.000)	(0.040)	(0.000)	(0.038)	(0.000)	(0.031)
CSR_DUMMY	-1.152***	-1.463***	-1.193***	-1.522***	-1.257***	-1.536***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Issue-Choice Model						
National CSR Index	0.138***	0.0640***	0.149***	0.0340**	0.148***	0.0321**
	(0.000)	(0.000)	(0.000)	(0.016)	(0.000)	(0.017)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
# of countries	24	18	24	18	24	18
ρ	0.674	0.778	0.701	0.797	0.708	0.830
Likelihood Ratio χ^2 (Ho: ρ=0)	7547.0***	1912.6***	7513.8***	1917.7***	7506.2***	1911.2***

The firm-value model is jointly estimated with the CSR report issue-choice model using the Full Information Maximum Likelihood (FIML) method. Firm value is measured by market value (*MKVAL*). *CSRSxREGULATION* is the interaction term for *CSRS* and *REGULATION*. *CSR_DUMMY* is the CSR disclosure choice prediction from the issue-choice model. *R&DDUMMY*=1 if a firm does not report an R&D expense and is 0 otherwise. Other variables are defined in Table 12. The CSR report issue-choice model uses *National CSR Index* (AccountAbility, 2005) as the exclusion restriction and controls for year and industry fixed effects. ρ is the correlation between the error terms in the firm-value and the issue-choice models. The likelihood ratio chi-square statistic is a test of the null hypothesis that there is no self-selection in CSR report issue choice. p-values are in parentheses. * , **, and *** denote p<0.1, p<0.05, and p<0.01, respectively.

Table 16: Two Stage Least Squares Regressions

	Legal System (LS) Strength in Home Country			
	Strong LS	Strong LS	Weak LS	Weak LS
Second stage				
CSRSxREGULATION		-1.877**		3.521**
		(0.040)		(0.046)
CSRS	-0.929	-0.712	3.973***	3.126***
	(0.168)	(0.221)	(0.001)	(0.009)
REGULATION	-0.595***	0.171	0.258	-1.263
	(0.000)	(0.660)	(0.223)	(0.110)
CSRPERF	0.333***	0.352***	0.0104	-0.0387
	(0.001)	(0.001)	(0.947)	(0.830)
R&D	6.340***	6.516***	-3.823*	-5.881**
	(0.000)	(0.000)	(0.064)	(0.046)
SIZE	0.866***	0.871***	0.995***	1.002***
	(0.000)	(0.000)	(0.000)	(0.000)
GDP	-0.103***	-0.106***	-0.127	-0.121
	(0.001)	(0.001)	(0.175)	(0.243)
ROA	0.385	0.366	5.580***	6.515***
	(0.521)	(0.543)	(0.002)	(0.001)
LEVERAGE	-1.097***	-1.065***	-1.002	-0.940
	(0.000)	(0.000)	(0.119)	(0.222)
R&DDUMMY	0.0336	0.0321	0.648***	0.690***
	(0.620)	(0.650)	(0.001)	(0.004)
CAPEX	-0.211	-0.197	1.831	2.245
	(0.836)	(0.847)	(0.172)	(0.136)
SIN	1.563***	1.621***	0.747*	0.801
	(0.000)	(0.000)	(0.097)	(0.166)
First stage				
Ind.-Median CSRSxREGULATION		0.775***		0.794***
		(0.000)		(0.000)
Ind.-Median CSRS	0.641***	-0.093**	0.884***	-0.173
	(0.000)	(0.030)	(0.000)	(0.224)
Year fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes
Underidentification test (p-value)	0.0089	0.0024	0.0111	0.0190
Endogeneity test (p-value)	0.0474	0.0234	0.0207	0.0232

Two-stage least squares regressions with market value as the dependent variable for firms domiciled in countries with strong/weak legal systems. The model is estimated using the 1,152 firm-year observations for which *CSRS* reporting quality scores are available. The first stage regressions use industry-median *CSRS* scores to instrument *CSRS* quality scores as the exclusion restriction and relevance criteria hold for the proposed instrumental variable. *R&DDUMMY*=1 if a firm does not report an R&D expense and is 0 otherwise. Other variable definitions are provided in Table 12. p-values are in parentheses. * , **, and *** denote p<0.1, p<0.05, and p<0.01, respectively.

Table 17: Firm Value Regressions for ADR and Non-ADR Firms

	Legal System (LS) Strength in Home Country - ADR Status			
	Strong LS & ADR	Strong LS & Non-ADR	Weak LS & ADR	Weak LS & Non-ADR
CSRSxREGULATION	0.524	-1.113**	0.974	1.677**
	(0.152)	(0.028)	(0.166)	(0.017)
CSRS	-0.928**	0.266	-0.594	0.165
	(0.013)	(0.478)	(0.452)	(0.845)
REGULATION	-0.667***	0.106	-0.421*	-0.510**
	(0.001)	(0.510)	(0.072)	(0.034)
CSRPERF	0.108	0.183**	0.439**	-0.0963
	(0.421)	(0.042)	(0.024)	(0.482)
R&D	0.621	4.810**	10.71***	-3.919**
	(0.623)	(0.030)	(0.003)	(0.036)
SIZE	0.882***	0.958***	1.107***	1.034***
	(0.000)	(0.000)	(0.000)	(0.000)
GDP	0.0690	-0.182***	-0.152*	-0.235**
	(0.155)	(0.000)	(0.088)	(0.017)
ROA	5.667***	0.0483	0.897	3.324***
	(0.000)	(0.178)	(0.299)	(0.001)
LEVERAGE	-1.360***	-2.561***	0.720	-0.906
	(0.000)	(0.000)	(0.365)	(0.149)
R&DDUMMY	-0.304***	0.186*	0.244	0.249*
	(0.003)	(0.066)	(0.110)	(0.094)
CAPEX	-2.636	0.432	2.889	-3.161**
	(0.235)	(0.254)	(0.146)	(0.046)
SIN	0.902***	1.368***	2.326***	-0.367
	(0.003)	(0.000)	(0.000)	(0.325)
Year fixed effect	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes
# of countries	17	27	11	17

Firm value OLS regressions with market value as the dependent variable for subsamples of firms domiciled in countries with strong/weak legal systems and with/without US ADRs. *R&DDUMMY*=1 if a firm does not report an R&D expense and is 0 otherwise. Other variable definitions are provided in Table 12. *p*-values are in parentheses. * , **, and *** denote $p<0.1$, $p<0.05$, and $p<0.01$, respectively.

Table 18: Firm Value Regressions Using CSRS Adjusted for Integrity Assurance

	Legal System (LS) Strength in Home Country					
	Strong LS (1)	Weak LS (2)	Strong LS (3)	Weak LS (4)	Strong LS (5)	Weak LS (6)
adjCSRSxREGULATION					-0.872***	1.456***
					(0.004)	(0.008)
adjCSRS	0.417***	0.701***	0.504***	0.948***	0.704***	0.199
	(0.002)	(0.010)	(0.000)	(0.001)	(0.000)	(0.611)
REGULATION			-0.288***	-0.362**	-0.0882	-0.628***
			(0.000)	(0.016)	(0.414)	(0.001)
CSRPERF	-0.0472	0.132	-0.0234	0.125	-0.0366	0.0751
	(0.321)	(0.230)	(0.626)	(0.259)	(0.450)	(0.508)
R&D	0.938***	0.509	0.927***	1.352	0.925***	1.345
	(0.002)	(0.820)	(0.002)	(0.549)	(0.002)	(0.560)
SIZE	0.864***	1.025***	0.857***	1.021***	0.851***	1.024***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GDP	0.00895	-0.130**	-0.0358*	-0.0987	-0.0373*	-0.115*
	(0.621)	(0.038)	(0.090)	(0.106)	(0.077)	(0.066)
ROA	0.171	3.086***	0.163	3.317***	0.163	3.442***
	(0.295)	(0.000)	(0.323)	(0.000)	(0.325)	(0.000)
LEVERAGE	-1.813***	-0.923**	-1.810***	-1.161***	-1.798***	-1.098***
	(0.000)	(0.030)	(0.000)	(0.006)	(0.000)	(0.009)
R&DDUMMY	-0.170***	0.222	-0.183***	0.150	-0.187***	0.168
	(0.003)	(0.102)	(0.001)	(0.298)	(0.001)	(0.235)
CAPEX	0.771	-1.573	0.748	-1.627	0.730	-1.458
	(0.239)	(0.291)	(0.248)	(0.258)	(0.252)	(0.299)
SIN	1.184***	0.677*	1.222***	0.531	1.241***	0.547
	(0.000)	(0.057)	(0.000)	(0.145)	(0.000)	(0.121)
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
# of countries	28	18	28	18	28	18

Ordinary Least Squares (OLS) regressions of firm value as measured by market value (*MKVAL*) on independent variables. *adjCSRS* is CSR reporting quality minus score for the integrity assurance contextual element provided by the CSR-S Monitor (Weissman Center for International Business, 2014). *adjCSRSxREGULATION* is the interaction term for *adjCSRS* and *REGULATION*. *R&DDUMMY* is equal to 1 if a firm does not report an R&D expense and is 0 otherwise. Other variable definitions are provided in Table 12. *p*-values are in parentheses. * , **, and *** denote $p<0.1$, $p<0.05$, and $p<0.01$, respectively.

Does Corporate Responsibility Affect Firm Leverage? The Roles of Environmental Risk Management and Stakeholder Relations on Capital Structure

Corporate responsibility (CR) has become an integral part of mainstream business activities, with more than half of Fortune 500 firms now providing regular public statements exclusively discussing CR (Governance and Accountability Institute, 2012). The increasing public awareness toward CR has come to affect a firm's success or failure. Especially, firms with inadequate CR activities expose themselves to significant risks emanating from their stakeholders and the public at large. Such risks inevitably play a role in determining the fate of a firm's implicit or explicit contracts with stakeholders and shaping its capital structure. In particular, risk management through an effective CR policy can increase a firm's borrowing capacity by reducing default risk as well as fostering better relations with stakeholders such as customers, employees, suppliers, and communities.[26] There has been research examining the impact of individual, isolated CR activities on financial leverage, with somewhat conflicting results, but there is lack of research examining how a firm's overall approach to CR jointly encompassing its social and environmental activities, which have different characteristics, affects its financing decisions.[27] [28] The goal of this paper is to fill this gap in the literature.

It has long been recognized that risk of bankruptcy imposes costs on a firm's nonfinancial stakeholders. Titman (1984) shows that firms can implement the ex-ante value-maximizing liquidation policy to ensure that they bear the liquidation costs imposed on their stakeholders, thereby achieving incentive alignment. Ensuing research documents that firms putting more emphasis on employee well-being operate with lower debt ratios to mitigate the risk of bankruptcy, because employees are the party that bears the highest indirect costs of bankruptcy (Berk et al., 2010). Firms aiming to

[26]For example, more environmentally conscious firms reduce potential risks associated with government sanctions over environmental compliance, activist protests, and consumer boycotts. In fact, to the extent firms protect the environment, they can receive a more favorable regulatory treatment, and attract environmentally conscious consumers and investors to grow their operations smoothly. A firm's social CR activities entail many benefits of their own as well. To the extent a firm invests in social CR, it can maintain better community, local government, employee, and consumer relations to help it achieve better profit growth. As examples, a firm investing in a school project at the locality of its manufacturing facilities will likely receive a more favorable treatment when it has to seek permits for its operations there, or a firm fostering employee and customer satisfaction will likely attract more qualified employees and have a more loyal customer base. Social CR also helps control the risk that a firm may suffer damages from not having good relations with stakeholders such as communities, employees, and customers.

[27]Prior studies, for example, investigate the role of a firm's reputation for better employee treatment (Bae, Kang, & Wang, 2011; Berk, Stanton, & Zechner, 2010; Verwijmeren & Derwall, 2010), relations with its customers-suppliers (Kale & Shahrur, 2007; Maksimovic & Titman, 1991; Titman, 1984; Titman & Wessels, 1988), labor union bargaining (Bronars & Deere, 1991), and environmental risk management (Sharfman & Fernando, 2008) in leverage decisions.

[28]Firms typically pursue a multidimensional CR policy to address concerns of their stakeholders, which extend well beyond shareholders to comprise employees, buyers, suppliers, NGOs, pension funds, environmentalists, and regulators (Donaldson & Preston, 1995; Freeman, 2010). Therefore, management usually strives to balance various incentives between these stakeholders that can have different implications for the optimum amount of leverage.

maintain their reputation for high product quality should also limit their use of debt to show their commitment to their implicit contracts with suppliers (Maksimovic & Titman, 1991). Similarly, firms operating in durable goods industry are more likely to produce unique products and have higher incentives to maintain low leverage to induce their stakeholders to undertake relation-specific investments (Banerjee, Dasgupta, & Kim, 2008).

Unlike for social relations, we know very little about the role environmental risk management plays in a firm's financing decisions. The extant research on environmental management mainly focuses on its risk and cost of capital implications. For example, poor environmental risk management escalates the uncertainties inherent in a firm's future activities that could result from extreme environmental events (e.g., the *Exxon Valdez* oil spill) and increases the volatility in future cash flows resulting from potential liabilities related to regulatory, compliance, and litigation risks and cleanup costs (Gao & Connors, 2011; Sharfman & Fernando, 2008), which collectively leads to higher cost of capital (R. Bauer & Hann, 2010; Chava, 2014; El Ghoul et al., 2011).[29] In contrast, better risk management through proactive environmental strategies leads to lower perceived risk (Bansal & Clelland, 2004; Bouslah, Kryzanowski, & M'Zali, 2013; Feldman, Soyka, & Ameer, 1997), increases a firm's optimal debt ratio (Leland, 1998), improves the assessed quality of its debt, and leads to a strategic switch from equity to debt financing (Sharfman & Fernando, 2008).

As prior research focuses primarily on stakeholder relations (i.e., social perspective), it falls short of making clear theoretical predictions as to how broader CR engagement impacts the leverage choice in firms. This lack of evidence is particularly problematic given the potential for environmental risk management to moderate, if not entirely avert, the relation between stakeholder engagement and leverage. In particular, if stakeholders, deciding on their firm-specific investments, consider the financial distress associated with financial leverage as a negative proxy for a firm's commitment to honor its implicit contracts, then firms that pursue stakeholder-oriented policies should rely less on debt financing to assure incentive alignment. There are potentially two arguments for how a firm's environmental management can moderate this relationship. First, a strong environmental commitment leads to lower perceived risk of financial distress.[30] Accordingly, if stakeholders evaluate environmentally sound firms as more likely to maintain

[29]Instrumental stakeholder theory (Donaldson & Preston, 1995) and good management theory (Waddock & Graves, 1997) argue that better CR performance will result in lower financial risk. Firms that respond to claims from stakeholders face lower probability of legal proceedings and regulatory intervention by governments (Orlitzky & Benjamin, 2001). In line with these theories, Orlitzky and Benjamin (2001) in their meta-analytic review of the literature document a negative relationship between a firm's commitment to CR and its financial risk.

[30]Good environmental management mitigates perceived riskiness through less volatile future cash flows, reduced costs of litigation, legal and regulatory compliance, lower information asymmetry and better risk assessment by stakeholders through disclosure, and higher reputation and enhanced loyalty of stakeholders such as employees, customers, and suppliers (Bansal & Clelland, 2004; Bouslah et al., 2013; Feldman et al., 1997).

the terms of trade and honor their implicit contracts with them, then bankruptcy risk becomes less of a concern for stakeholders to make relation-specific investments. As risk management thus substitutes leverage adjustments to address stakeholder concerns about bankruptcy risk, there will be less of an incentive for a firm to resort to debt reduction to ease stakeholder concerns.

Second, proactive environmental stance can also serve as a signal of a firm's reputation and attractiveness as a responsible employer (Fombrun & Shanley, 1990; Greening & Turban, 2000; Turban & Greening, 1997). Hence, firms with an active environmental program become more attractive to prospective employees than their nonactive counterparts (T. N. Bauer & Aiman-Smith, 1996), allowing them to hire and retain highly talented employees. According to social identity theory, a firm's actions on environmental and social issues influence an individual's self-image as to what it would be like to be associated with that organization (Ashforth & Mael, 1989; Dutton, Dukerich, & Harquail, 1994). Hence, stakeholders' identification with a positive environmental profile can lead to a higher organizational commitment (Dutton et al., 1994), job satisfaction (Wheeler, Richey, Tokkman, & Sablynski, 2006), higher reputation, and enhanced loyalty (Berman et al., 1999). This establishes a bonding mechanism with the organization that can then positively influence the stakeholder's perception of the firm's commitment to its implicit contracts even when the firm holds high leverage.

