

# **Voluntary External Assurance of Corporate Social Responsibility Reports and the Dow Jones Sustainability Index Membership: International Evidence**

Peter M. Clarkson  
UQ Business School  
The University of Queensland

Yue Li  
Joseph Rotman School of Management  
The University of Toronto

Gordon Richardson  
Joseph Rotman School of Management  
The University of Toronto

Albert Tsang  
CUHK Business School  
The Chinese University of Hong Kong

**August 30, 2015**

## **Abstract**

This study examines the extent to which firms committing to better corporate social responsibility (CSR) performance are more likely to issue standalone CSR reports, to engage a third party for assurance of CSR reports, and to choose an accounting firm to provide CSR report assurance. Our evidence suggests that while a firm's CSR commitment has a positive relation with both CSR report issuance and CSR assurance decision, we find no evidence that CSR commitment is positively associated with the propensity of choosing an accounting firm to serve as the assurer. We further examine whether the issuance of standalone CSR reports, the external assurance of CSR disclosure and the type of CSR report assurers affect the firm's inclusion in the Dow Jones Sustainability Indices (DJSI) and the investment decision of socially responsible investors (SRI) after controlling for firms' CSR performance. Consistent with the signaling role of CSR assurance, we find that having CSR disclosure assured increases the likelihood of being included in the DJSI and attracts more SRI. However we do not find that the type of assurer matters.

# **Voluntary External Assurance of Corporate Social Responsibility Reports and the Dow Jones Sustainability Index Membership: International Evidence**

## **1. Introduction**

An increasing number of companies publish standalone corporate social responsibility reports nowadays. Due to a lack of common CSR reporting standards and the diversity of the scope of CSR disclosure, managers have considerable opportunities to disclose CSR information strategically (Peters and Romi 2015, Cho and Patten 2007, Cho and Patten 2014). One way to enhance the credibility of corporate social responsibility (CSR) disclosure is to have CSR disclosure assured by an external third party (Cohen and Simnett 2014). Arguably, assurance of CSR disclosure could provide both external stakeholders and management with increased confidence in the credibility of CSR information voluntarily disclosed by firms (GRI 2013). Nonetheless, empirical evidence on the importance of CSR assurance remains mixed. While some empirical research suggests that CSR assurance is potentially valuation relevant and can mitigate the concern for lack of credibility in CSR disclosure (e.g., Casey and Grenier 2015; Peters and Romi 2015; Simnett *et al.* 2009; Holder-Webb *et al.* 2009), other studies point to the contrary (e.g., Cho *et al.* 2014; Gray 2006).

Given the existence of mixed evidence to date, the first objective of this paper is to extend the prior research into factors that drive the demand for CSR reporting assurance. As such, in this study, we first explore the factors associated with the voluntary adoption of external assurance of CSR disclosure with a specific focus on a firm's commitment to CSR. When examining a firm's commitment, we make a distinction between the following four dimensions in order to better understand the underlying drivers of external assurance of CSR disclosure: CSR Policy, CSR Implementation, CSR Monitoring, and CSR Improvement. Following the prior literature which

suggests a signaling role for voluntary non-financial disclosures such as CSR disclosures,<sup>1</sup> and to the extent that firms committing to better CSR performance are more willing to obtain third-party assurance to further signal their reporting quality and enhance the credibility of the information communicated, we predict that firms with a stronger commitment to CSR are more likely to have their CSR report assured by external parties, and also tend to choose more credible assurers, i.e., assurers from auditing firms to signal their CSR commitment. As a robustness check, in future versions of this paper, we will also explore actual CSR performance as an alternative measure of CSR commitment.

The second research objective of this study is to examine the potential benefits associated with external assurance of CSR disclosure. Specifically, we investigate the impact of voluntary external assurance of CSR disclosure and the choice of CSR report assurer on the likelihood of inclusion in the Dow Jones Sustainability Indices (DJSI). Given its recognition as a leading indicator for corporate sustainability, we use inclusion in the DJSI as an objective measure of a firm's reputation for sustainability.<sup>2</sup> We predict that if external assurance of CSR disclosure is perceived by sophisticated CSR information users who compose the DJSI to be credibility-enhancing, firms with CSR report assurance, and especially assurance by an external third party from the accounting profession, are more likely to be included as a DJSI component. In addition, we also examine whether issuance and assurance of the CSR disclosure, and the assurance by the accounting profession influence the investment decisions by socially responsible investors (SRI).

---

<sup>1</sup> The signaling role of voluntary CSR disclosure suggests that good CSR performers signal their type through better voluntary CSR disclosures that cannot be mimicked easily by poor CSR peers (Clarkson *et al.* 2008).