Better risk management through proactive environmental management also results in a lower cost of debt and higher credit ratings (R. Bauer & Hann, 2010; Chava, 2014; Goss & Roberts, 2011), broader investor base (Bansal, 2005; Heinkel et al., 2001), and better access to finance, as these firms will attract more investors (Cheng et al., 2014). These potential benefits could further incentivize firms to increase leverage without necessarily stirring stakeholder concerns.[31] The opposite could also be true: firms with inadequate environmental CR activities could move away from debt financing due to several negative externalities associated with poor risk management, such as higher perceived riskiness and negative environmental screens by norm-constrained investors (Heinkel et al., 2001; Hong & Kacperczyk, 2009). This points to another potential source of variation in firm leverage, especially within firms that, for example,

Consequently, a better environmental profile can positively influence the attitudes of stakeholders toward the firm regarding its ability to fulfill its implicit contracts with stakeholders. This suggests that a firm can utilize environmental risk management as a substitute to its leverage policy to address stakeholder concerns about the firm's potential liquidation risk.

[31] I follow Sharfman and Fernando (2008) and use environmental and social performance scores as proxies for environmental risk management and stakeholder relations, respectively, where higher scores indicate better risk management and higher stakeholder well-being, respectively.

have better reputation for treating employees fairly or produce unique products. Overall, better environmental risk management not only lowers the perceived risk of financial distress and increases debt capacity, but also provides a strong signal to stakeholders about a firm's organizational norms, values, and reputation for maintaining the terms of trade with its stakeholders.

I examine the impact of a firm's commitment to environmental and social actions on its capital structure using a sample of 4,741 firm-year observations for US firms for which CR scores are available for the period 2002-2012. I find that firms with a higher score on environmental CR maintain higher leverage, while those with higher scores on social CR activities tend to use lower debt. However, overall CR score has no statistically significant impact on leverage, masking the significance of its environmental and social components. I also find that the variation in leverage is driven mostly by the across-industry differences in the environmental and social indices. Taken together, these results have two important implications. First, they provide supporting evidence that both environmental management and social engagement influence leverage decisions, though the extent of these relations is subject to change with both within-industry and across-industry variations in incentives to pursue a particular policy, e.g., a more active environmental risk management policy in oil and gas industry or an employee well-being policy in knowledge-intensive industries such as high-technology, financial services, the legal and healthcare professions, and business management. Second, by examining CR on a disaggregated level, I can also assess how these variations in incentives may serve as mitigating factors in the link between a firm's treatment of its nonfinancial stakeholders and leverage by decreasing the probability of financial distress, in particular through environmental risk management.

I first examine my dual model by dividing the sample into two components: firms with above-overall-median and below-overall-median CR performance. The leverage choice of superior CR performers will reflect the influence of both environmental and social attributes and this sample will help examine how firms determine capital structure when confronted by potentially conflicting incentives for financing entailed by these two groups of activities. I also report for each subsample the number of firms with above category-median scores to ensure I have a balanced sample of firms with high environmental and social CR performances in each group. The results support my main predictions. In particular, among the superior CR performers, capital structure is solely determined by environmental risk management, while social relations determine leverage decisions only for below-median performers. In addition, both subsamples

are balanced in the number of above-median performers in each category. These results attest to the dominant role of environmental risk management in leverage decisions even when incentives associated with environmental and social attributes coexist. They also provide counter-evidence on the proposed interaction between a firm's social engagement and corporate financing decisions by underscoring the moderating role of environmental risk management on the proposed link.

Second, I examine whether the implications of a firm's environmental risk management for the stability in cash flows induce a difference in the firm's financing policy. According to the trade-off theory, uncertainty in a firm's future cash flows and the associated default risk disfavor debt financing in order to safeguard the firm from bankruptcy. To avoid bankruptcy, these firms will be less likely to use debt, suggesting a negative relation between cash flow volatility and leverage. A proactive environmental program reduces the risk of potential liabilities resulting from regulatory issues, noncompliance, and potential litigation costs (Barth & McNichols, 1994). A firm's commitment to its environment thus mitigates unsystematic risk driven by negative environmental events, avoids lumpy cash payments and ensures stable cash flows, the lack of which compromises the firm's ability to pay off its debt and eventually leads to default (Lubatkin & Chatterjee, 1994). Accordingly, I expect firms with strong environmental commitment to use more debt and this positive relation to be more pronounced for firms with higher cash flow volatility, even after controlling for social CR performance. Strikingly, environmental management alone determines leverage decisions, while social relations has no material influence on debt ratio for this particular sample of firms associated with highly volatile cash flows. The observed balance in the number of superior environmental and social performers in the sample further confirms the lack of a potential one-sided influence of a particular dimension of CR.

Third, I test another prediction of the trade-off theory, which emphasizes the balance between tax benefits and distress costs of debt. In particular, higher taxable income incentivizes firms to increase debt to take full advantage of tax benefits. To the extent that discretionary investments, particularly environmental activities, reduce firm risk and increase optimal leverage, firms that credibly commit themselves to sound environmental management practices can maintain higher leverage, which, in turn, maximizes tax-saving benefits, given their commitment to social engagement. This also suggests a stronger positive relation between environmental management and leverage for firms with higher taxable income than their less profitable counterparts. I find results supporting this argument.

In the last set of analyses, following Bae et al. (2011), I investigate the empirical validity of the arguments provided by Maksimovic and Titman (1991) as to whether the impact of stakeholder concerns on leverage differs with different firm characteristics. Specifically, I control for environmental commitment and, first, test whether the predicted negative relation between the extent of a firm's commitment to its stakeholders and its leverage is stronger for firms in financial distress than for their financially sound counterparts. The results only partially support their predictions. Socially active firms tend to maintain lower leverage, yet, contrary to the predictions, financially distressed firms do not significantly overreact relative to nondistressed firms.[32] More strikingly, financially distressed firms tend to use more debt with better environmental risk management, consistent with the risk reduction benefits from environmental commitment. One explanation supporting my risk management argument is that better environmental risk management reduces the level of default risk that a firm presents to the debt markets (Sharfman & Fernando, 2008), the implications on firm debt (e.g., enhanced quality of debt and optimal leverage) of which apply disproportionately to financially distressed firms and thus bring two groups closer together in terms of the firm leverage impact of social relations.

Second, I test another prediction of Maksimovic and Titman (1991) that unique products and firm-specific assets (proxied by R&D intensity) will provide higher incentives for firms to use less debt to maintain their reputation for good stakeholder treatment. The results provide only limited support for their prediction. Firms with a reputation for treating stakeholders fairly (higher social CR score) maintain lower leverage even after introducing environmental CR performance to the model, but only for the high R&D group. Though this relation vanishes for the low R&D group, the difference between the two groups is insignificant and thus does not reflect a connection with product specificity. Conversely, better environmental performance is associated with higher leverage for the low R&D group. Overall, these results provide evidence that a firm's reputation for both sound environmental risk management and good social relations together (but not singly) determine firm leverage, yet the extent of these relations varies considerably with incentives entailed by different firm and industry characteristics.

This study overcomes some of the limitations of the previous research in making a contribution to the literature. First, it extends the literature on the traditional determinants of capital structure by focusing on one of the emerging

[32]I use two different proxies for financial distress. The difference in coefficients on social attributes between two groups turns significant only when I use firm size. I observe no significant difference between two groups when using the proportion of firms with negative earnings before interest and taxes (EBIT) in the industry as my financial distress proxy.

concepts in business. CR has gained significant momentum, especially in the last decade, with the increase in awareness of ethical, social, and environmental matters. Over time, a growing number of firms have adopted sustainable practices as part of their business models to address increasing concerns from various stakeholders over their environmental and social impact (Jo & Harjoto, 2011). Despite the emergence of CR in the business world, little is known about its implications on capital structure decisions. This paper sheds a light on the link between commitment to CR and financing decisions for a sample of US firms.

Second, motivated by previous studies on CR performance (e.g., Goss & Roberts, 2011; Jiao, 2010), I treat CR performance and its components as endogenous and apply the two-stage least squares (2SLS) estimation technique to address potential endogeneity problems. Specifically, I use industry-median performance scores to instrument for the main variables of interest in the regression models and estimate a system of equations to investigate their impact on leverage. This helps isolate and accurately identify the influence of firms' environmental and social policies and, thereby, overcome an important limitation of previous research dealing either with an aggregate CR measure or a disaggregated version of it.

Third, the current study differs from other studies in that I control for all main aspects of a firm's overall CR policy rather than focusing on a single, isolated aspect of it (e.g., a firm's attitude toward its employees only). Such an approach has its merits: stakeholders may find it difficult to process complex information disclosed by firms and derive precise relations between CR performance and leverage (Berk et al., 2010). In this case, their second-best alternative is publicly available CR rankings or ratings that are mostly in aggregate forms.[33] Moreover, although the effect on corporate decisions may vary across various aspects of CR, firm managers are responsible to a diverse group of stakeholders, urging them to be more attentive to their varying interests and concerns on a wider array of activities ranging from human rights, philanthropy, and community relations to bribery and corruption. Focusing too much on these individual aspects may lead one to fail to see the big picture and how these individual components relate to each other as well as to managerial decisions. Therefore, using an aggregate rather than an aspect-specific CR performance measure provides a more complete picture of these competing factors and validates the explanatory power of the analysis.

The remainder of the paper is organized as follows. In the next section, I review the methodology and the

[33]The most well-known examples for publicly available CR rankings/ratings are the Dow Jones Sustainability Index, the FTSE4Good Index, and The 100 Best Corporate Citizens by *CR Magazine*.

details of the model as well as the data used for the analysis. Section 3 presents the empirical results, followed by robustness checks. Lastly, I provide a summary of the findings and conclude the paper.

Data and Summary Statistics

Regression Specification

I use ordinary least squares (OLS) regressions to analyze the effect of CR performance on firm leverage. CR performance, on the other hand, is subject to endogeneity issues, as a firm's financial choices and CR activities could be jointly determined (e.g., Jiao, 2010). Therefore, I also apply instrumental variables (IV) analysis to address potential endogeneity of a firm's commitment to CR, using industry-median CR/environmental/social performance variables that do not affect leverage decisions directly (El Ghoul et al., 2011). I report the results of both OLS (in Table 21 using Equation 4 below) and IV (in Table 27 using Equation 4 and Equation 5 below) analyses separately. I control for firm characteristics and industry effects in the regressions as well. Using industry-median CR performance as my instrumental variable, I estimate the following system of equations using the IV model:

$$D_{it} = \alpha_1 + \beta CRP_{it} + \gamma_1 X_{it} + \delta_t + d_j + \epsilon_{1it} \tag{4}$$

$$CRP_{it} = \alpha_2 + \theta Z_{it} + \gamma_2 X_{it} + \delta_t + d_j + \epsilon_{2it} \tag{5}$$

In Equation 4, D_{it} is the leverage ratio of firm i in year t. α_1 is a constant; CRP_{it} is the overall CR performance score combining firm i's performance in environmental and social aspects of CR in year t. I use overall CR scores as well as the scores on environmental and social pillars of CR separately in the analysis. Hence, CRP_{it} is replaced by $Environment_{it}$ and $Social_{it}$ when environmental and social activities are considered, respectively. X_{it} are firm-level

control variables (detailed in Other variables section); δ_t are year dummies; d_j are industry dummies based on three-digit standard industry classification (SIC) codes; β and γ_1 are the estimated coefficients for the second stage; j, industry; i, firm; t, year.

In Equation 5, I treat CRP_{it} as an endogenous variable and estimate it with α_2, a constant; X_{it}, control variables; δ_t, year dummies; d_j, industry dummies; and Z_{it}, an instrumental variable. Industry-median CR performance is used to instrument firm CR performance (CRP) in the first stage and fitted values for the CR performance from the first-stage regression are used in the second-stage regressions in Equation 4. θ and γ_2 are the estimated coefficients of the first stage.

Regression Variables

Measuring a firm's CR performance. To measure the extent to which firms commit to CR, I use environmental and social performance scores provided by Thomson Reuters ASSET4 ESG database (ASSET4 ESG) (Thomson Reuters ASSET4 ESG, 2002-2012).[34][35] Using data collected only from publicly available resources (e.g., sustainability reports, NGO websites, annual reports, etc.), the ASSET4 ESG database provides annual sustainability performance information for 4,000+ companies worldwide. Its measure reflects CR performance of companies in the three broad pillars of CR: environmental, social, and corporate governance. The ASSET4 ESG database collects information on CR practices that spans 750+ ESG data points and 280+ key performance indicators (KPIs) that are then grouped into 18 categories of ESG engagement. These 18 categories of CR include information on a firm's practices/policies related to, for example, resource reduction, product innovation, emission reduction, employment quality, health and safety policies, diversity, community relations, shareholder rights, board structure, and compensation policy. The scores on each of these 18 categories range between 0 and 1, with high scores indicating stronger performance in a given category. The scores on each subcategory are then added to create an equally weighted aggregate CR performance score ranging from 0 to 100 as well as scores on each individual pillar.[36]

The overall CR performance score used in this study (CRP_{it}) is the total of environmental and social index

[34] http://im.thomsonreuters.com/solutions/content/asset4-esg/

[35] ESG stands for environmental, social, and corporate governance.

[36] Thomson Reuters ASSET4 ESG database is used in other studies as well (e.g., Cheng et al., 2014; Eccles et al., 2014; Rees & Rodionova, 2015; Stellner, Klein, & Zwergel, 2015).

scores. To overcome potential misspecification problems from using aggregate measures of CR performance due to variations in effects on managerial decisions across subcomponents of CR, which would largely be shadowed by aggregation (Hillman & Keim, 2001; Verwijmeren & Derwall, 2010), I redo the analysis using disaggregate measures of CR performance as well. Information on environmental factors includes, for example, energy use, water recycled, waste recycled, CO_2 emission levels, and energy efficiency policy; and on social factors includes employment policy, total training expenditures, human rights policy, total injury rate, trade union representation, and total donations.[37] This information is collected by 120+ analysts and then systematically converted into quantifiable measures to enable detailed analysis of this qualitative data.

Other variables. Firm leverage is taken at the end of the fiscal year, whereas CR-related variables and the control variables are taken at the beginning of the fiscal year. The control variables included in the analysis are drawn from earlier studies on capital structure.[38] I include the following variables in the analyses:

Regression Variables

- *Firm leverage*: The ratio of total short- and long-term debt to book value of total assets.
- *CR performance score*: The ASSET4 ESG database's evaluation of a firm's corporate responsibility performance. The variable is formed by taking the average of the firm's environmental and social scores out of a possible 100 points, a higher score indicating better corporate responsibility performance.
- *Environmental performance score*: The ASSET4 ESG's assessment of a firm's environmental performance on dimensions, including energy use, water recycled, waste recycled, CO_2 emission levels, and energy efficiency policy.
- *Social performance score*: The ASSET4 ESG's assessment of a firm's social performance on dimensions,

[37] See the Appendix for more detailed descriptions of the environmental and social dimensions of CR.
[38] e.g., Bae et al. (2011); Jiao (2010); Lipson and Mortal (2009); Rajan and Zingales (1995); Verwijmeren and Derwall (2010).

including employment policy, total training expenditures, human rights policy, total injury rate, trade union representation, and total donations.

- *Industry-median CR / Environmental / Social performance score (IV)*: Industry-median CR / Environmental / Social performance score in a given year where industry is defined by three-digit SIC code.
- *Corporate governance performance score*: The ASSET4 ESG's assessment of a firm's corporate governance performance on dimensions, including board structure/policy, compensation policy, board member diversity, voting rights, and stock option programs. This variable is used as a control variable in the analyses.
- *R&D expenses*: Research and development (R&D) expenses scaled by sales.
- *Selling expenses*: Selling, general, and administrative expense scaled by sales.
- *Tangible assets*: Net property, plant, and equipment divided by book value of total assets.
- *Firm size*: The natural log of total assets (in USD billions). As a robustness check, natural log of the number of employees and that of total sales are used to proxy size. Estimates using these alternative measures are consistent with the main results.
- *Market-to-book ratio*: The market value of equity plus book value of debt, all divided by book value of total assets. A dummy is created and set to 1 if firm market-to-book ratio is greater than median market-to-book ratio of the entire sample, and 0 otherwise. Following earlier studies of capital structure, it is included to control for growth opportunities and market mispricing. Firms with higher market-to-book ratios are also more likely to invest in CR.
- *Depreciation expense*: Depreciation and amortization expenses scaled by book value of total assets at the beginning of the fiscal year.
- *Dividend dummy*: A dummy variable that takes value 1 if a firm pays dividends in a given year, and 0 otherwise.
- *Profitability*: Operating income before depreciation divided by total book assets at the beginning of the fiscal year.

- *Financial slack*: The total of cash and short-term investments divided by total assets.
- *Asset growth*: Total book assets scaled by lagged total book assets minus one.
- *Earnings volatility*: Standard deviation of a firm's earnings before interest, taxes, depreciation and amortization (EBITDA) scaled by year-beginning total assets over the past 5 years.
- *Sin stocks*: A dummy variable that equals 1 if a firm is operating in one of the "sin industries" (Hong & Kacperczyk, 2009), and 0 otherwise. The most common type of social screening is avoiding alcohol, tobacco, or gambling industries, which are defined as sin industries. Companies operating in these industries are considered sinful, as the products/services they offer are against common societal norms. Extending Hong and Kacperczyk (2009), I identify four groups of such companies as those (or their subsidiaries) operating in alcohol (SIC 2100-2199), tobacco (SIC 2080-2085), gaming (NAICS 7132, 71312, 713210, 71329, 713290, 72112, and 721120), and weaponry industries (SIC 3480-3489, 3760-3769, 3795).
- *R&D dummy*: A dummy variable that takes the value of 1 if R&D expenses is missing for a firm, or 0 otherwise. As firms are not required to report their R&D expenditures, when missing, *R&D expenses* is set to 0 and following Himmelberg et al. (1999), *R&D dummy* is set to 1. This is to eliminate the possibility of any bias toward technology-oriented firms and to avoid a significant reduction in sample size (Woidtke, 2002).
- *Year dummies*: Included to control for year-specific factors in the data.
- *Industry dummies*: Based on a company's primary four-digit SIC code, unless stated otherwise. These dummies account for differences in accounting practices, business structure, industry-specific performance, and regulations across industries.

Firm and Industry Characteristics

- *Cash flow volatility*: The standard deviation of the firm's cash flows over the past 5 years, where free cash flow is [operating income before depreciation - interest expense - (income taxes - increase in deferred tax and investment tax credit) - dividends on preferred stocks - dividends on common stocks] scaled by total book assets. A dummy is created and set to 1 if firm cash flow volatility exceeds annual industry median where industry is defined by two-digit SIC code, and 0 otherwise.
- *Taxable income*: Earnings before interest and taxes (EBIT) scaled by total assets. A dummy for whether the firm has higher-than-median taxable income of the entire sample in a given year is set to 1, and 0 otherwise.
- *Total sales*: Firm total sales in year *t* is used to proxy the likelihood of financial distress (Bae et al., 2011).
- *EBIT*: Earnings before interest and taxes. Following Bae et al. (2011), I use the proportion of firms with a negative EBIT in a two-digit SIC industry in a given year to proxy financial distress. A dummy variable is created and set to 1 if an industry has lower proportion of financially distressed firms than overall median, and 0 otherwise.
- *R&D intensity dummy*: Research and development expenditures (R&D) scaled by total assets. A dummy is set to 1 for above-industry-median R&D intensity, and 0 otherwise (i.e., high vs. low asset specificity). Used as a proxy for alternative uses of assets.

The extent to which R&D expenditures present future investment opportunities or product uniqueness/reputation will indicate its relation to leverage, as firms producing unique products or concerned about their product reputation should have less debt (Titman, 1984). Selling expenses could also be considered a proxy for product uniqueness in that a firm producing a unique product will spend more on its advertisement. Such firms are also highly likely to require more specialized labor and unique suppliers and thus impose higher liquidation costs on these groups. Hence, I expect a firm making large discretionary expenditures such as R&D and selling expenses to have lower leverage to align incentives across its various internal and external stakeholders.

Tangible assets are easier to value than intangibles, thus lowering distress costs and limiting shareholders'

appropriation of assets and thus mitigating potential agency conflicts (Frank & Goyal, 2009). They could also be pledged as collateral for debt financing. Accordingly, I expect a positive relation between the level of tangible assets and firm leverage.

Firm size proxied by logarithm of total assets is expected to be positively associated with leverage, as these assets could be used as collateral for debt financing. To the extent that more assets represent the diversity of a firm's operations, firm asset size will also be associated with higher debt ratios. Larger firms also are less volatile and incur lower risk of bankruptcy, and thus are expected to hold higher debt (Frank & Goyal, 2009).

I expect a negative relation between growth opportunities proxied by market-to-book ratio and leverage ratio. There are a number of reasons to expect such relationship. First, the risk (and costs) of financial distress will be more severe for firms with higher growth prospects. Second, agency problems could also be more severe for firms with higher growth opportunities, in that riskier undertakings by managers of such firms could easily elevate conflicts in the alignment of incentives between lenders and shareholders (Myers, 1977). From the lenders' perspective, they would be less willing to invest in such firms pursuing risky investment projects due to difficulties in fully mitigating agency-related risks (Jensen & Meckling, 1976). All these would lead to lower use of debt (Jensen, 1986), which results in a negative association between leverage and growth opportunities. Higher leverage will also limit managerial flexibility when operating in high-growth business environments where flexibility and managerial discretion could be vital for survival and success.

Profitability should be evaluated with caution, as different theories of capital structure have conflicting predictions on its relation with leverage. Either-directional inferences between debt ratio and profitability could be based on several grounds. First, tax benefits of debt financing would be realized the most for firms with higher profits, implying a positive relation between leverage and profitability, as suggested by the standard trade-off theory. From the agency theory perspective (Jensen, 1986), debt could be utilized by principals as a tool to mitigate potential agency problems resulting from suboptimal, opportunistic managerial behavior driven by the availability of financial resources. Profitability, on the other hand, could also limit the use of external financing including debt, as proposed by the pecking order theory (Myers & Majluf, 1984). This implies lower leverage for more profitable firms. Empirical support for this hypothesized negative relation between leverage ratio and profitability is provided by Fama and French (2002).

Considering the variety of opinions, such relation is more of an empirical question, and I do not have any priors on the direction of the relationship.

I expect firms that pay dividends to hold lower debt, as these firms are usually less financially constrained. In a similar vein, I expect firms with higher financial slack resources to be less constrained and thus rely less on debt, according to the predictions of the pecking order theory. Hence, a negative relation between the level of slack resources and leverage ratio is expected. Whereas the traditional trade-off theory predicts lower leverage for growing firms as growth elevates financial distress costs along with agency problems between shareholders and debt holders, the pecking order theory suggests more use of debt for such firms to finance investments. In line with the latter, I expect firms with higher asset growth rates to have higher debt ratio. Non-debt tax shields including depreciation expense mitigate the interest tax benefits of debt, and thus should lead to lower leverage. Volatility in earnings poses financial risks to firms and reduces potential tax benefits from debt; hence, it should lead to lower leverage as well. In contrast, according to pecking order theory, earnings volatility could also exacerbate adverse selection problems that would lead to a preference for debt over equity, given the need to access capital markets for external financing. As a result of negative social screening, firms operating in socially controversial industries (sin stocks) such as alcohol, tobacco, and gambling maintain lower leverage (Hong & Kacperczyk, 2009). I expect sin industry firms in the sample to exhibit similar capital structure as well, and predict a negative association between sin industry membership and leverage.

Summary Statistics

Table 19 provides the summary statistics for firm leverage, CR performance variables, and other firm characteristics for the sample firms. The sample comprises all firms covered by the Thomson Reuters ASSET4 ESG database over the years 2002-2012, conditional upon availability of financial and accounting data. I obtain annual firm-level financial and accounting data from the Compustat North America database (Standard & Poor's/Compustat, 2002-2013). I match the data on environmental and social performance with that on various firm characteristics collected from Compustat. I truncate outliers for all control variables at the top and bottom 1 percentiles to eliminate the potential influence of extreme observations, though the results do not change qualitatively when I include these observations. Financial firms (two-digit SIC codes 60-69) are excluded due to their fundamentally different business models and

capital structures. These preliminary screenings left us with a final sample of 4,741 firm-year observations.

[Table 19 about here.]

Panel A of Table 19 shows leverage statistics. Debt (both short- and long-term scaled by total assets) accounts for around one fifth to one quarter of total assets for the sample of firms. The average and median levels of book leverage for these firms are 23.6% and 21.8%, respectively, indicating considerable use of debt. Panel B shows the summary statistics for aggregate and disaggregate CR performance scores. CR performance score has a mean and median of 46.439 and 38.835, respectively. Among the CR pillars, environment has the lowest mean and median scores (44.646 and 32.100, respectively), followed by social (48.231 and 44.250, respectively). Social performance also has lower standard deviation (28.850), indicating more uniform commitment across firms to this attribute. Environment, which is arguably the more popular of the two components, exhibits higher variation, due potentially to considerable variation across industries in its sub-features (e.g., carbon emissions, waste reduction, water management, etc.).

Panel C presents summary statistics for control variables. The sample of firms' average profitability, market-to-book ratio, size, R&D expenditures, and tangible assets are 17.5%, 1.762, 15.997, 4.6%, and 27.2%, respectively. Finally, these firms hold, on average, 14.7% financial slack resources, spend around 23.9% of sales revenue for selling expenses, experience around 4.2% volatility in earnings, and have relatively good corporate governance (a median of 78.290/100).

In Table 20, I divide the sample into three components, designated as firm-year observations where overall CR score is in the top 30%, mid 40%, or bottom 30% of the three-digit SIC industry median CR performance in a given year. I then compare the firm characteristics of the bottom and top CR performance groups. Columns (1)-(2), (3)-(4), and (5)-(6) report the number of observations and means of the firm characteristics in cases where CR is in the bottom, mid, and top tertile of the industry medians, respectively. The last two columns, (7) and (8), present the coefficients and t-statistics for the difference in firm characteristics between firms with bottom and top CR performances in the sample; i.e., the difference between columns (2) and (6). These statistics show that firms with top CR performance have slightly lower leverage than those with bottom CR performance. The average firm leverage for top and bottom CR firms are 23.4% and 24.7%, respectively, resulting in a weakly significant average leverage difference of 1.3% (at the 10% level)

between these two groups of firms. These numbers provide no evidence of a meaningful negative relation between the extent of a firm's CR engagement and its leverage ratio.

[Table 20 about here.]

The R&D spendings of superior CR firms are on par with those of their underperforming counterparts. I also do not observe any material difference in the level of tangible asset and profitability between the two groups of firms. The top performers, on the other hand, incur significantly lower selling expenses (a statistically significant difference of 3.4% at the 1% level). High performers are also, on average, larger than poor performers. The average difference in total assets between the two groups of firms is $29,234 million and is highly statistically significant (at the 1% level). Low performers tend to have better growth prospects (proxied by market-to-book ratio) than top performers. The difference in the market-to-book ratios of the two groups is 27.4% and is significant at the 1% level. Similarly, firms with higher CR performance show lower asset growth than their low-performing counterparts. Whereas the former experience, on average, 8.7% annual growth in assets, the latter show a remarkable 13.9%, indicating a 5.2% difference between the two groups of firms. Top performers also incur lower depreciation expenses (4.3% of book assets, on average) than low scorers (4.9%, on average).

I observe significant difference in the dividend-paying behavior of firms between the two groups. In particular, top scorers are more likely to pay dividends than their low-performing counterparts. I also find that low performers hold significantly higher financial slack resources than high performers and do not seem to use them for CR investments. The average level of cash and short-term investments for firms with low and high overall CR performance is 16.1% and 13.5% of total assets, respectively. The difference of around 2.6% is statistically significant at the 1% level. Firms in the top 30% of the CR scale exhibit lower earnings volatility than the bottom 30% group. The difference is 2.2% and is statistically significant to distinguish between the two groups. Regarding their membership in socially controversial industries, I do not observe a major difference between high and low performers.

These statistics highlight significant variations in firm characteristics with the extent of firms' commitment to CR attributes and call for further analysis of the relation between CR attributes and capital structure decisions. Of particular interest, I observe no meaningful difference in leverage between high and low performers. Top-scoring firms

commonly exhibit strong commitment to both environmental and social reputation, which grants them a higher ranking than their more selective counterparts. Hence, I can interpret these preliminary results in favor of the moderating role of a firm's reputation as an environmentally conscious firm on the proposed negative link between its stakeholder relations and leverage choice.

Results

Leverage and CR Performance

In this section, I employ the ordinary least squares (OLS) regression method to test how a firm's commitment to environmental and social responsibility affects its leverage. I use leverage ratio, defined as short- and long-term debt divided by total book assets, as the main proxy for firm leverage. To explain leverage, I use environmental and social performance scores, a set of firm leverage determinants, and year and industry fixed effects. I report *p*-values based on heteroskedasticity-consistent standard errors.[39]

[Table 21 about here.]

Table 21 presents estimates of the OLS regressions that explain the observed firm leverage. Model (1) shows the results for the baseline regression model that includes all of the firm characteristics, excluding those related to CR performance. The results suggest that larger firms and firms with higher tangible assets are likely to hold higher debt. I obtain significant and positive coefficients on the market-to-book ratio and depreciation expenses, indicating that firms with high growth opportunities and higher depreciation expenses tend to use more debt. On the other hand, dividend-paying firms have lower leverage, in line with my expectation that such firms are less financially constrained and, thus, rely less on debt financing. Similarly, firms that are profitable and carry more financial slack resources also are less leveraged in that they are less dependent on external financing, as suggested by the pecking order theory. Firms with higher earnings volatility are also associated with lower leverage, due, potentially, to lower tax benefits from debt for such firms. Better corporate governance is also associated with lower use of debt. Lastly, in line with Hong and

[39] Petersen (2009) suggests that clustering standard errors on multiple dimensions provides less biased estimates of confidence intervals. Therefore, in unreported results, I estimate the regressions using standard errors clustered by (1) firm, (2) both firm and year, and (3) both industry and year. The results remain unchanged.

Kacperczyk (2009), firms operating in socially controversial industries are associated with higher leverage, as indicated by the positive coefficient (coefficient significant at the 1% level) on the sin industry indicator variable. I do not evidence any significant association between leverage and R&D, selling expenses, and asset growth.[40]

Model (2) integrates into the baseline model the aggregate CR performance variable and examines the extent to which a firm's commitment to environmental and social stewardship relates to its leverage. I observe the relation between CR performance and leverage to be negative yet statistically insignificant. One explanation is that for firms that utilize multidimensional CR strategies, features of CR that lead to lower leverage could be moderated by those that incentivize the use of debt, resulting in an overall insignificant influence on firm leverage. Consequently, I analyze the two main aspects of CR activities, environmental and social responsibility, in detail in Model (3). Regarding the control variables in Model (2), I mostly observe a similar picture to that in Model (1). Larger firms, sin industry firms, and those with higher levels of tangible assets and better growth opportunities are more leveraged, while dividend-paying firms, profitable firms, and those with high slack resources and volatile earnings are associated with lower leverage.