<sup>2</sup> Created in 1999, DJSI evaluates over 2,500 of the world's largest publicly traded companies based on economic, environmental and social criteria and it is considered by global investment communities as one of the most widely used benchmarks on corporate social responsibility leadership. According to the 2010 *Rate the Raters* survey conducted by SustainAbility (see *Rate the Raters Phase two: Taking Inventory of the Ratings Universe*), the DJSI is also considered as the most credible of the world's 16 leading sustainability rating systems. Companies included in DJSI are recognized as industry leaders in terms of their superior environmental, social and economic performance. More details can be found at [https://en.wikipedia.org/wiki/Dow\\_Jones\\_Sustainability\\_Indices](https://en.wikipedia.org/wiki/Dow_Jones_Sustainability_Indices).

Finally, we also consider whether the degree of stakeholder orientation within the firm's home country plays a role to explore multi-jurisdictional nature in our sample. Here, our priors are that we are unlikely to find stakeholder orientation to matter, since the analysts of DJSI and SRI are sophisticated CSR information users and thus their perceptions regarding the importance of external assurance of CSR disclosure are less likely to vary with the degree of stakeholder orientation across country.<sup>3</sup>

Using an international sample spanning 26 countries, and consistent with prior studies (e.g., Dhaliwal *et al.* 2011; Clarkson *et al.* 2009), we show in the first part of our study that a firm's CSR commitment has a significant positive relation with the issuance of CSR disclosure. More important, our results also show that firms with stronger CSR commitment tend to be more likely to issue CSR disclosure with external assurance. This finding is consistent with our expectation and the signaling role of voluntary adoption of external assurance of CSR disclosure. Our results do not, however, provide evidence that firms with stronger CSR commitment are more likely to have their CSR disclosure assured by an external third party from the accounting profession. Together, our findings suggest that firms with stronger CSR commitment appear to signal their superior CSR performance through voluntary CSR disclosure and the decision to assure.

Furthermore, by distinguishing between CSR Policy, Implementation, Monitoring and Improvement (i.e., the four dimensions of CSR commitment), our results show that while the existence of better CSR policies across environmental and social dimensions, stronger CSR monitoring (e.g., public disclosure of key performance indicators used by firms and regular internal or external audits on these key indicators), and committing to future CSR improvement (e.g., setting specific objective to be achieved and commenting on the results of previously set

---

<sup>3</sup> Stakeholder orientation is defined as the extent to which management's vision of its roles and responsibilities includes the interests and claims of non-stockholding groups such as customers, suppliers, employees, communities, and the general public (Mitchell *et al.*, 1997).

objective) appear to have significantly positive association with both the CSR disclosure issuance and assurance decisions, better CSR implementation (e.g., the presence of dedicated and specialized team /individuals) does not seem to have an effect on CSR disclosure and assurance.<sup>4</sup>

The second part of our analysis examines the effect of CSR assurance on the likelihood of being included in the DJSI. Specifically, after controlling for firms' actual CSR performance, we find that CSR assurance increases the likelihood of issuing firms being included as a DJSI component. This finding is robust across three different measures of CSR disclosure, including an indicator variable of whether a firm issues standalone CSR disclosure in a year, a continuous variable measuring the number of pages of each standalone CSR disclosure, and a variable measuring the level of CSR information provided by firms voluntarily. Given the importance of being included in the DJSI as an established measure for the reputation in corporate sustainability,<sup>5</sup> our finding suggest that CSR assurance plays an important role in credibly communicating firms' CSR initiatives to their stakeholders, which in turn leads to a positive consequence to the issuing firms. However, once again, we do not find evidence supporting the conjecture that the type of assurer has an effect on the inclusion of DJSI.

Finally, in additional analysis, we also examine the effect of CSR assurance on socially responsible investors and find evidence consistent with the results and the inferences discussed above. Specifically, after controlling for actual CSR performance, we continue to find a positive association between CSR assurance and both the number of SRI and the percentage of SRI share holdings. Again, we find no evidence that the type of assurer matters in socially responsible investors' investment decisions. These findings thus provide further support that CSR assurance

---

<sup>4</sup> In contrast, using a US setting, Peters and Romi (2015) find that the presence a Chief Sustainability Officer (CSO) is positively associated with CSR assurance.

<sup>5</sup> Robinson *et al.* (2008) shows that a socially responsible reputation established through the membership of DJSI results in a significant increase in firm value.

is beneficial in signaling the issuing firms' CSR commitment, while the choice of assurers seems to have limited or insignificant impact in achieving such a goal.

Taking into account extant research on CSR reporting, we believe that our findings provide incremental insights into the determinants of and potential consequences associated with CSR reporting assurance. By providing evidence on the effect of CSR commitment on CSR reporting assurance and its potential consequences, our study not only sheds light in identifying the nature (i.e., substantive vs. symbolic) of CSR reporting assurance, but also provides direct evidence on the real benefits associated with CSR reporting assurance. In addition, our findings provide further evidence in supporting prior research's claim that voluntary external assurance could provide greater confidence in the information disclosed and is value relevant (e.g., Carey *et al.* 2000). Finally, previous studies argue that large auditing firms, due to higher level of expertise in non-financial assurance tend to play a better assurance function (Mock *et al.* 2007). Our finding that the choice of CSR reporting assurer has no effect on the two consequence variables examined in our study thus opens new direction for future research.