In Model (3), I substitute overall CR performance score with its two main components, environmental and social performance scores. These findings underscore the significant impact of both features of CR on leverage. In particular, firms that score high on environment are associated with higher leverage (coefficient significant at the 5% level), *ceteris paribus*, consistent with Sharfman and Fernando (2008), who document a shift from equity to debt financing induced by better environmental risk management practices. In contrast, I find that firms with better social performance maintain significantly lower leverage (coefficient significant at the 1% level), again consistent with some other studies in the literature on the leverage impact of a firm's commitment to achieve or maintain its social identity. The coefficients on these two subcomponents of CR together explain the weak negative coefficient on the CR performance score in Model (2). Other parameter estimates in Model (3) are also comparable to those in Models (1) and (2). Firms with more tangible assets and that are larger hold higher debt. Market-to-book ratio and sin industry membership also relate positively to debt ratio. The relation between leverage and profitability, act of paying dividends, level of

[40]My finding of an insignificant R&D effect on leverage is contrary to Titman and Wessels (1988), who suggest that features such as growth opportunities and product uniqueness could be captured by this particular variable. They note that R&D expenses (and selling expenses as well) proxy for growth prospects and product reputation in the absence of market-to-book ratio. Accordingly, I redo the analysis by leaving out the market-to-book ratio in the regressions in Models (1)-(3), where the effects of these factors on leverage are insignificant. In unreported results, I fail to find supporting evidence for their argument.

financial slack, and earnings volatility are all highly significant and negative. I observe an insignificantly negative relation between a firm's debt ratio and R&D and selling expenses, and again an insignificantly positive relation between leverage and asset growth.

In Models (4)-(5), I perform industry fixed-effect regressions to account for potential across-industry variations that could influence the relation between CR performance and leverage. The intuition is that some particular industry firms, for example energy companies, could spend more to manage their impact on the environment than their counterparts in other industries, or technology companies could be more socially oriented than non-technology firms. The across-industry variation in firms' CR practices will have implications for their capital structure decisions through various channels, as outlined in other studies; e.g., environmental risk management (Sharfman & Fernando, 2008), reputation (Titman & Wessels, 1988), employee relations (Verwijmeren & Derwall, 2010), and union policies (Matsa, 2010; Perotti & Spier, 1993). In Models (4) and (5), I use industry-indicator variables, defined based on the first three digits of a firm's SIC code (not reported). Hence, the coefficients on the CR-related variables will capture the within-industry variations in the relation between each of these variables and leverage.

Model (4) shows the results for the analysis of the extent to which within-industry variation in overall CR performance explains the variation in leverage ratio. These results present a similar picture as in Model (2) for almost all of the control variables except for depreciation expense, dividend dummy, asset growth, and corporate governance. Specifically, the coefficient on the depreciation expense turns slightly negative, while that on dividend dummy turns insignificantly positive. The inclusion of CR performance in Model (4) improves the significance of asset growth (the coefficient becomes significant at the 1% level), the explanation to which resides in the pecking order theory that suggests the use of debt to finance growth in investments. Yet I continue to find an insignificantly negative coefficient on the CR variable. Overall, these results once again indicate no major leverage impact of within-industry variation in the overall CR engagement of firms.

Again, I further investigate the findings in Model (4) by disaggregating the CR performance variable into its subcomponents, environmental and social. The results are presented in Model (5). This model presents whether the previously documented relations in Model (3) between leverage and disaggregated measures of CR hold when I use industry fixed-effect regressions. Consistent with the results in Model (3), environmental and social variables are

both significant (at the 5% level), and are positive and negative, respectively. Compared with Model (3), the effect of environmental performance on leverage is mostly preserved, while that of social performance is reduced almost by half, bringing the combined effect of environmental and social variables down to almost zero.

Using a similar approach, in Models (6) and (7), I examine whether cross-industry variations in firms' environmental and social profiles have any influence on leverage ratio. To capture the unique impact of different industries, I first calculate industry averages of debt ratio, all CR-related variables, and the firm characteristics over the entire sample period for all firms that belong to the same industry group, defined based on a firm's three-digit SIC code. Then, I perform cross-sectional regression analysis to estimate separately the impact of industry-average CR performance and its subfeatures on leverage ratio, controlling for all standard firm-level characteristics from earlier models. Surprisingly, in Model (6), I find a significantly negative (at the 5% level) relation between leverage and overall CR performance. The effect of CR performance on leverage here is also more pronounced, as presented by a greater coefficient. Similarly, environmental and social performance scores preserve their significantly positive and negative relations with debt ratio, respectively, as shown in Model (7). These results indicate that cross-industry variations in CR performance and its subcomponents contribute significantly to the variations in debt ratios across industries.

Collectively, these results explain how an aggregate CR performance variable blends the conflicting effects of its components. More importantly, detailed analysis of these components provides us a clearer view of the unique contributions of each of these features. The influences of environmental and social practices seem to be robust across models and appear to be driving the overall CR profile of the company and its relation with leverage ratio. The results also identify cross-industry variations as an important determinant of leverage ratio, which outweigh within-industry variations in CR performance in affecting leverage ratios. Lastly, the gap between the effects of environmental and social performance almost disappears when considering within-industry variation in leverage due to a weakening in the effect of social performance.

Analysis of Alternative Mechanisms

In this subsection, I try to identify where and how changes in incentives for particular CR policies lead to variations in firms' leverage decisions. Companies usually exercise multiple CR-related practices simultaneously, and

given their different effects on leverage, the overall impact is subject to major variations depending on the particular motivation that drives firm behavior. This has implications for capital structure and calls for further examination of whether the above findings are consistent across a variety of models, each of which represents a potential point of divergence from the observed relations.

First, I examine the extent to which different features of CR performance impact a firm's leverage when the firm shows above-industry performance in all of these features of CR. I partition the sample into two components: firms with above- and below-industry-median CR performance. The former includes the focus group of firms for which high CR performance is likely a result of high performance in multiple aspects of CR engagement. Therefore, the coefficient on the CR performance variable in these regressions will reflect the effect of the dominant feature of CR.

Table 22 reports the results of these regressions. In columns (1) and (2), I use individual CR component scores as the key CR variables to estimate the effects of each component on leverage for above- and below-industry-median CR performance groups, respectively. Column (1) shows that, for the former group of firms, environmental performance dominates social performance with a highly significant (at the 1% level) and positive impact on leverage. Surprisingly, I do not observe any meaningful association between leverage and social performance for the same group. In contrast, for the below-industry-median group, I observe that the coefficient on the social variable turns negative and significant at the 1% level, while that on the environment loses its significance and turns slightly negative. These findings are further supported by the results in columns (3) and (4). In column (3), I substitute disaggregate measures with the composite CR performance measure to test its relation with leverage. Consistent with the above results, I find that the coefficient estimate on the aggregate CR variable for the high-performing group is positive, attesting to a positive overall impact driven solely by the highly significant and positive impact of the environmental performance for this particular sample of firms. Conversely, but as expected, the aggregate impact of CR score on leverage is negative and highly significant at the 1% level for firms with below-industry-median CR performance. Furthermore, in each of these subsamples, I have almost equal numbers of firms with superior environmental or social performances. This shows that, particularly for the high-performing group, the observed leverage impact is not driven by a prioritization of commitments in these domains. Overall, these results suggest that the impact on leverage of a firm's reputation for good social relations is not a common phenomenon, particularly for those that strive to build and maintain their reputation as good corporate citizens in the

eyes of their multiple stakeholders.

[Table 22 about here.]

Second, the trade-off theory predicts a negative relation between cash flow volatility and use of debt in that firms with volatile cash flows are more likely to experience problems in fulfilling their requirements from debt financing. This uncertainty in future cash flows will also prevent firms from reaping the most tax benefits of debt financing. One might reasonably expect that firms that attach a greater value to their reputation for good stakeholder relations will use even less debt, with increasing uncertainty in cash flows, to credibly commit themselves to fulfill their obligations to stakeholders. Good environmental risk management, on the other hand, could reduce the uncertainty in a firm's future cash flows through avoiding potential regulatory issues resulting from environmental liabilities (Barth & McNichols, 1994). This implies that firms that adopt better environmental risk management practices can use more debt financing than firms with poor environmental performance. Moreover, this implied positive relation will be more pronounced for firms with higher uncertainty inherent in their cash flows. I test these predictions by dividing the sample into two groups, firms with higher and lower cash flow volatility, and estimating the regressions using each of these subsamples separately. I estimate cash flow volatility as the standard deviation of the cash flows of a firm over the past 5 years. I then assign all firms into two groups: those with above- or below-industry-median volatility in cash flows.

[Table 23 about here.]

Table 23 presents the results of the analysis. I find that the coefficient on the overall CR performance is significantly positive (at the 1% level) for firms with high cash flow volatility, as shown in column (1). In contrast, the relation between aggregate CR performance and leverage is negative yet insignificant for the sample of firms with low cash flow volatility. The test of the difference in coefficients on CR performance variable between these two subgroups is also significant (at the 5% level), supporting my prediction that the leverage impact of environmental risk management practices dominates that of social performance in regard to the reduced uncertainty in a firm's future activities. I support this argument with the analysis of each subcomponent in columns (3) and (4). The significant and positive relation between leverage ratio and CR performance in column (1) is driven by the highly significant (at the 1% level) and positive impact of environmental performance, shown in column (3). Social performance, on the other hand,

has no significant relation with leverage for the same group. In addition, the number of superior-environmental- or superior-social-performing firms are mostly balanced in all of these samples. These results support my predictions and suggest that risk reduction benefits of environmental risk management provide considerable incentives for firms with greater uncertainty in their cash flows, resulting in environmental activities outweighing stakeholder concerns in determining capital structure.

Finally, the trade-off theory of capital structure also emphasizes the balance between tax benefits and financial distress costs of debt. Better environmental risk management improves perceived riskiness of the firm and, thereby, allows for higher leverage. For a given level of risk, increased leverage, in turn, increases the amount of income that could be shielded from taxation. This implies an indirect positive relation between tax advantages of a firm and its environmental performance, as environmental activities reduce both immediate and future risks of a firm and improve its overall perceived riskiness. Thus, I predict that this positive link between environmental performance and leverage will be stronger for firms that have higher amounts of taxable income for which the extent of tax shield will be more crucial.

[Table 24 about here.]

I estimate taxable income by the level of earnings before interest and taxes scaled by total assets of a firm in a given year. I use overall sample median level of taxable income in a given year as the cutoff to divide the firms into two categories: those with high and low taxable income. I examine both of these subsamples, predicting a more pronounced positive association between leverage and environmental performance for firms with higher levels of taxable income. The results of these analyses are presented in Table 24. The coefficient estimates on the CR performance variable are positive for both groups of firms, while the test of the difference in these coefficients fails to reject the null of equality between firms with higher taxable income and those with lower taxable income. On the other hand, the analysis of the coefficients on environmental and social performance, shown in columns (3)-(4), support my predictions and indicate a stronger influence of environment on leverage for the high and low taxable income subsamples, although the effect is stronger in the latter (the coefficients are significant at the 5% and 1% levels, respectively). I document no major relation between leverage ratio and social performance for either group of firms.

Analysis of the Results Using Alternative Models of Capital Structure

In this section, I validate the results in Table 21 using alternative models from the literature on capital structure. I focus particularly on the stakeholder theory of capital structure because the extent to which the observed negative relation between CR performance score and leverage is driven by a firm's treatment of its stakeholders (i.e., social performance) allows us to test some predictions of this theory. I start with identifying the conditions under which a firm's concerns regarding the alignment of incentives with its stakeholders receive higher priority and, thereby, shape its CR engagement policies and determine capital structure. For example, leverage and the associated high risks of default could prevent firms from honoring their implicit contracts with their stakeholders (Maksimovic & Titman, 1991), resulting in these stakeholders refraining from investing in such firms. Thus, firms that commit themselves to better stakeholder relations should limit their use of debt. A positive environmental posture can provide some relief to potentially distressed firms, as firms that are committed to environmental management as a risk management strategy will have lower perceived risk (Bouslah et al., 2013; Leland, 1998) and access to lower cost of capital (Chava, 2014; El Ghoul et al., 2011; Sharfman & Fernando, 2008), and thus can maintain higher leverage. Therefore, how a strong environmental profile and orientation to social interactions together will influence leverage for firms that are more likely to experience financial distress is an empirical question that I will examine first.

[Table 25 about here.]

I test my argument in two ways. Following Bae et al. (2011), I use firm size (total sales) and proportion of firms with negative EBIT in a two-digit SIC industry in a given year as the proxies for the likelihood of financial distress. Table 25 presents the regression results of these analyses. The results in columns (1)-(4) and (5)-(8) are obtained using firm size and the proportion of negative EBIT firms in an industry in a given year, respectively. In even-numbered columns, I also provide regression results for the rest of the sample, containing less financially distressed firms and industries.

The results in column (1) are consistent with my priors, albeit indicating only a weak negative relation between composite CR score and leverage. Apparently, this effect is driven by a stronger negative impact of social performance for the financially distressed sample in column (3). In line with the stakeholder theory, I expect the negative relation

to be more pronounced for firms with tighter financing constraints (column 3) then their less financially constrained counterparts (column 4) and, thus, to reject the null of no significant difference between the two coefficients. The results of these tests attest to a stronger leverage impact of social engagement for financially distressed firms as well, consistent with the predictions of Maksimovic and Titman (1991). Whereas environmental management does not seem to moderate the incentives to adjust leverage for firms with reputational capital for good stakeholder relations at stake, a positive environmental profile still allows even such firms to use significantly more debt.

However, the alternative financial distress proxy provides a quite different picture. As shown in columns (5)-(8), in industries with higher proportions of financially distressed firms, a strong positive impact of a firm's environmental profile outweighs the negative yet not as strong impact of social performance. I also do not evidence any difference in the coefficients on the social engagement variable between the two samples. Collectively, these results do not provide conclusive evidence of a stronger leverage impact of social engagement for financially distressed firms, as predicted by the stakeholder theory of capital structure. Additionally, the tests of whether environmental risk management alters the way stakeholder reputation considerations determine firms' leverage decisions do not provide satisfactory evidence along these lines. Regarding the nondistressed firm sample in columns (2) and (4), the results yield a completely different story and contradict the argument that leverage and social performance are negatively associated. In particular, I find an overall positive and highly significant coefficient (at the 1% level) on aggregate CR variable in column (2), again contrary to the predictions of the stakeholder theory of capital structure. The details in column (4) show that social performance loses its significance, while environmental practices dominate the overall impact on leverage ratio of CR practices.

Second, I test an alternative prediction of the Maksimovic and Titman (1991) model. The extent of the alternative uses of a firm's assets will determine their reputational value as unique assets. Consistent with the Maksimovic and Titman (1991) model, firms that offer unique products/services establish closer ties with and rely more on the well-being of their key stakeholders, such as employees, customers, and suppliers. From the stakeholders' perspective, they are also more concerned about the financial well-being of their organizations due to the higher costs of bankruptcy they incur in case of a liquidation. Thus, they will require higher compensation for increased bankruptcy risk, to which a firm will obey or choose to lower its liquidation risk by decreasing leverage as a commitment mechanism.

The latter implies a stronger negative relation between firm leverage and its commitment to maintain its reputation for good stakeholder relations, especially for firms with firm-specific assets or producing unique products, i.e., lack of alternative uses (Kale & Shahrur, 2007; Titman & Wessels, 1988). Following Bae et al. (2011), I proxy the extent of the alternative uses of assets (asset specificity) with the ratio of the level of a firm's R&D expenditures to its total assets (R&D intensity). I then divide the sample of firms into two categories, by the industry median asset specificity for each year, and assign firms to high and low asset specificity groups based on the relative value of their asset specificity score to the industry-year median.

[Table 26 about here.]

The results are presented in Table 26. The coefficient on the aggregate CR performance variable in column (1) (high asset specificity) is negative yet insignificant, while that in column (2) (low asset specificity) is positive and significant at the 5% level. Consistent with the predictions of Maksimovic and Titman (1991), social performance has a significantly negative coefficient and solely determines the relation between leverage and CR performance, presented in column (3). In contrast, environmental practices solely determine firm leverage for low-asset-specificity firms, while social performance loses its significance for the same group, as column (4) presents. However, I fail to reject the null of no difference in coefficients on social performance variable across the two subgroups, contrary to the predictions of the Maksimovic and Titman (1991) model. The composition of each group reflects almost equal balance of firms with superior environmental and social performance. Overall, these results do not provide enough support for the predictions of the Maksimovic and Titman (1991) model. On the other hand, the results once again point to the significant role of environmental risk management on firm leverage even in the presence of stakeholder concerns.

Robustness Checks

Endogeneity. Extant research treats CR as an endogenous variable (e.g., Bae et al., 2011; Jiao, 2010). Endogeneity problems could be due to a number of reasons. For example, omitted variable bias arises when a potentially relevant variable is excluded from the structural equation. If this variable determines both a firm's leverage and its propensity to engage in responsible practices, it will result in problems in the interpretations of the parameter estimates

obtained using the OLS method. This is far from an uncommon concern in the studies on CR, as numerous factors are tested in the relevant literature for their influence on CR performance. Another potential endogeneity problem could be driven by reverse causality. My implicit assumption in the structural equation is a unidirectional explanatory relationship from CR performance to leverage. Yet managerial decisions to engage in responsible practices may also be driven by a firm's leverage. Availability of financial resources, for example, is an important factor in choosing a firm's level of CR engagement (Waddock & Graves, 1997). Debt could also be utilized as a managerial control mechanism to institute managerial efficiency and mitigate opportunistic behavior (Hanka, 1998; Jensen, 1986). If CR activities are considered value-decreasing and driven by managers for private benefits, leverage will also result in a reduction in resources (and efforts) allocated to CR projects.[41] Thus, capital structure choice may be a determinant of a firm's CR commitment, suggesting a reverse-causal relation that could not be captured by a naive OLS framework.

To address these potential endogeneity concerns and test the unique, uncontaminated contribution of the level of a firm's environmental and social profile to its capital structure, I employ an instrumental variables approach in a two-stage least squares (2SLS) framework. I use industry-median CR performance scores as the instruments in these regressions. The motivation is twofold: first, I do not expect any significant, meaningful influence of industry-standard CR performance on firm leverage beyond its impact through a firm's current CR policy, and thus the proposed instrumental variable satisfies the exclusion restriction. Moreover, using an industry-level CR variable as an instrument further limits potential influence of unobserved firm-level characteristics that are also correlated with firm leverage. Second, CR climate in an industry has considerable influence on its members' CR policies. Considering CR as a source of competitive advantage (Greening & Turban, 2000; McWilliams, Siegel, & Wright, 2006), firms would not want to fall behind their industry peers on their CR practices. This induces firms to align their firm-level CR policies with the industry standards, and thus satisfies the relevancy requirement for the instrumental variable.

[Table 27 about here.]

Table 27 shows the results of these regressions. A number of noteworthy features are present. First, diagnostic checks indicate that the instruments are valid. I find that the Kleibergen and Paap (2006) tests reject the null hypothesis

[41] See Barnea and Rubin (2010) for further discussion on how firm management may use CR engagement as a tool for private benefits and its relation to firm leverage.

of underidentification. The corresponding test statistics and *p*-values are provided in Table 27. I further check to see if the instruments are actually strong instruments and perform well. For this purpose, I provide F-statistics from the first-stage regressions. These statistics are all greater than the 10 cutoff suggested by Stock and Yogo (2005) and validate the strength of the instruments.

In Models (1) and (2), I test the relation between leverage and overall CR performance. I use industry-median CR performance, defined by a firm's three-digit SIC industry group in a given year. Model (1) shows the first-stage regression results. I observe an adjusted R^2 of 0.644, indicating that the industry-level instrument along with control variables predict firm-level CR performance effectively. In Model (2), I use predicted values from the first-stage regression to replace actual CR performance and continue to document an insignificant relation between CR performance of a firm and its leverage ratio, consistent with the earlier findings in Table 21.

Models (3)-(5) show the results for the IV regressions using industry-level instruments for environmental and social dimensions. These instruments are calculated using the same logic as that behind calculating the instrument for the aggregate CR performance variable. The 2SLS estimators are obtained using all the instruments. First-stage regression results are presented in Models (3) and (4) for environmental and social performances, respectively. Again, the adjusted R^2 values for the regression models are considerably high and the F-statistics are above the 10 threshold as well, attesting to the validity of the instrumental variables. I find that the coefficients on the industry-level instrumental variables are statistically significant. Model (5) presents the results for the second-stage regressions. In this structural model, I substitute environmental and social performance variables with the predicted values I obtained from the regressions in (3) and (4). I keep finding similar coefficients on the variables of interest as those in Table 21. The observed relation between leverage and environment is positive and significant at the 1% level. The estimated coefficient on social performance is still negative and significant (at the 1% level). Overall, these results uniformly support the earlier findings.

Causality. In this section, I delve deeper into the causal relationship between leverage and the extent of a firm's environmental and social commitments. In particular, I analyze whether the lags of firm leverage determine a firm's engagement with the environment and other nonfinancial stakeholders or whether a firm's relationship with

such surrounding forces influences its financial leverage decisions. This will help us outlay the direction of causation between corporate financing decisions and CR attributes and thus identify potential reverse-causality issues.

The original model predicts that the extent of a firm's commitment to environmental and social issues influences its capital structure, while several studies predict the opposite. As suggested by Waddock and Graves (1997), although improved CR performance can lead to better stakeholder engagement and higher financial performance (good management hypothesis), better financial performance and lower financial constraints can also lead to higher CR investment (slack resource hypothesis). The procedure I use in this paper focuses on the lead-lag relationship rather than the usual notion of causation. A change in the CR attributes is said to influence a change in leverage if, given the lagged values of a change in leverage, the lagged values of a change in CR variables are jointly statistically significant and predict the change in leverage. As mentioned above, an influence in the opposite direction is equally possible, according to the slack resources view. In that case, the direction of causality runs in the opposite way and a change in firm leverage is said to influence a change in CR engagement if, given the lagged values of a change in CR attributes, the lagged values of a change in leverage ratio are jointly statistically significant and predict the change in a firm's commitment to CR.

I estimate the following regression models and obtain coefficient estimates for the causality tests:

$$\begin{aligned} D_{it} =& \alpha_1 + \lambda_{11} D_{it-1} + \lambda_{12} D_{it-2} + \lambda_{13} D_{it-3} \\ &+ \theta_{11} CRP_{it-1} + \theta_{12} CRP_{it-2} + \theta_{13} CRP_{it-3} + \phi_1 X_{it} + \nu_{1it} \end{aligned} \tag{6}$$

$$\begin{aligned} CRP_{it} =& \alpha_2 + \lambda_{21} CRP_{it-1} + \lambda_{22} CRP_{it-2} + \lambda_{23} CRP_{it-3} \\ &+ \theta_{21} D_{it-1} + \theta_{22} D_{it-2} + \theta_{23} D_{it-3} + \phi_2 X_{it} + \nu_{2it} \end{aligned} \tag{7}$$

In Equation 6 and Equation 7, D_{it} is the change in leverage ratio of firm i from year $t-1$ to t. α is a constant; CRP_{it} is the change in a firm's aggregate CR or disaggregated environmental or social performance score from year $t-1$ to t. X_{it} is the change in firm-level control variables as explained above; λ and θ are the estimated first and second regression coefficients that are used for causality analysis; i, firm; t, year. For each equation above, I test for the joint significance of the coefficients of interest, hypothesizing that the variables of interest do not influence the dependent variable. For example, in Equation 6, I test for the joint significance of the set of coefficients θ_{11}, θ_{12}, and θ_{13}, failing to reject the null hypothesis, which would suggest that the particular CR attribute does not influence leverage ratio.

[Table 28 about here.]

The results of the causality tests are reported in Table 28. Consistent with the main findings above, I document a significant causal effect of past changes in environmental performance on firm leverage. The causal effect of past changes in social performance on current change in leverage, however, is significant only at 10% indicating a weak influence on leverage decisions. I fail to document any material impact of lagged changes in leverage ratio on any of the variables of CR engagement. There is also no causal relationship between aggregate CR performance and leverage. Collectively, these results attest to the validity of my model and suggest that the direction of the causal relationship between financial leverage decisions and CR policies is consistent with the good management hypothesis.

In unreported results, I also follow Love and Zicchino (2006) and transform all regression variables to account for any heterogeneity in the cross-section units and time effects in the data and perform the Granger causality test (Granger, 1969). Regarding the former, I use forward mean-differencing; that is, for each observation I calculate the forward mean of all future observations for the same firm and subtract this average from the corresponding observation to remove the fixed effects in the data. Regarding the latter, I calculate the annual mean for each firm-year observation and subtract it again from the corresponding observation to eliminate the influence of time effects in the data. The transformed variables are then used to implement the Granger causality tests. I obtain qualitatively similar results.

Conclusion

Despite a well-developed theoretical background and the vast empirical research on CR, there is lack of conclusive, direct evidence to explain how a firm's broad CR policy affects its capital structure decisions. In this paper, I attempt to shed some light on one particular aspect of this issue, namely the effect on corporate financing decisions of a firm's environmental orientation and its (social) relationship with other nonfinancial stakeholders, including customers, suppliers, employees, and communities. Environmental practices have serious implications for the solvency of firms and their credit risks. Reducing exposure to legal, reputational, and regulatory risks, a proactive environmental management approach results in better access to capital, improves debt capacity, and reduces cost of capital, all of which translate into a tendency to use more debt (R. Bauer & Hann, 2010; Chava, 2014; Cheng et al., 2014; Sharfman & Fernando, 2008). The results uniformly support this argument and document the unique role that environmental performance plays on firm leverage.

This study also complements existing work on how stakeholder relations of a firm affect its capital structure decisions. As first pointed out by Titman (1984), liquidation risk and costs associated with it for the stakeholders determine their relation-specific investments in a firm. Several studies lend support to this argument. The results of these studies suggest firms that implement stakeholder-friendly policies maintain lower leverage to reduce the risk of insolvency and thus show their commitment to their stakeholders' concerns, encouraging them for firm-specific investments. I argue that environmental risk management activities can moderate this relationship by mitigating default risk and improving a firm's reputation for good stakeholder treatment. I test this prediction in three ways. First, using firms that stand out as both environmental and social stewards, I show that the leverage effect of environmental performance persists, while that of stakeholder engagement disappears. Second, I document that environmental management solely contributes to capital structure where its expected benefits surpass costs. Lastly, environmental risk management preserves its impact on leverage decisions even when the incentive for firms to provide a strong commitment to honor implicit contracts with stakeholders is paramount, although the effect on capital structure of the latter is stronger.

To the best of my knowledge, these results provide the first direct evidence for the main and moderating roles of environmental risk management on corporate financing decisions. The results further suggest that researchers

should distinguish between environmental activities and social engagement, and examine them together to determine whether variations in leverage ratios should be attributed to social or environmental dimensions. Though examining these two pillars of a firm's broad CR strategy in isolation might be interesting, it is equally, if not more, important to examine them together to understand how they interact with each other, to weigh their relative importance, and to build a broader picture of how management balances between the conflicting incentives to implement the optimal firm value-maximizing policy.

Table 19: Descriptive Statistics

	N	Mean	Median	St.Dev.
Panel A: Dependent variable				
Firm leverage	4,741	0.236	0.218	0.182
Panel B: CR variables				
CR performance	4,741	46.439	38.835	28.555
Environmental	4,741	44.646	32.100	31.741
Social	4,741	48.231	44.250	28.850
Panel C: Control variables				
R&D expense	4,741	0.046	0.004	0.125
Selling expense	4,741	0.239	0.212	0.215
Tangible assets	4,741	0.272	0.207	0.215
Size (in USD billions)	4,741	15.997	5.338	43.434
Market-to-book ratio	4,741	1.762	1.393	1.261
Depreciation expense	4,741	0.045	0.040	0.032
Dividend dummy	4,741	0.627	1.000	0.484
Profitability	4,741	0.175	0.161	0.114
Financial slack	4,741	0.147	0.099	0.146
Asset growth	4,741	0.110	0.059	0.330
Earnings volatility	4,741	0.042	0.025	0.099
Sin stock	4,741	0.035	0.000	0.184
Governance	4,741	74.724	78.290	16.588

Table 20: Descriptive Statistics by CR Performance Groups

	Bottom 30% CR Performance		Mid 40% CR Performance		Top 30% CR Performance		Difference in Means (2) - (6)	
	(1) N	(2) Mean	(3) N	(4) Mean	(5) N	(6) Mean	(7) Coeff.	(8) *p*-value
Firm leverage	1,451	0.247	1,892	0.229	1,398	0.234	0.013	0.067
R&D expense	1,451	0.049	1,892	0.041	1,398	0.049	0.000	0.946
Selling expense	1,451	0.264	1,892	0.225	1,398	0.230	0.034	0.000
Tangible assets	1,451	0.272	1,892	0.270	1,398	0.276	-0.003	0.680
Size (in USD billions)	1,451	5.467	1,892	10.253	1,398	34.701	-29.234	0.000
Market-to-book ratio	1,451	1.883	1,892	1.782	1,398	1.609	0.274	0.000
Depreciation expense	1,451	0.049	1,892	0.044	1,398	0.043	0.006	0.000
Dividend dummy	1,451	0.493	1,892	0.589	1,398	0.816	-0.323	0.000
Profitability	1,451	0.177	1,892	0.174	1,398	0.174	0.002	0.616
Financial slack	1,451	0.161	1,892	0.146	1,398	0.135	0.026	0.000
Asset growth	1,451	0.139	1,892	0.104	1,398	0.087	0.052	0.000
Earnings volatility	1,451	0.055	1,892	0.039	1,398	0.032	0.022	0.000
Sin stock	1,451	0.037	1,892	0.035	1,398	0.033	0.004	0.597

Table 21: Determinants of Leverage Ratio

	Leverage Model			Industry Fixed Effect		Across-Industry Effect	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CR performance		-0.0175		-0.00267		-0.142**	
		(0.15)		(0.83)		(0.04)	
Environmental			0.0298**		0.0242**		0.136**
			(0.01)		(0.04)		(0.05)
Social			-0.0524***		-0.0284**		-0.299***
			(0.00)		(0.02)		(0.00)
R&D expense	-0.0204	-0.0190	-0.0194	0.00840	0.0105	0.192	0.166
	(0.56)	(0.58)	(0.57)	(0.82)	(0.77)	(0.28)	(0.34)
Selling expense	-0.0179	-0.0179	-0.0149	-0.0300	-0.0301	0.00778	0.0162
	(0.30)	(0.30)	(0.39)	(0.13)	(0.13)	(0.87)	(0.72)
Tangible assets	0.0483***	0.0485***	0.0485***	0.136***	0.137***	0.0445	0.0479
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.51)	(0.46)
Size	0.0133***	0.0151***	0.0155***	0.00737**	0.00739**	0.0560***	0.0628***
	(0.00)	(0.00)	(0.00)	(0.02)	(0.02)	(0.00)	(0.00)
Market-to-book ratio	0.0157***	0.0158***	0.0163***	0.0120**	0.0123**	0.0161	0.0247
	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.70)	(0.54)
Depreciation expense	0.268**	0.266**	0.250**	-0.271*	-0.276*	-0.0159	-0.0754
	(0.03)	(0.03)	(0.04)	(0.08)	(0.08)	(0.96)	(0.82)
Dividend dummy	-0.0174***	-0.0162***	-0.0171***	0.00141	0.00110	-0.104**	-0.115***
	(0.00)	(0.01)	(0.00)	(0.84)	(0.87)	(0.02)	(0.01)
Profitability	-0.297***	-0.293***	-0.285***	-0.222***	-0.219***	0.0402	0.0532
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.91)	(0.89)
Financial slack	-0.354***	-0.353***	-0.360***	-0.196***	-0.198***	-0.699***	-0.688***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Asset growth	0.00309	0.00221	0.00178	0.0247***	0.0247***	0.0858	0.0947
	(0.71)	(0.79)	(0.83)	(0.00)	(0.00)	(0.38)	(0.32)
Earnings volatility	-0.0781***	-0.0787***	-0.0803***	-0.0500***	-0.0509***	0.0634*	0.0646*
	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.08)	(0.06)
Sin stock	0.0711***	0.0706***	0.0712***	0.0794***	0.0806***	0.0820	0.104
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.25)	(0.15)
R&D dummy	0.0405***	0.0386***	0.0392***	0.0559***	0.0561***	0.0154	0.0185
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.62)	(0.55)
Governance	-0.100***	-0.0887***	-0.0865***	-0.0255	-0.0250	0.0293	0.0306
	(0.00)	(0.00)	(0.00)	(0.25)	(0.26)	(0.85)	(0.83)
Year dummies	Yes	Yes	Yes	Yes	Yes	No	No
Industry dummies	No	No	No	Yes	Yes	No	No
Adjusted R^2	0.176	0.176	0.178	0.478	0.479	0.227	0.269
N	4741	4741	4741	4741	4741	141	141

p-values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 22: Leverage Regressions by CR Performance Groups