The remainder of this paper is organized as follows. Section 2 reviews the relevant literature. Section 3 and 4 describe research design and sample, respectively. We present our empirical results in Section 5 and conclude in Section 6.

## **2. Literature Review and Research Questions**

There is growing evidence that a firm's image as being socially responsible can improve its reputation which, in turn, can lead to a number of potential benefits. For example, prior research shows that employees prefer to work for firms with better reputation (Roberts and Dowling 2002; Turban and Greening 1996). Anecdotal evidence provides support for this view. For instance, a

survey conducted by Environics International (2002) covering 25,000 people from 25 countries find that 80 percent of its respondents agree that an image of better corporate social responsibility enhances its employees' motivation and loyalty. Better reputation on CSR can also create competitive advantages. For example, prior work suggests that firms with a good reputation for sustainability are more likely to be able to charge a price premium because of a higher customers' perceptions of the quality of their products and services (Fomburn and Shanelly 1990).<sup>6</sup>

A socially responsible image can additionally lead to various capital market benefits such as reduced cost of capital, increased analyst coverage, lower analyst forecast errors, and lower analyst forecast dispersion (Dhaliwal *et al.* 2011, 2012). Other potentially important benefits associated with a good CSR reputation include better protection of shareholder values in the long run through a reduced likelihood of regulatory intervention (King 1995; Blacconiere and Patten 1994; Blacconiere and Northcutt 1997) and mitigating the risk of reputation or value losses when firms face adverse corporate events (Matsumura *et al.*, 2014; Koh *et al.*, 2014; Godfrey *et al.*, 2008).

Following the growing awareness on the importance of CSR practices for firm sustainability, an increasing number of firms have started to voluntarily provide information about their CSR initiatives. Here, the objective appears to be to signal that the company is meeting stakeholder demands for sustainable/responsible practices (Simnett *et al.*, 2009; Cohen and Simnett 2014; Dhaliwal *et al.*, 2012). Extant research generally shows that voluntarily issued CSR information has the potential to provide incrementally useful information to investors in understanding firms'

---

<sup>6</sup> Consistent with this argument, a survey of consumer attitudes involving 25,000 individuals in 26 countries conducted by World Economic Forum finds that more consumers form their impression of a company based on its CSR practice than do so on brand reputation or financial factors (see Roberts, Keeble and Brown, "The business case for corporate citizenship", [www.weforum.org](http://www.weforum.org)).

CSR practices, and ultimately leads to significant capital market benefits for the disclosing firms.<sup>7</sup> Communication of CSR performance to firms' stakeholders is important as it enhances the link between CSR performance and firm value (Servas and Tamayo 2013).<sup>8</sup> However, because market participants may not trust voluntary CSR disclosures, one important challenge for firms is how to communicate the credibility of their CSR disclosures. Skepticism about the credibility of CSR reports arises because managers have incentives to disclose self-serving and less credible CSR information (Holder-Webb *et al.*, 2009; Simnett *et al.*, 2009; Ingram and Frazier 1980; Hobson and Kachelmeier 2005).<sup>9</sup> This concern is particularly pronounced given the fact that voluntarily disclosed CSR information covers a much broader area, varies more considerably in content, and most importantly is currently subject to very limited regulatory guidance and oversight compared to corporate financial disclosure in general.

Extant studies argue that building firm reputation through voluntary CSR reporting depends on the perceived reliability and credibility of CSR information (Cohen and Simnett 2015). The external assurance of CSR disclosure has been argued as one important way of achieving this objective (Simnett *et al.*, 2009; Casey and Grenier 2015; Cohen and Simnett 2014). As a result, international evidence indicates an increase in the number of firms providing external assurance of their CSR disclosures (Kolk and Perego 2010; Mock *et al.* 2013). However, unlike the assurance of

---

<sup>7</sup> For example, prior research documents significant capital market benefits associated with CSR reports such as reduced cost of equity capital (Plumlee *et al.*, 2014), improved analyst forecast accuracy (Dhaliwal *et al.*, 2012), higher share prices (Matsumura *et al.* 2014), and higher fundamental value estimates by investors (Elliott *et al.* 2014). In addition, other studies suggest that credible CSR information is also important to the management in making internal decisions (Cohen and Simnett 2015) and to regulators and general public in evaluating the impact of firms' business activities (Bewley and Li 2000). For example, Casey and Grenier (2015) suggest that CSR information could be used for strategic planning, enterprise risk management and more effective internal management control decisions.

<sup>8</sup> Specifically, Servaes and Tamayo (2013) document a positive relation between corporate social responsibility and firm value for firms with high customer awareness.