	Overall CR			
	(1) High	(2) Low	(3) High	(4) Low
CR performance			0.0362*	-0.153***
			(0.06)	(0.00)
Environmental	0.0385***	-0.0324		
	(0.01)	(0.35)		
Social	-0.00944	-0.106***		
	(0.60)	(0.00)		
Year dummies	Yes	Yes	Yes	Yes
Adjusted R^2	0.17	0.21	0.16	0.21
N	2333	2408	2333	2408
Number of environmental high performers	2086	249	2086	249
Number of social high performers	2096	260	2096	260

p-values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 23: Leverage Regressions by Cash Flow Volatility

	Cash Flow Volatility			
	(1) High	(2) Low	(3) High	(4) Low
CR performance	0.0432**	-0.0101		
	(0.01)	(0.54)		
Environmental			0.0473***	0.0199
			(0.01)	(0.22)
Social			-0.00696	-0.0323*
			(0.73)	(0.06)
Year dummies	Yes	Yes	Yes	Yes
Adjusted R^2	0.168	0.203	0.168	0.203
N	2125	2026	2125	2026
Number of environmental high performers	839	1004	839	1004
Number of social high performers	834	1008	834	1008
Test of equal coefficients (p-value)				
CR	0.024			
Environmental			0.250	
Social			0.344	

p-values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 24: Leverage Regressions by a Firm's Taxable Income Level

	Firm's Taxable Income			
	(1) High	(2) Low	(3) High	(4) Low
CR performance	0.0122	0.0261*		
	(0.40)	(0.09)		
Environment			0.0294**	0.0551***
			(0.05)	(0.00)
Social			-0.0195	-0.0342*
			(0.29)	(0.06)
Year dummies	Yes	Yes	Yes	Yes
Adjusted R^2	0.133	0.219	0.133	0.221
N	2623	2118	2623	2118
Number of environmental high performers	1170	916	1170	916
Number of social high performers	1202	894	1202	894
Test of equal coefficients (p-value)				
CR	0.513			
Environmental			0.246	
Social			0.567	

p-values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 25: Leverage Regressions by the Level of Financial Distress

	Financial Distress (Firm Size)				Financial Distress (Negative EBIT Proportion–Industry)			
	(1) High	(2) Low	(3) High	(4) Low	(5) High	(6) Low	(7) High	(8) Low
CR performance	-0.0387*	0.0362***			0.0147	0.0190		
	(0.06)	(0.01)			(0.28)	(0.27)		
Environmental			0.0580***	0.0228*			0.0582***	0.0267
			(0.00)	(0.10)			(0.00)	(0.12)
Social			-0.106***	0.0128			-0.0492***	-0.00886
			(0.00)	(0.42)			(0.00)	(0.65)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.202	0.172	0.208	0.172	0.186	0.152	0.189	0.151
N	1905	2836	1905	2836	2952	1789	2952	1789
Test of equal coefficients (p-value)								
CR	0.003				0.842			
Environmental			0.150				0.170	
Social			0.000				0.117	

p-values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 26: Leverage Regressions by R&D Intensity

	R&D Intensity			
	(1) High	(2) Low	(3) High	(4) Low
CR performance	-0.0283	0.0379**		
	(0.24)	(0.02)		
Environmental			0.0147	0.0519***
			(0.49)	(0.00)
Social			-0.0495**	-0.0191
			(0.05)	(0.31)
Year dummies	Yes	Yes	Yes	Yes
Adjusted R^2	0.157	0.175	0.158	0.177
N	1293	1879	1293	1879
Number of environmental high performers	710	923	710	923
Number of social high performers	699	914	699	914
Test of equal coefficients (p-value)				
CR	0.020			
Environmental			0.166	
Social			0.326	

p-values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 27: Instrumental Variables Regressions

	Leverage Model				
	(1) First Stage	(2) Second Stage	(3) First Stage (Envir)	(4) First Stage (Social)	(5) Second Stage
CR performance		0.0125			
		(0.571)			
Environmental					0.0844***
					(0.000)
Social					-0.0845***
					(0.002)
R&D expense	-0.688	-0.0214	-7.885*	1.602	-0.0220
	(0.856)	(0.538)	(0.071)	(0.677)	(0.527)
Selling expense	6.521***	-0.0179	10.46***	6.004***	-0.0118
	(0.001)	(0.300)	(0.000)	(0.004)	(0.496)
Tangible assets	-1.403	0.0481***	-0.0277	-2.096	0.0479***
	(0.370)	(0.001)	(0.988)	(0.230)	(0.001)
Size	9.510***	0.0120***	10.10***	9.001***	0.0131***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Market-to-book ratio	0.379	0.0156***	0.267	0.655**	0.0167***
	(0.141)	(0.001)	(0.372)	(0.025)	(0.000)
Depreciation expense	27.89**	0.270**	40.10***	14.07	0.235*
	(0.021)	(0.026)	(0.005)	(0.236)	(0.051)
Dividend dummy	3.525***	-0.0183***	3.817***	3.016***	-0.0201***
	(0.000)	(0.002)	(0.000)	(0.000)	(0.001)
Profitability	18.30***	-0.299***	14.53***	23.48***	-0.280***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Financial slack	8.324***	-0.355***	12.60***	2.427	-0.369***
	(0.000)	(0.000)	(0.000)	(0.320)	(0.000)
Asset growth	-5.972***	0.00372	-5.946***	-5.930***	0.00272
	(0.000)	(0.651)	(0.000)	(0.000)	(0.740)
Earnings volatility	-1.113	-0.0777***	-1.473	-1.604	-0.0811***
	(0.729)	(0.005)	(0.678)	(0.624)	(0.004)
Sin stock	-6.121***	0.0714***	-6.227***	-5.374***	0.0725***
	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)
R&D dummy	-5.960***	0.0419***	-6.872***	-5.057***	0.0429***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Governance	52.43***	-0.109***	53.42***	51.56***	-0.103***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Instrumental variables (Industry-median...)					
CR performance	0.506***				
	(0.000)				
Environmental			0.613***	-0.0370**	
			(0.000)	(0.029)	
Social			-0.138***	0.545***	
			(0.000)	(0.000)	
Year dummies	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.644	0.175	0.620	0.591	0.174
N	4741	4741	4741	4741	4741
Underidentification test		784.210			664.626
p-value		0.000			0.000
F-statistic	496.688	35.690	494.123	368.417	35.343

p-values in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 28: Tests of Causality Between Leverage Ratio and CR Measures

Null Hypothesis	Wald Test (p-Value)
Leverage does not influence CR Performance	(0.379)
Overall CR Performance does not influence Leverage	(0.200)
Leverage does not influence Environmental Performance	(0.073)
Environmental Performance does not influence Leverage	(0.001)
Leverage does not influence Social Performance	(0.484)
Social Performance does not influence Leverage	(0.064)

Appendix A

Table 29: The CSR-S Monitor - Contextual Elements Definitions.

Contextual Element	Definition	Illustrative Sub-Elements
Chair/Executive Message	The Chair/Executive Message Contextual Element measures the quality of information provided by the company in the introductory statement of their CSR report about their management commitment and effectiveness across all CSR subjects, in terms of current achievements and future targets.	(1) Message Signatory (2) CSR Key Topics (3) Current Achievements (4) Future Targets
Environment	The Environment Contextual Element measures the quality of information provided by the company about their management commitment and effectiveness regarding environmental issues such as waste management, climate change, and biodiversity; as well as disclosure about product or process innovation opportunities, reducing the firm's environmental impact through their supply chain, and any environmental accidents.	(1) Waste Management (2) Climate Change (3)Water Management (4) Biodiversity (5) Sourcing (6) Accidents/Spills/Fines (7) Environmental Opportunities/Innovation (8) Packaging Materials
Philanthropy & Community Involvement	The Philanthropy & Community Involvement Contextual Element measures the quality of information provided by the company about their management commitment and effectiveness regarding their charitable activities, including the type (cash, in-kind, employee engagement), purpose and geographic scope of contributions, and how their philanthropy is tied to their business.	(1) Cash Donations (2) In-kind Donations (3) Employee Engagement (4) Donation Matching (5) Purpose of Activities (Healthcare, Education, etc.) (6) Geographic Scope of Activities (7) Integration with Business
External Stakeholder Engagement	The External Stakeholder Engagement Contextual Element measures the quality of information provided by the company about their management commitment and effectiveness toward integrating the advice of external stakeholders in their business operations, including CSR-related projects. Engagement at both the field level (single-site) and corporate level (company-wide) is examined.	(1) Engagement for Business Operations (2) Engagement for CSR-related Projects (3) Engagement for Governance/Oversight (4) Engagement for Field Level and Corporate Level Projects and Policies
Supply Chain	The Supply Chain Contextual Element measures the quality of information provided by the company about their management commitment and effectiveness regarding the CSR aspects of their relationship with suppliers, including the procurement process, contract terms, and monitoring/auditing of suppliers (including contractors, sub-suppliers, joint-venture partners, or other major business associates).	(1) Union Relations (2) Employee Health & Safety (3) Supply Chain Labor Standards (4) Child Labor (5) Women & Minority Contracting (6) Supply Chain Certifications (7) Local/Global Sourcing

Continued on next page

Table 29 – continued from previous page

Contextual Element	Definition	Illustrative Sub-Elements
Labor Relations	The Labor Relations Contextual Element measures the quality of information provided by the company about their management commitment and effectiveness regarding its treatment of employees, both direct (employed by the company) and indirect (employed by a partner, such as a supplier). Areas covered include compensation and benefits, health and safety, professional development opportunities, commitment to diversity and equal opportunity, and union relations.	(1) Union Relations (2) Cash Profit Sharing (3) Employee Involvement (in ownership, stocks) (4) Employee Health & Safety (5) Supply Chain Labor Standards (6) Compensation & Benefits (7) Professional Development (8) Child labor (9) Employment of Underrepresented Groups (10) Workforce Diversity/Equal Opportunity
Governance	The Governance Contextual Element measures the quality of information provided by the company about their management commitment and effectiveness toward following best practice governance principles in areas including the composition and level of independence of their board of directors, compensation of top management, commitment to relevant governance codes, and shareholder engagement.	(1) Board Composition (2) Top Management Compensation (3) Governance Codes/Policies (4) Shareholder Engagement
Anti-Corruption	The Anti-Corruption Contextual Element measures the quality of information provided by the company about their management commitment and effectiveness regarding the prevention of bribery and corruption, through policies and procedures for monitoring activities which are vulnerable; as well as describing any investigation currently underway by regulatory authorities and the steps the company is taking to address the situation.	(1) Policies for Preventing Corruption (2) Discussion of Publicized Cases of Corruption (3) Political Instability
Human Right	The Human Rights Contextual Element measures the quality of information provided by the company about their management commitment and effectiveness regarding their impacts on local communities and the rights of indigenous peoples, support for any controversial regimes, and their commitment to protecting freedom of expression and preventing censorship. Note that human rights topics tied to labor issues are covered under the Labor Relations and/or Supply Chain Contextual Elements.	(1) Community Impact (2) Indigenous Peoples Relations (3) Support for Controversial Regimes (4) Freedom of Expression/Censorship (5) Discussion of Publicized Cases of Human Rights Violations
Codes of Conduct	The Codes of Conduct Contextual Element measures the quality of information provided by the company about their management commitment and implementation of internal and external codes of conduct in the CSR area. Including an individual company code of conduct, industry codes of conduct (such as the International Council on Mining and Metals), and universal codes of conduct (such as the UN Global Compact).	(1) Individual Company Codes of Conduct (2) Industry Codes of Conduct (3) Universal Codes of Conduct (4) Involvement in Code Governance Structure
Integrity Assurance	The Integrity Assurance Contextual Element measures the quality of information provided by the company about their management commitment and effectiveness regarding independent verification of the CSR report, either in its entirety or for specific Contextual Elements.	(1) Independent Third-Party Verification Statement (Internal Assessment, External Assessment) (2) Specific Contextual Element Assurance

Source: www.csrsmonitor.org

Appendix B

Table 30: The CSR-S Monitor Sample Scoring Criteria - Environment.

Level	Criteria	Illustrative Examples
0	Report does not discuss activities toward reducing/mitigating the environmental impacts of the company's business in a meaningful way.	"The Group has three specific sustainability management goals which are: being wise, being smart and being sustainable... We endeavor to minimize social and environmental risks through green management... KB Financial Group has been dedicated to resolving global environmental issues which are becoming increasingly more serious..." (KB Financial Group Inc., 2014)
I	Report provides minimal *depth* of information on the *scope of coverage* of the company's activities toward reducing/mitigating the environmental impacts of the company's business. Discussion categorized as incomplete and vague.	"Johnson Controls generally remained on track to achieve our 10-year greenhouse gas, energy, water and waste intensity goals in 2013. We are committed to an annual 1 percent absolute reduction of greenhouse gas emissions across all our businesses. The improvements we make also enhance our financial results. Over the past 10 years, revenue has increased 78 percent while our carbon footprint has increased only 10 percent..." (Johnson Controls, Inc., 2014)
II	Report provides fair *depth* of information on the *scope of coverage* of the company's activities toward reducing/mitigating the environmental impacts of the company's business, including measurable results. Discussion categorized as reasonably comprehensive and detailed.	"Freescale established a goal in 2010 to reduce our water consumption by our manufacturing operations by 50% over our 2008 baseline. In 2013, we had a significant production increase over 2012, increasing our absolute water consumption amount; however, we still hope to achieve this 2015 goal... We implemented conservation projects that saved more than 42 million gallons of water and 14.9 million kWh per year..." (Freescale Semiconductor, Ltd., 2014)
III	Report provides good *depth* of information on the *scope of coverage* of the company's activities toward reducing/mitigating the environmental impacts of the company's business, including measurable results and comparisons of outcomes at a company or industry level. Discussion categorized as comprehensive and detailed.	"In 2013, the total extrapolated amount of carbon emissions from our business operations decreased from 209 to 169 kilotons compared to 2012 and per FTE from 2.4 to 2.2 tons... In the spring of 2012, we partnered with an electric taxi service to support the transportation needs of employees in the Netherlands. Through this initiative, we have 'greened' 18,000 kilometers of journeys up to year-end 2013... Our Sustainable Procurement program, which began in the Netherlands in 2012, takes this a step further by embedding ING's procurement policy towards suppliers into our processes..." (ING Groep N.V., 2014)
IV	Report provides excellent *depth* of information on the *scope of coverage* of the company's activities toward reducing/mitigating the environmental impacts of the company's business, including measurable results and comparisons of outcomes at the company or industry level. Discussion categorized as comprehensive and detailed, and is noted for reaching an exceptional level of disclosure.	"Since fiscal 2009, we have decreased our total water use by 44.8% and achieved a one-year reduction of nearly 9.8% in fiscal 2012. Over the past four years, we have lowered water use by more than 2,750 million liters... Hazardous waste makes up only 0.04% of our total waste output. In fiscal 2013, our volume of waste produced rose by 44% from the previous year. This increase was due to activities relating to cleaning out an old fuel oil tank at one of our distilleries, which caused 30 tons of redundant fuel to be sent to a facility to be filtered and then blended as fuel for a power plant... Three major air pollutants are sulfur dioxide (SO2), nitrogen oxides (NOX) and particulate matter (PM). These emissions increased by nearly 12% in fiscal 2013, from 1,010 metric tons to 1,134 metric tons, primarily due to our burning a greater amount of heavy fuel oil to compensate for our decreased biogas generation..." (Bacardi Limited, 2014)

* Scope of Coverage – Defined as the range of topics and locations discussed in the report. A wide scope of coverage means the company includes information about many of the relevant topics of the Element, both domestic and international.

** Depth (of information) – Defined as the level of specificity and type of detail included in the report about the different relevant topics and locations of operations. Strong depth of information means the company discussed the Element both narratively (citing specific cases or events) and quantitatively, with a focus on the managerial aspects of the communication, including information on how the relevance of different topics is determined.