<sup>9</sup> Consistent with the symbolic view of CSR reporting, previous studies find significant discrepancies between CSR performance and CSR reporting. For example, previous studies show that firms with poor CSR performance tend to disclose more CSR-related information in response to social and political pressure (Cho and Patten 2007, Patten 2002; Wiseman 1982).



financial information, assurance of CSR disclosures involves the examination of much more diverse subject matters and with less well developed reporting criteria (Cohen and Simnett 2015). In addition, there is also substantial variation in the rigor and independence of the assurance provider, and the level of CSR assurance provided (Manetti and Becatti 2009; O'Dwyer 2011; O'Dwyer and Own 2005). In support, Casey and Grenier (2015) find that not only firms with stronger CSR performance, but also firms with more CSR concerns are more likely to have their CSR disclosure assured, suggesting that firms may voluntarily seek extremal assurance of their CSR disclosures for greenwashing purposes.

While there are numerous studies that investigate whether, and to what extent, external assurance of CSR disclosure is beneficial and can provide a credible signal to stakeholders on how the firm is managing its social and environmental risks, the results are mixed. For example, in the U.S. setting, Dhaliwal *et al.* (2011) find that CSR reports with assurance tend to have a greater effect on reducing CSR reporting firms' cost of equity capital thereby suggesting that assurance is an effective mechanism for enhancing credibility. Casey and Grenier (2014) find results consistent with Dhaliwal *et al.* (2011) and further show that the reduction in the cost of equity capital is significantly greater when an accounting firm serves as the CSR assurance provider. In contrast, Cho *et al.* (2014) find that CSR assurance is not beneficial to CSR reporting firms in the U.S. Specifically, they find that a CSR report with assurance is not associated with higher market value than a CSR report without assurance.<sup>10</sup> In addition, studies also find inconsistent results on the effects of CSR assurance for reporting firms across countries. For example, while some U.S. studies suggest that external assurance of CSR disclosure adds value to reporting firms (e.g., Pflugrath *et al.* 2011; Casey and Grenier 2015), studies examining

---

<sup>10</sup> Similarly, Peters and Romi (2015) find that while CSR assurance does not seem to be associated with greater market value in the early part of their sample period (2002-2007), a positive association between CSR assurance and market value exists in their later sample period (2008-2010).

the effect of CSR assurance using international settings do not find evidence in supporting such a claim (e.g., Dhaliwal *et al.* 2012; Dhaliwal *et al.* 2014).

Given the limited understanding of the determinants of voluntary external assurance of CSR disclosure and the mixed capital market consequence results associated with CSR report assurance, the primary purposes of this study are to examine (1) whether voluntary adoption of CSR report assurance signals a firm's CSR commitments and (2) whether and to what extent voluntary external assurance of CSR disclosure and the choice of CSR report assurer affects inclusion in the Dow Jones Sustainability Index. In addition, we also investigate the effect of CSR assurance on the investment decisions of socially responsible investors.

### **3. Research Design**

#### **3.1. The determinants of CSR disclosure**

We begin our empirical analysis by examining the determinants of voluntary assurance of CSR reports. Prior studies suggest that different types of CSR initiatives can be associated with different outcomes. For example, Hillman and Keim (2001) find evidence that stakeholder management leads to improved shareholder value, while social issue participation is negatively associated with shareholder value.<sup>11</sup> Similarly, other studies (Becker-Olsen *et al.* 2006; Groza *et al.* 2011) find that favorable consumer beliefs and attitudes are the outcome of proactive rather than reactive CSR initiatives.

---

<sup>11</sup> Hillman and Keim (2001) separate corporate social performance into stakeholder management and social issue participation. They argue that effective stakeholder management, through building a good relation with primary stakeholders including customers, employees, suppliers and communities, can constitute intangible resources and enhance long-term value creation. On the other hand, social issue participation refers to elements of corporate social performance that fall outside of the direct relationship with primary stakeholders. Examples of social issue participation include avoiding nuclear energy or refraining from business relationship with countries with human rights violations. They argue and show that due to the absence of direct ties to the relationship between firms and its primary stakeholder, social issue participation may not create value for shareholders.

Because firms' CSR performance incorporates the interaction between the principles of social responsibility, the processes of social responsiveness, and the policies and programs designed by corporations to address social issues (Wartick and Cochran 1985), we examine the effects of CSR commitment measured by four CSR drivers, including *Policy*, *Implementation*, *Monitoring* and *Improvement* on the following three dependent variables: the likelihood of issuing CSR disclosure (*Report*), issuing CSR disclosure with assurance (*Report\_Assurance*), and issuing a CSR disclosure assured by accounting firms (*Report\_Accounting*) after controlling for other potential determinants of issuing standalone CSR disclosure. For this purpose, we employ the following two logistic regression models.

$$Dep. Var._{i,t+1} = \alpha_0 + \alpha_1 CSR\_Commitment_{i,t} + \sum_{k=2,K} \alpha_k control(k) + \varepsilon_{i,t+1} \quad (1)$$

$$Dep. Var._{i,t+1} = \alpha_0 + \alpha_1 Policy_{i,t} + \alpha_2 Implementation_{i,t} + \alpha_3 Monitoring_{i,t} + \alpha_4 Improvement_{i,t} + \sum_{k=5,K} \alpha_k control(k) + \varepsilon_{i,t+1} \quad (2)$$

Within these models, we measure each of the three dependent variables as categorical variables, set equal to 1 if the response is in the affirmative and zero otherwise. For this analysis, we begin in equation (1) by measuring CSR commitment (*CSR\_Commitment*) as the average score of the four CSR drivers, *Policy*, *Implementation*, *Monitoring* and *Improvement*, provided by ASSET4 database (see Appendix I for more detailed information about the definition of each driver). Following, in Model 2, we replace *CSR\_Commitment* by the individual measures for the four CSR drivers and examine whether there is differential effect from each of these drivers on CSR disclosure.

We include a number of control variables in the models of CSR disclosures. These variables, summarized and defined in Appendix III, are as follows.

Presumably firms with more CSR information to disclose might have higher incentives to signal its credibility. Consistent with this view, Cho *et al.* (2014) argue and find that the choice

to obtain assurance on the CSR report is positively associated with the extensiveness of information reported on CSR disclosure. As a result, we add *information* in our model to control for the extensiveness of CSR information. This variable captures the level of CSR related information which is publicly available to all stakeholders.<sup>12</sup> Peters and Romi (2015) provide evidence that the presence of sustainability-oriented corporate governance mechanisms has a positive impact on the voluntary assurance of CSR reports. While we cannot directly control for sustainability-oriented corporate governance, to the extent that sustainability-oriented corporate governance represents part of overall corporate governance effort, we control corporate governance (*Corp\_Gov*) in our model. Industry membership is another important control variable. Existing studies suggest that industries with more exposure to social and environmental risks appear to be more likely to attain third-party assurance for their CSR reports (Simnett *et al.* 2009). In addition, studies such as Kolk and Perego (2010) suggest that a firm's litigation risk can also influence the firm's CSR report assurance decision. As such, in our model, we also control for high-tech or high litigation industry (*Litigation*) and add industry fixed effects to control for the possible influence of industry membership on firms' CSR report assurance decision. Voluntary CSR disclosure could also be part of a firm's voluntary disclosure strategy to reduce the information asymmetry between the firm and its investors (Dhaliwal *et al.* 2011). As such, we include several variables to control for a firm's corporate transparency. These variables include commitment to the high quality of financial disclosure (*Accruals*), international cross-listing (*Cross\_Listing*) and likelihood of providing management forecasts and/or conducting conference calls voluntarily (*Vol\_Dis*), the number of analysts following the firm (*Analysts*), and the choice of auditor (*Big4 auditor*). Prior studies suggest that all these variables could affect a firm's information environment. Finally, following prior studies examining the decision of CSR

---

<sup>12</sup> See Appendix II for details about the definition of this variable.

report assurance (e.g., Simnett *et al.* 2009; Peters and Romi 2005; Dhaliwal *et al.* 2011), we also control for firm size (*Size*), leverage (*Leverage*), return on assets (*ROA*), and firm age (*Age*). Finally across all models, we control for year fixed effects to accommodate the observed trend in increasing CSR disclosure and assurance over time.<sup>13</sup>

In terms of the controls at the country level, Simnett *et al.* (2009) provide evidence that stakeholder orientation at the country level is a significant factor in explaining CSR report assurance. In line with Simnett *et al.*, Kolk and Perego (2010) report that companies from common law countries, due to their higher level of stakeholder orientation are more likely to attain assurance on their CSR reports. Following these studies, we include two country-level controls; common versus code law legal system (*Common*), and the level of a country's stakeholder orientation (*Stake*) in our model.

### 3.2. The Consequence of CSR Disclosure

The second part of our study examines the effect of CSR disclosure, including CSR disclosure issuance (*Report*), CSR disclosure with assurance (*Assurance*), and CSR disclosure assured by accounting firms (*Accounting*), on the likelihood of firms being included in the DJSI. For this purpose, we employ the following logistic regression model.

$$DJSI_{i,t+1} = \alpha_0 + \alpha_1 Report_{i,t} + \alpha_2 Report_{i,t} \times Assurance_{i,t} + \alpha_3 Report_{i,t} \times Accounting_{i,t} + \sum_{k=4,K} \alpha_k control(k) + \varepsilon_{i,t+1} \quad (3)$$

where DJSI is an indicator variable that equals 1 if a firm is included in the Dow Jones Sustainability Index in a given year, and zero otherwise.

---

<sup>13</sup> We obtain all firm-level controls from Compustat-Capital IQ database, except for the data for analyst following which are obtained from IBES, and the data for corporate governance and the extensiveness of CSR information are from Thomson Reuters' ASSET4 ESG data.