Source: www.csrsmonitor.org

Appendix C

Table 31: Thomson Reuters ASSET4 ESG Framework: Key Performance Indicators for Environmental and Social Pillars

Pillars	Environmental Performance	Social Performance
Categories	Resource reduction	Employment quality
	Emission reduction	Health & safety
	Product innovation	Training & development
		Diversity
		Human Rights
		Community
		Product responsibility

Source: http://im.thomsonreuters.com/solutions/content/asset4-esg/

Appendix D

Table 32: A Sample of Data Points and Key Performance Indicators Included in the ASSET4 ESG Database.

Environmental	Social
Energy use total	Employees leaving
Electricity purchased	Turnover of employees
Water withdrawal total	Total injury rate
Water recycled	Accidents total
CO_2 equivalents emission total	Lost time injury rate
NO_x emissions	Lost working days
SO_x emissions	Average training hours
VOC emissions	Training costs total
Waste total	Women employees
Waste recycled total	Women managers
Hazardous waste	Average age
Spills and pollution controversies	Health & safety controversies

Source: http://im.thomsonreuters.com/solutions/content/asset4-esg/

References

AccountAbility. (2005). *National corporate responsibility index.* London.

Al-Tuwaijri, S. A., Christensen, T. E., & Hughes, K. (2004). The relations among environmental disclosure, environmental performance, and economic performance: A simultaneous equations approach. *Accounting, Organizations and Society*, *29*(5), 447–471.

Amihud, Y., & Mendelson, H. (1986). Asset pricing and the bid-ask spread. *Journal of Financial Economics*, *17*(2), 223–249.

Ashforth, B. E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review*, *14*(1), 20–39.

Bachoo, K., Tan, R., & Wilson, M. (2013). Firm value and the quality of sustainability reporting in Australia. *Australian Accounting Review*, *23*(1), 67–87.

Bae, K. H., Kang, J. K., & Wang, J. (2011). Employee treatment and firm leverage: A test of the stakeholder theory of capital structure. *Journal of Financial Economics*, *100*(1), 130–153.

Banerjee, S., Dasgupta, S., & Kim, Y. (2008). Buyer–supplier relationships and the stakeholder theory of capital structure. *Journal of Finance*, *63*(5), 2507–2552.

Bansal, P. (2005). Evolving sustainably: A longitudinal study of corporate sustainable development. *Strategic Management Journal*, *26*(3), 197–218.

Bansal, P., & Clelland, I. (2004). Talking trash: Legitimacy, impression management, and unsystematic risk in the context of the natural environment. *Academy of Management Journal*, *47*(1), 93–103.

Barnea, A., & Rubin, A. (2010). Corporate social responsibility as a conflict between shareholders. *Journal of Business Ethics*, *97*(1), 71–86.

Barry, C. B., & Brown, S. J. (1984). Differential information and the small firm effect. *Journal of Financial Economics*, *13*(2), 283–294.

Barth, M. E., & McNichols, M. F. (1994). Estimation and market valuation of environmental liabilities relating to superfund sites. *Journal of Accounting Research*, *32*(Suppl.), 177–209.

Bauer, R., & Hann, D. (2010). *Corporate environmental management and credit risk.* (Working Paper No. 1660470). Retrieved from SSRN website: https://ssrn.com/abstract=1660470.

Bauer, T. N., & Aiman-Smith, L. (1996). Green career choices: The influence of ecological stance on recruiting. *Journal of Business and Psychology*, *10*(4), 445–458.

Bebchuk, L. A., & Cohen, A. (2005). The costs of entrenched boards. *Journal of Financial Economics*, *78*(2), 409–433.

Bebchuk, L. A., Cohen, A., & Ferrell, A. (2009). What matters in corporate governance? *Review of Financial Studies*, *22*(2), 783–827.

Berk, J. B., Stanton, R., & Zechner, J. (2010). Human capital, bankruptcy, and capital structure. *Journal of Finance*, *65*(3), 891–926.

Berman, S. L., Wicks, A. C., Kotha, S., & Jones, T. M. (1999). Does stakeholder orientation matter? The relationship between stakeholder management models and firm financial performance. *Academy of Management Journal*, *42*(5), 488–506.

Bloomberg ESG. (2009-2012). *Bloomberg professional.* [Online]. Available at: Subscription service. (Accessed: 2013-12-31)

Botosan, C. A. (1997). Disclosure level and the cost of equity capital. *Accounting Review*, *72*(3), 323–349.

Botosan, C. A. (2006). Disclosure and the cost of capital: What do we know? *Accounting and Business Research*, *36*(Suppl. 1), 31–40.

Botosan, C. A., & Plumlee, M. A. (2005). Assessing alternative proxies for the expected risk premium. *Accounting Review*, *80*(1), 21–53.

Bouslah, K., Kryzanowski, L., & M'Zali, B. (2013). The impact of the dimensions of social performance on firm risk. *Journal of Banking and Finance*, *37*(4), 1258–1273.

Bronars, S. G., & Deere, D. R. (1991). The threat of unionization, the use of debt, and the preservation of shareholder wealth. *Quarterly Journal of Economics*, *106*(1), 231–254.

Brown, N., & Deegan, C. (1998). The public disclosure of environmental performance information - A dual test of media agenda setting theory and legitimacy theory. *Accounting and Business Research*, *29*(1), 21–41.

Brown, S., & Hillegeist, S. A. (2007). How disclosure quality affects the level of information asymmetry. *Review of Accounting Studies*, *12*(2-3), 443–477.

Bruno, V., & Claessens, S. (2010). Corporate governance and regulation: Can there be too much of a good thing? *Journal of Financial Intermediation*, *19*(4), 461–482.

Cai, Y., Jo, H., & Pan, C. (2012). Doing well while doing bad? CSR in controversial industry sectors. *Journal of Business Ethics*, *108*(4), 467–480.

Campbell, J. Y. (1996). Understanding risk and return. *Journal of Political Economy*, *104*(2), 298–345.

Chapple, L., Clarkson, P. M., & Gold, D. L. (2013). The cost of carbon: Capital market effects of the proposed emission trading scheme (ETS). *Abacus*, *49*(1), 1–33.

Chapple, W., & Moon, J. (2005). Corporate social responsibility (CSR) in Asia: A seven-country study of CSR web site reporting. *Business & Society*, *44*(4), 415–441.

Charitou, A., Karamanou, I., & Lambertides, N. (2015). Who are the losers of IFRS adoption in Europe? An empirical examination of the cash flow effect of increased disclosure. *Journal of Accounting, Auditing & Finance*, *30*(2), 150–180.

Chava, S. (2014). Environmental externalities and cost of capital. *Management Science*, *60*(9), 2223–2247.

Cheng, B., Ioannou, I., & Serafeim, G. (2014). Corporate social responsibility and access to finance. *Strategic Management Journal*, *35*(1), 1–23.

Christensen, H. B., Hail, L., & Leuz, C. (2013). Mandatory IFRS reporting and changes in enforcement. *Journal of Accounting and Economics*, *56*(2), 147–177.

Clarkson, P. M., Fang, X., Li, Y., & Richardson, G. (2013). The relevance of environmental disclosures: Are such disclosures incrementally informative? *Journal of Accounting and Public Policy*, *32*(5), 410–431.

Clarkson, P. M., Guedes, J., & Thompson, R. (1996). On the diversification, observability, and measurement of estimation risk. *Journal of Financial and Quantitative Analysis*, *31*(01), 69–84.

Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and Society*, *33*(4-5), 303–327.

Coffee Jr, J. C. (1984). Market failure and the economic case for a mandatory disclosure system. *Virginia Law Review*, *70*(4), 717–753.

Daske, H., Hail, L., Leuz, C., & Verdi, R. (2008). Mandatory IFRS reporting around the world: Early evidence on the economic consequences. *Journal of Accounting Research*, *46*(5), 1085–1142.

Delmas, M. A., & Cuerel Burbano, V. (2011). The drivers of greenwashing. *California Management Review*, *54*(1), 64–87.

Derwall, J., Koedijk, K., & Ter Horst, J. (2011). A tale of values-driven and profit-seeking social investors. *Journal of Banking and Finance*, *35*(8), 2137–2147.

Dhaliwal, D. S., Li, O. Z., Tsang, A., & Yang, Y. G. (2011). Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting. *Accounting Review*, *86*(1), 59–100.

Dhaliwal, D. S., Radhakrishnan, S., Tsang, A., & Yang, Y. G. (2012). Nonfinancial disclosure and analyst forecast accuracy: International evidence on corporate social responsibility disclosure. *Accounting Review*, *87*(3), 723–759.

Diamond, D. W. (1985). Optimal release of information by firms. *Journal of Finance*, *40*(4), 1071–1094.

Diamond, D. W., & Verrecchia, R. E. (1991). Disclosure, liquidity, and the cost of capital. *Journal of Finance*, *46*(4), 1325–1359.

Djankov, S., La Porta, R., Lopez-De-Silanes, F., & Shleifer, A. (2008). The law and economics of self-dealing. *Journal of Financial Economics*, *88*(3), 430–465.

Doidge, C., Karolyi, G. A., & Stulz, R. M. (2004). Why are foreign firms listed in the US worth more? *Journal of Financial Economics*, *71*(2), 205–238.

Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review*, *20*(1), 65–91.

Dowling, J., & Pfeffer, J. (1975). Organizational legitimacy: Social values and organizational behavior. *Pacific Sociological Review*, *18*(1), 122–136.

Durnev, A., & Kim, E. (2005). To steal or not to steal: Firm attributes, legal environment, and valuation. *Journal of*

Finance, *60*(3), 1461–1493.
Dutton, J. E., Dukerich, J. M., & Harquail, C. V. (1994). Organizational images and member identification. *Administrative Science Quarterly*, *39*(2), 239–263.
Easley, D., & O'hara, M. (2004). Information and the cost of capital. *Journal of Finance*, *59*(4), 1553–1583.
Easterbrook, F. H., & Fischel, D. R. (1984). Mandatory disclosure and the protection of investors. *Virginia Law Review*, *70*(4), 669–715.
Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes and performance. *Management Science*, *60*(11), 2835–2857.
Effas, Eurosif, WICI, Railpen, & AccountAbility. (2010). *European combined reporting alliance for ESG - Position paper.* Retrieved from http://www.effas-esg.com/wp-content/uploads/2010/02/ESG_Disclosure_Submission_to_EC_European_Combined_Reporting_Alliance_February_2010.pdf
El Ghoul, S., Guedhami, O., Kwok, C. C. Y., & Mishra, D. R. (2011). Does corporate social responsibility affect the cost of capital? *Journal of Banking and Finance*, *35*(9), 2388–2406.
Enriques, L., & Gilotta, S. (2014). *Disclosure and financial market regulation.* (Working Paper No. 2423768). Retrieved from SSRN website: https://ssrn.com/abstract=2423768.
Ernst & Young. (2015). *2015 shareholder proposal landscape.* Retrieved from http://www.ey.com/GL/en/Issues/Governance-and-reporting/EY-shareholder-proposal-landscape
Fama, E. F., & French, K. R. (1998). Taxes, financing decisions, and firm value. *Journal of Finance*, *53*(3), 819–843.
Fama, E. F., & French, K. R. (2002). Testing trade-off and pecking order predictions about dividends and debt. *Review of Financial Studies*, *15*(1), 1–33.
Feldman, S. J., Soyka, P. A., & Ameer, P. G. (1997). Does improving a firm's environmental management system and environmental performance result in a higher stock price? *Journal of Investing*, *6*(4), 87–97.
Financial Accounting Standards Board (US). (2001). *Improving business reporting: Insights into enhancing voluntary disclosures.* Retrieved from http://www.fasb.org/cs/ContentServer?c=Document_C&pagename=FASB%2FDocument_C%2FDocumentPage&cid=1176156460184
Fombrun, C., & Shanley, M. (1990). What's in a name? Reputation building and corporate strategy. *Academy of Management Journal*, *33*(2), 233–258.
Frank, M. Z., & Goyal, V. K. (2009). Capital structure decisions: Which factors are reliably important? *Financial Management*, *38*(1), 1–37.
Freeman, R. E. (2010). *Strategic management: A stakeholder approach*. New York, NY: Cambridge University Press.
Friedman, M. (1970, September 13). *A friedman doctrine–The social responsibility of business is to increase its profits.* Retrieved from www.nytimes.com.
Gao, L. S., & Connors, E. (2011). Corporate environmental performance, disclosure and leverage: An integrated approach. *International Review of Accounting, Banking and Finance*, *3*(2), 1–26.
Goll, I., & Rasheed, A. (2004). The moderating effect of environmental munificence and dynamism on the relationship between discretionary social responsibility and firm performance. *Journal of Business Ethics*, *49*(1), 41–54.
Goss, A., & Roberts, G. S. (2011). The impact of corporate social responsibility on the cost of bank loans. *Journal of Banking and Finance*, *35*(7), 1794–1810.
Governance and Accountability Institute. (2012). *2012 Corporate ESG / Sustainability / Responsibility reporting - Does it matter?* Retrieved from http://www.ga-institute.com/fileadmin/user_upload/Reports/SP500_-_Final_12-15-12.pdf.
Governance and Accountability Institute. (2014). *Flash report: 72% of S&P 500 companies now publishing sustainability / responsibility reports | Sustainability update.* Retrieved from http://ga-institute.com/Sustainability-Update/2014/06/03/flash-report-72-of-sp-500-companies-now-publishing-sustainability-responsibility-reports/.
Graham, J. R., Harvey, C. R., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, *40*(1), 3–73.
Granger, C. W. (1969). Investigating causal relations by econometric models and cross-spectral methods. *Econometrica*, *37*(3), 424–438.
Greening, D. W., & Turban, D. B. (2000). Corporate social performance as a competitive advantage in attracting a quality workforce. *Business & Society*, *39*(3), 254–280.
Grossman, S. J., & Hart, O. D. (1980). Disclosure laws and takeover bids. *Journal of Finance*, *35*(2), 323–334.

Gujarati, D. N. (2003). *Basic econometrics* (4th ed.). New York, NY: McGraw-Hill.
Gunningham, N., Kagan, R. A., & Thornton, D. (2004). Social license and environmental protection: Why businesses go beyond compliance. *Law and Social Inquiry*, *29*(2), 307–341.
Hanka, G. (1998). Debt and the terms of employment. *Journal of Financial Economics*, *48*(3), 245–282.
Harjoto, M. A., & Jo, H. (2011). Corporate governance and CSR nexus. *Journal of Business Ethics*, *100*(1), 45–67.
Hay, J. R., & Shleifer, A. (1998). Private enforcement of public laws: A theory of legal reform. *American Economic Review*, *88*(2), 398–403.
Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, *31*(1–3), 405–440.
Heckman, J. J. (1979). Sample selection bias as a specification error. *Econometrica*, *47*(1), 153–161.
Heinkel, R., Kraus, A., & Zechner, J. (2001). The effect of green investment on corporate behavior. *Journal of Financial and Quantitative Analysis*, *36*(4), 431–449.
Helfat, C. E. (1997). Know-how and asset complementarity and dynamic capability accumulation: The case of R&D. *Strategic Management Journal*, *18*(5), 339–360.
Hermalin, B. E., & Weisbach, M. S. (2012). Information disclosure and corporate governance. *Journal of Finance*, *67*(1), 195–233.
Hillman, A. J., & Keim, G. D. (2001). Shareholder value, stakeholder management, and social issues: What's the bottom line? *Strategic Management Journal*, *22*(2), 125–139.
Himmelberg, C. P., Hubbard, R. G., & Palia, D. (1999). Understanding the determinants of managerial ownership and the link between ownership and performance. *Journal of Financial Economics*, *53*(3), 353–384.
Hobson, J. L., & Kachelmeier, S. J. (2005). Strategic disclosure of risky prospects: A laboratory experiment. *Accounting Review*, *80*(3), 825–846.
Hong, H., & Kacperczyk, M. (2009). The price of sin: The effects of social norms on markets. *Journal of Financial Economics*, *93*(1), 15–36.
Hooghiemstra, R. (2000). Corporate communication and impression management–New perspectives why companies engage in corporate social reporting. *Journal of Business Ethics*, *27*(1), 55–68.
Hughes, J. S., Liu, J., & Liu, J. (2007). Information asymmetry, diversification, and cost of capital. *Accounting Review*, *82*(3), 705–729.
Hughes, K. (2000). The value relevance of nonfinancial measures of air pollution in the electric utility industry. *Accounting Review*, *75*(2), 209–228.
Hughes, S. B., Anderson, A., & Golden, S. (2001). Corporate environmental disclosures: Are they useful in determining environmental performance? *Journal of Accounting and Public Policy*, *20*(3), 217–240.
Initiative for Responsible Investment [IRI]. (2015). *Corporate social responsibility disclosure efforts by national governments and stock exchanges.* Retrieved from http://iri.hks.harvard.edu/files/iri/files/corporate_social_responsibility_disclosure_3-27-15.pdf
Ioannou, I., & Serafeim, G. (2010). *The impact of corporate social responsibility on investment recommendations.* (Working Paper No. 11-017). Retrieved from Harvard Business School website: http://hbswk.hbs.edu/item/the-impact-of-corporate-social-responsibility-on-investment-recommendations.
Ioannou, I., & Serafeim, G. (2014). *The consequences of mandatory corporate sustainability reporting: Evidence from four countries.* (Working Paper No. 11-100). Retrieved from Harvard Business School website: http://www.hbs.edu/faculty/Publication%20Files/11-100_7f383b79-8dad-462d-90df-324e298acb49.pdf.
Iwu-Egwuonwu, R. C. (2011). Corporate reputation & firm performance: Empirical literature evidence. *International Journal of Business and Management*, *6*(4), 197–206.
Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review*, *76*(2), 323–329.
Jensen, M. C. (2002). Value maximization, stakeholder theory, and the corporate objective function. *Business Ethics Quarterly*, *12*(2), 235–256.
Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360.
Jiao, Y. (2010). Stakeholder welfare and firm value. *Journal of Banking and Finance*, *34*(10), 2549–2561.
Jo, H., & Harjoto, M. (2011). Corporate governance and firm value: The impact of corporate social responsibility.