The variables of interest in this equation are the three CSR disclosure related categorical variables, *Report* (whether a firm issues standalone CSR report), *Report × Assurance* (whether a standalone CSR report is issued with assurance) and *Report × Accounting* (whether a standalone CSR report is issued with assurance assured by a third party from accounting profession). For robustness, we also employ two alternative CSR disclosure variables in model (3): *Pages* (number of pages of CSR disclosure) and *Information* (the level of CSR related information available to corporate stakeholders provided by ASSET4 to re-examine the effect of having firms' CSR disclosure/information assured on inclusion of DJSI. In order to examine whether CSR disclosure incrementally affects the likelihood of being selected as a DJSI component, we also include a variable measuring a firm's CSR performance observed by the public (*CSR\_Perf*).

Finally, as an endogeneity check, we include the inverse Mills ratio (*IMR*) generated from a probit estimation of Equation (1) into Equation (3).

#### **4. Sample and Data**

To construct our sample, we start from the environmental, social and governance (ESG) metrics from Thomson Reuters ASSET4 database for the period of 2003-2008. ASSET4 specializes in providing objective and auditable ESG Data with a comprehensive global coverage. Data on CSR disclosure include whether a firm issues standalone CSR disclosure, whether the CSR disclosure is issued with assurance. The information about the assurance service provider (if the report is assured) is collected from the following sources: (1) CSR Newswire, (2) CorporateRegister.com, (3) Internet searches, and (4) company websites. Data on the membership of DJSI is collected from DJSI's official website. All other data are obtained from

S&P Capital IQ (CIQ) database, with the exception of the number of analysts following which is obtained from IBES.

Table 1 presents the distribution of our final sample. Panel A shows that our final sample consists of 11,747 firm-year observations from 26 countries. Together, these firms issued a total of 3,188 (27%) standalone CSR reports with 1,109 (37%) of them assured by a third party. Moreover, among all the standalone CSR reports with third party assurance, 378 CSR reports (32%) are assured by accounting firms. The panel also presents summary statistics of our key variables by country including average number of pages of each standalone CSR disclosure, average CSR commitment score, the average level of CSR related information score released by firms and average CSR performance score.<sup>14</sup>

Table 1 Panel B then presents the sample distribution for each year of our sample period. Consistent with extant studies, results show a substantial increase in the issuance of standalone CSR disclosure (also in the length of CSR disclosure) and in the propensity of having CSR disclosure assured over time. However, we do not observe a similar trend for the choice of CSR disclosure assurer. Similarly, in Table 1 Panel C, we also present the sample distribution by industry.

Table 2 presents descriptive statistics for all variables used in our various econometric models. Overall, about 27 percent of our final sample issues standalone CSR disclosure and roughly 10 percent of the sample issues such disclosure with assurance. The percentage of sample firms with assurance provided by the accounting profession is even lower, representing about 3 percent of the sample. We also present Spearman correlation in Table 3. The correlation matrices provide some evidence consistent with our conjecture on the potential effect of CSR

---

<sup>14</sup> A major difference between CSR commitment and CSR performance is that the former is a measure for a firm's ex-ante commitment to CSR initiatives (i.e., what a firm commits to do) while the latter measures the observed/ ex-post CSR outcomes (i.e., what a firms has done).

commitment on CSR assurance (a positive correlation between *CSR\_Commitment* and *Assurance*) and also on the relation between CSR assurance and the inclusion in the DJSI (a positive correlation between *Assurance* and *DJSI*).

## **5. Empirical Results**

### **5.1. The determinants of CSR disclosure**

Table 4 presents the empirical results for Equations (1) and (2) for each of the three CSR disclosure variables (i.e., *Report*, *Assurance*, and *Accounting*). Consistent with the signaling role of CSR reporting and CSR assurance, our results reported in Model 1 and 3 show that CSR commitment is positively associated with CSR report issuance and CSR assurance. We do not, however, find that a positive relation between CSR commitment and the propensity of choosing an accounting firm to assure CSR disclosure (Model 5).

Once we distinguish the four drivers of CSR commitment, we find from Models 2 and 4 that the relationship between CSR commitment and both CSR disclosure and CSR assurance is driven by three of the drivers; the presence of a good CSR policy (*Policy*), stronger CSR monitoring (*Monitoring*, e.g., public disclosure of key performance indicators used by firms and regular internal or external audits on these key indicators), and committing to future CSR improvement (*Improvement*, e.g., setting specific objective to be achieved and commenting on the results of previously set objective). In contrast, CSR Implementation (*Implementation*), defined as the presence of dedicated and specialized team /individuals, does not seem to have an effect on any of these three dependent variables.

Finally, for the decision to choose an assurer from the accounting profession, only the CSR monitoring variable (*Monitoring*) is significant in the predicted direction. Thus, CSR monitoring appears to be the only driver of CSR commitment that affects all of the CSR disclosure variables.



Specifically, the results show that the presence of a mechanism for better CSR monitoring not only fosters the issuance of CSR disclosure and increases the propensity of CSR assurance, but also makes it more likely that the assurer of the CSR disclosure will be from the accounting profession.

Together, our evidence is consistent with our expectation and the signaling role of voluntary adoption of external assurance of CSR disclosure. Moreover, our results also suggest that it is important to consider the different dimension/driver of firms' CSR commitment as different CSR dimensions appear to have different effects on the three CSR disclosure decisions we investigate; the decision to disclose, the decision to seek assurance for the disclosure, and the decision to seek assurance by the accounting profession.

## **5.2. CSR disclosure and DJSI**

The second part of our analysis focuses on the effect of CSR disclosure on a firm's inclusion in the DJSI. To begin, univariate statistics presented in Panel A of Table 5 show that comparing firms with and without CSR disclosure, firms with CSR disclosure tend to have a significantly higher chance of being included in the DJSI. Similar results are also found when we compare CSR reporters with and without CSR assurance. Finally, firms with accounting assurers tend to have a significantly higher chance of being included in the DJSI. This preliminary evidence provides some support for our expectation that CSR disclosure and assurance could play an important role in signaling a firm's CSR commitment.

Panel B of Table 5 then reports the regression results of Equation (3). After controlling for firms' CSR performance, we find a significantly positive association between CSR disclosure (*Report*) and DJSI (Model 1). This finding is robust to using different CSR report variables

including *Pages* (Model 3) and *Information* (Model 5; albeit weakly significant). These results suggest that CSR disclosure is incrementally important with respect to gaining a DJSI membership.

Of equal or perhaps greater importance, Model 2 reveals that CSR disclosures assured by a third party further increases the chance of inclusion in the DJSI. However, consistent with the findings in Table 4, for issuing firms already with assurance, we do not find the type of CSR assurer (accounting profession or not) has any incremental effect on inclusion in the DJSI.

### **5.3.CSR disclosure and socially responsible investors (SRI)**

As a robustness test, in this section, we re-examine equation (3) by testing the effect of CSR disclosure and assurance on the investment decision by socially responsible investors. Presumably, SRI are investors who tend to make investment decisions based on social and environmental criteria, and thus firms attracting more SRI are perceived to have both a greater commitment to CSR and better CSR performance. The dependent variables we use for this analysis are alternatively the number of socially institutional investors (*SRI\_Number*) and the percentage of shares held by these investors (*SRI\_Holding*). Given the difficulties in identifying socially responsible investors directly based on their actual process /criteria of selecting firms for a large number of global institutional investors, we classify institutional investors as socially responsible investors based on their portfolio holdings. Specifically, we consider an institutional investor to be a socially responsible investor if the percentage of shares of DJSI firms (i.e. firms which are included in the Dow Jones Sustainability Index during the sample period) held by the institutional investor is greater than the industry median.

We report the results in Table 6. Panel A of Table 6 presents univariate statistics. These statistics indicate that the number and the percentage of shares held by SRIs tend to be higher for

firms with CSR reports. We also find similar differences across CSR reports with and without assurance, and across CSR reports with assurance but assured by a third party from the accounting versus non-accounting profession.

Panels B and C of Table 6 then report the regression results for *SRI\_Holding* and *SRI\_Number* as dependent variable, respectively. In both Panels, we find consistent results showing that CSR assurance appears to have a significantly positive effect on SRIs even after controlling for firms' CSR performance. Similar to Table 5, we also find no evidence that the type of CSR assurer has incremental effect on the investment decision of SRI after controlling for CSR assurance. The evidence from this additional analysis thus lends further support to the signaling role which CSR report and CSR assurance plays in the inclusion in the DJSI.

#### **5.4. CSR disclosure, DJSI and stakeholder orientation**

Prior studies suggest that the importance of CSR disclosure to market participants could vary with the level of stakeholder orientation in a country. With the international coverage of our sample, we are able to re-examine whether the signaling role of CSR assurance could also vary with a country's stakeholder orientation.

Specifically, we re-estimate equation (3) using samples partitioned based on the level of stakeholder orientation in each country. In untabulated results, we find statistically similar results across both samples (samples from countries with high versus low stakeholder orientation partitioned by the median level of stakeholder orientation). In both samples, we observe a significant positive association between CSR disclosure and the inclusion in the DJSI suggesting that issuing standalone CSR reports plays an important role in signaling the credibility of firms' CSR initiatives in all countries. More important, we also observe a significantly positive

association between CSR assurance and the inclusion in the DJSI in both sub-samples. This finding suggests that CSR assurance plays an incrementally effective role in increasing the chance of CSR reporting firms being included in the DJSI .