Journal of Business Ethics, *103*(3), 351–383.
Johnston, D. M., Sefcik, S. E., & Soderstrom, N. S. (2008). The value relevance of greenhouse gas emissions allowances: An exploratory study in the related United States SO_2 market. *European Accounting Review*, *17*(4), 747–764.
Kale, J. R., & Shahrur, H. (2007). Corporate capital structure and the characteristics of suppliers and customers. *Journal of Financial Economics*, *83*(2), 321–365.
Kleibergen, F., & Paap, R. (2006). Generalized reduced rank tests using the singular value decomposition. *Journal of Econometrics*, *133*(1), 97–126.
Kolk, A. (2004). A decade of sustainability reporting: Developments and significance. *International Journal of Environment and Sustainable Development*, *3*(1), 51–64.
Konar, S., & Cohen, M. A. (2001). Does the market value environmental performance? *Review of Economics and Statistics*, *83*(2), 281–289.
Kotler, P., & Lee, N. (2008). *Corporate social responsibility: Doing the most good for your company and your cause*. New York, NY: John Wiley & Sons.
KPMG, Center for Corporate Governance in Africa, Global Reporting Initiative, & United Nations Environment Programme. (2013). *Carrots and sticks: Sustainability reporting policies worldwide – Today's best practice, tomorrow's trends.* Retrieved from https://www.globalreporting.org/resourcelibrary/carrots-and-sticks.pdf
KPMG, & United Nations Environment Programme. (2006). *Carrots and sticks for starters.* Retrieved from http://www.unep.fr/shared/publications/pdf/WEBx0120xPA-CarrotsSticks.pdf
Lambert, R., Leuz, C., & Verrecchia, R. E. (2007). Accounting information, disclosure, and the cost of capital. *Journal of Accounting Research*, *45*(2), 385–420.
Lang, M., Lins, K. V., & Maffett, M. (2012). Transparency, liquidity, and valuation: International evidence on when transparency matters most. *Journal of Accounting Research*, *50*(3), 729–774.
Lang, M., & Maffett, M. (2011). Transparency and liquidity uncertainty in crisis periods. *Journal of Accounting and Economics*, *52*(2), 101–125.
La Porta, R., Lopez-De-Silanes, F., Shleifer, A., & Vishny, R. (1997). Legal determinants of external finance. *Journal of Finance*, *52*(3), 1131–1150.
La Porta, R., Lopez-De-Silanes, F., Shleifer, A., & Vishny, R. (1998). Law and finance. *Journal of Political Economy*, *106*(6), 1113–1155.
La Porta, R., Lopez-De-Silanes, F., Shleifer, A., & Vishny, R. (2002). Investor protection and corporate valuation. *Journal of Finance*, *57*(3), 1147–1170.
Leland, H. E. (1998). Agency costs, risk management, and capital structure. *Journal of Finance*, *53*(4), 1213–1243.
Lennox, C. S., Francis, J. R., & Wang, Z. (2011). Selection models in accounting research. *Accounting Review*, *87*(2), 589–616.
Leuz, C., & Verrecchia, R. E. (2000). The economic consequences of increased disclosure. *Journal of Accounting Research*, *38*(Suppl.), 91–124.
Leuz, C., & Wysocki, P. (2008). *Economic consequences of financial reporting and disclosure regulation: A review and suggestions for future research.* (Working Paper No. 1105398). Retrieved from SSRN website: https://ssrn.com/abstract=1105398.
Leuz, C., & Wysocki, P. D. (2016). The economics of disclosure and financial reporting regulation: Evidence and suggestions for future research. *Journal of Accounting Research*, *54*(2), 525–622.
Levitt, A. (1998). The importance of high quality accounting standards. *Accounting Horizons*, *12*(1), 79–82.
Levitt, T. (1958). The dangers of social responsibility. *Harvard Business Review*, *36*(5), 41–50.
Linsmeier, T. J., Boatsman, J. R., Herz, R. H., Jennings, R. G., Jonas, G. J., Lang, M. H., . . . Wahlen, J. M. (1998). Criteria for assessing the quality of an accounting standard. *Accounting Horizons*, *12*(2), 161–162.
Lipson, M. L., & Mortal, S. (2009). Liquidity and capital structure. *Journal of Financial Markets*, *12*(4), 611–644.
Love, I., & Zicchino, L. (2006). Financial development and dynamic investment behavior: Evidence from panel VAR. *Quarterly Review of Economics and Finance*, *46*(2), 190–210.
Lubatkin, M., & Chatterjee, S. (1994). Extending modern portfolio theory into the domain of corporate diversification: Does it apply? *The Academy of Management Journal*, *37*(1), 109-136.
Lundholm, R., & Van Winkle, M. (2006). Motives for disclosure and non-disclosure: A framework and review of the evidence. *Accounting and Business Research*, *36*(Suppl. 1), 43–48.

Maddala, G. S. (1983). *Limited-dependent and qualitative variables in econometrics* (Vol. 3). Cambridge, UK: Cambridge University Press.

Maignan, I., & Ralston, D. A. (2002). Corporate social responsibility in Europe and the US: Insights from businesses' self-presentations. *Journal of International Business Studies*, *33*(3), 497–514.

Maksimovic, V., & Titman, S. (1991). Financial policy and reputation for product quality. *Review of Financial Studies*, *4*(1), 175–200.

Margolis, J. D., Elfenbein, H. A., & Walsh, J. P. (2007). *Does it pay to be good? A meta-analysis and redirection of research on the relationship between corporate social and financial performance.* (Working Paper).

Marquis, C., & Toffel, M. W. (2012). *When do firms greenwash? Corporate visibility, civil society scrutiny, and environmental disclosure.* (Working Paper No. 11-115). Retrieved from Harvard Business School website: http://people.hbs.edu/cmarquis/global_reporting_12-20-12.pdf.

Matsa, D. A. (2010). Capital structure as a strategic variable: Evidence from collective bargaining. *Journal of Finance*, *65*(3), 1197–1232.

Matsumura, E. M., Prakash, R., & Vera-Muñoz, S. C. (2014). Firm-value effects of carbon emissions and carbon disclosures. *Accounting Review*, *89*(2), 695–724.

McWilliams, A., Siegel, D. S., & Wright, P. M. (2006). Corporate social responsibility: Strategic implications. *Journal of Management Studies*, *43*(1), 1–18.

Merton, R. C. (1987). A simple model of capital market equilibrium with incomplete information. *Journal of Finance*, *42*(3), 483–510.

Milgrom, P. R. (1981). Good news and bad news: Representation theorems and applications. *Bell Journal of Economics*, *12*(2), 380–391.

Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, *5*(2), 147–175.

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, *13*(2), 187–221.

Orlitzky, M., & Benjamin, J. D. (2001). Corporate social performance and firm risk: A meta-analytic review. *Business & Society*, *40*(4), 369–396.

Orlitzky, M., Schmidt, F., & Rynes, S. (2003). Corporate social and financial performance: A meta-analysis. *Organization Studies*, *24*(3), 403–441.

Özbilgin, M., & Penno, M. (2005). Corporate disclosure and operational strategy: Financial vs. operational success. *Management Science*, *51*(6), 920–931.

Padgett, R. C., & Galan, J. I. (2010). The effect of R&D intensity on corporate social responsibility. *Journal of Business Ethics*, *93*(3), 407–418.

Pae, J., Thornton, D. B., & Welker, M. (2008). Agency cost reduction associated with EU financial reporting reform. *Journal of International Accounting Research*, *7*(1), 51–76.

Perotti, E. C., & Spier, K. E. (1993). Capital structure as a bargaining tool: The role of leverage in contract renegotiation. *American Economic Review*, *83*(5), 1131–1141.

Petersen, M. A. (2009). Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies*, *22*(1), 435–480.

Plumlee, M., Brown, D., Hayes, R. M., & Marshall, S. (2010). *Voluntary environmental disclosure quality and firm value: Further evidence.* (Working Paper No. 1744114). Retrieved from SSRN website: https://ssrn.com/abstract=1744114.

Plumlee, M., Brown, D., & Marshall, S. (2008). *The impact of voluntary environmental disclosure quality on firm value.* (Working Paper No. 1140221). Retrieved from SSRN website: https://ssrn.com/abstract=1140221.

Porter, M. E., & Kramer, M. R. (2006). Strategy and society. *Harvard Business Review*, *84*(12), 78–92.

PwC. (2014, May). *Sustainability goes mainstream: Insights into investor views.* Retrieved from http://www.pwc.com/en_US/us/pwc-investor-resource-institute/publications/assets/pwc-sustainability-goes-mainstream-investor-views.pdf

Rajan, R. G., & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *Journal of Finance*, *50*(5), 1421–1460.

Rees, W., & Rodionova, T. (2015). The influence of family ownership on corporate social responsibility: An international analysis of publicly listed companies. *Corporate Governance: An International Review*, *23*(3), 184–202.

Reverte, C. (2012). The impact of better corporate social responsibility disclosure on the cost of equity capital. *Corporate Social Responsibility and Environmental Management*, *19*(5), 253–272.

Richardson, A. J., & Welker, M. (2001). Social disclosure, financial disclosure and the cost of equity capital. *Accounting, Organizations and Society*, *26*(7), 597–616.

Richardson, A. J., Welker, M., & Hutchinson, I. R. (1999). Managing capital market reactions to corporate social resposibility. *International Journal of Management Reviews*, *1*(1), 17–43.

Ross, S. A. (1979). Disclosure regulation in financial markets: Implications of modern finance theory and signaling theory. In F. R. Edwards (Ed.), *Issues in financial regulation* (Vol. 5, pp. 177–202). New York, NY: McGraw-Hill.

Sethi, S. P., Martell, T. F., & Demir, M. (2015a). Enhancing the role and effectiveness of corporate social responsibility (CSR) reports: The missing element of content verification and integrity assurance. *Journal of Business Ethics*, 1-24. doi: 10.1007/s10551-015-2862-3

Sethi, S. P., Martell, T. F., & Demir, M. (2015b). An evaluation of the quality of corporate social responsibility reports by some of the world's largest financial institutions. *Journal of Business Ethics*, 1-19. doi: 10.1007/s10551-015-2878-8

Sharfman, M. P., & Fernando, C. S. (2008). Environmental risk management and the cost of capital. *Strategic Management Journal*, *29*(6), 569–592.

Shleifer, A. (2005). Understanding regulation. *European Financial Management*, *11*(4), 439–451.

Shleifer, A., & Wolfenzon, D. (2002). Investor protection and equity markets. *Journal of Financial Economics*, *66*(1), 3–27.

Simnett, R., Vanstraelen, A., & Wai Fong, C. (2009). Assurance on sustainability reports: An international comparison. *Accounting Review*, *84*(3), 937–367.

Srivastava, R. K., McInish, T. H., Wood, R. A., & Capraro, A. J. (1997). Part IV: How do reputations affect corporate performance?: The value of corporate reputation: Evidence from the equity markets. *Corporate Reputation Review*, *1*(1), 61–68.

Stanaland, A. J. S., Lwin, M. O., & Murphy, P. E. (2011). Consumer perceptions of the antecedents and consequences of corporate social responsibility. *Journal of Business Ethics*, *102*(1), 47–55.

Standard & Poor's/Compustat. (2002-2013). *Compustat monthly updates.* [Online]. Retrieved from Wharton Research Data Service: https://wrds-web.wharton.upenn.edu/wrds/. (Accessed: 2016-09-15)

Stellner, C., Klein, C., & Zwergel, B. (2015). Corporate social responsibility and Eurozone corporate bonds: The moderating role of country sustainability. *Journal of Banking and Finance*, *59*, 538–549.

Stock, J. H., & Yogo, M. (2005). Testing for weak instruments in linear IV regression. In J. H. Stock & D. Andrews (Eds.), *Identification and inference for econometric models: Essays in honor of Thomas Rothenberg* (pp. 80–108). New York, NY: Cambridge University Press.

Surroca, J., Tribó, J. A., & Waddock, S. (2010). Corporate responsibility and financial performance: The role of intangible resources. *Strategic Management Journal*, *31*(5), 463–490.

The Forum for Sustainable and Responsible Investment [US SIF]. (2012). *Report on sustainable and responsible investing trends in the United States.* Retrieved from http://www.ussif.org/files/Publications/12_Trends_Exec_Summary.pdf

Thomson Reuters ASSET4 ESG. (2002-2012). *Thomson reuters corporate responsibility ratings.* [Online]. Available at: Subscription service. (Accessed: 2013-12-31)

Titman, S. (1984). The effect of capital structure on a firm's liquidation decision. *Journal of Financial Economics*, *13*(1), 137–151.

Titman, S., & Trueman, B. (1986). Information quality and the valuation of new issues. *Journal of Accounting and Economics*, *8*(2), 159–172.

Titman, S., & Wessels, R. (1988). The determinants of capital structure choice. *Journal of Finance*, *43*(1), 1–19.

Turban, D. B., & Greening, D. W. (1997). Corporate social performance and organizational attractiveness to prospective employees. *Academy of Management Journal*, *40*(3), 658–672.

Verrecchia, R. E. (2001). Essays on disclosure. *Journal of Accounting and Economics*, *32*(1), 97–180.

Verwijmeren, P., & Derwall, J. (2010). Employee well-being, firm leverage, and bankruptcy risk. *Journal of Banking and Finance*, *34*(5), 956–964.

Waddock, S., & Graves, S. (1997). The corporate social performance - Financial performance link. *Strategic*

Management Journal, *18*(4), 303–319.

Weissman Center for International Business. (2012). *The CSR-Sustainability monitor: Report on the scope and quality of CSR reports from the world's largest corporations.* Retrieved from http://www.csrsmonitor.org

Weissman Center for International Business. (2014). *The CSR-Sustainability monitor: Report on the scope and quality of CSR reports from the world's largest companies.* Retrieved from http://www.csrsmonitor.org

Wensen, K. V., Broer, W., Klein, J., & Knopf, J. (2011). *The state of play in sustainability reporting in the European Union.* Retrieved from http://ec.europa.eu/social/BlobServlet?docId=6727&langId=en

Wheeler, A. R., Richey, R. G., Tokkman, M., & Sablynski, C. J. (2006). Retaining employees for service competency: The role of corporate brand identity. *Journal of Brand Management*, *14*(1), 96–113.

Woidtke, T. (2002). Agents watching agents? Evidence from pension fund ownership and firm value. *Journal of Financial Economics*, *63*(1), 99–131.

Wooldridge, J. M. (2002). *Econometric analysis of cross section and panel data*. Cambridge, MA: MIT Press.