## **6. Conclusions**

In this study, we first examine whether and to what extent, firms committing to better corporate social responsibility performance are more likely to issue standalone CSR disclosure, to issue such disclosure with assurance, and to have their CSR disclosure assured by an accounting firm. Our evidence suggests that while a firm's CSR commitment has a positive relation with both CSR report issuance and CSR assurance decision, we find no evidence showing such a positive relationship between CSR commitment and the choice of an external third party from the accounting profession as the assurer.

We next examine whether the issuance of standalone CSR disclosure, the external assurance of CSR disclosure and also the choice of assurer for CSR disclosure play an incrementally important role in the firm's inclusion in the DJSI and to SRI after controlling for firms' CSR performance. Although we find results supporting the signaling role of CSR disclosure and CSR assurance, we do not find the type of assurer matters. Together, the findings from our study suggest that issuing standalone CSR disclosure and also having CSR disclosure assured by an external third party brings real benefits to the issuing firms.



## Reference

- Aguilera, R. V., Rupp, D. E., Williams, C. A., and Ganapathi, J. 2007. Putting the s back in corporate social responsibility: A multilevel theory of social change in organizations. *Academy of Management Review* 32(3): 836–863.
- Ballou, B., Casey, R. J., Grenier, J. H., and Heitger, D. L. 2012. Exploring the strategic integration of sustainability initiatives: Opportunities for accounting research. *Accounting Horizons* 26(2): 265–288.
- Becker\_Olsen, K. LO., Cudmore, B. A., and Hill, R. P. 2006. The impact of perceived corporate social responsibility on consumer behavior. *Journal of Business Research* 59(1): 46–53.
- Bewley, K., and Li. Y. 2000. Disclosure of environmental information by Canadian manufacturing companies: A voluntary disclosure perspective. *Advances in Environmental Accounting and Management* 1: 201–226.
- Blaconiere, W. G., and Northcutt, D. 1997. Environmental information and market reactions to environmental legislation. *Journal of Accounting, Auditing and Finance* 12(2): 149–178.
- Blaconiere, W. G., and Patten, D. M. 1994. Environmental disclosures, regulatory costs, and changes in firm value. *Journal of Accounting and Economics* 18: 357–77.
- Carey, P., Simnett, R., and Tanewski, G. 2000. Voluntary demand for internal and external auditing by family businesses. *Auditing: A journal of Practice and Theory* 19: 37–51.
- Casey, R. J., and Grenier, J. H. 2014. Understating and contributing to the enigma of corporate social responsibility (CSR) assurance in the United States. *Auditing: A Journal of Practice and Theory* 34(1): 97–130.
- Cohen, J., and Simnett, R. 2014. CSR and assurance services: A research agenda. *Auditing: A Journal of Practice and Theory* 34(1): 59–74.
- Cho, C. H., Michelon, G., Patten, D. M., and Roberts, R. W. 2014. CSR report assurance in the USA: An empirical investigation of determinants and effects. *Sustainability Accounting, Management and Policy Journal* 5(2): 130–148.
- Cho, C. H., and Patten, D. M. 2007. The role of environmental disclosures as tools of legitimacy: A research note. *Accounting, Organization and Society* 32: 639–647.
- Clarkson, P., Li. Y., Richardson, G., and Vasvari, F. 2008. Revising the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organization, and Society* 33: 303–327.
- Dhaliwal, D. S., Radhakrishnan, S., Tsang, A., and Yang, Y. G. 2012. Nonfinancial disclosure and analyst forecast accuracy: International evidence on corporate social responsibility disclosure. *The Accounting Review* 87(3): 723–759.
- Dhaliwal, D. S., Li, O. Z., Tsang, A., and Yang, Y. G. 2011. Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting. *The Accounting Review* 86(1): 59–100.
- Dhaliwal, D. S., Li, O. Z., Tsang, A., and Yang, Y. G. 2014. Voluntary nonfinancial disclosure and the cost of equity capital: The roles of stakeholder orientation and financial transparency. *Journal of Accounting and Public Policy* 33: 328–355.
- Elliott, W. B., Jackson, K. E., Peecher, M. E., and White, B. J. 2014. The unintended effect of corporate social responsibility performance on investors' estimated of fundamental value. *The Accounting Review* 89(1) 275–302.
- Enviroics International. 2002. Corporate social responsibility monitor. Enviroics International.
- Fomburn, C. J., and Shanley, M. 1990. What's in a name? Reputation building and corporate strategy. *Academy of Management Journal* 33(2): 233–258.
- Godfrey, P. C., Merrill, C. B., and Hansen, J. M. 2009. The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. *Strategic Management Journal* 30: 425–445.
- Gray, R. 2006. Social, environmental and sustainability reporting and organizational value creation? Whose value? Whose creation? *Accounting, Auditing and Accountability Journal* 19(6): 793–819.

- Global Reporting Initiative (GRI). 2013. The external assurance of sustainability reporting. <https://www.globalreporting.org/resource/library/GRI-Assurance.pdf>
- Groza, M. D., Pronschinske, M. R., and Walker, M. 2011. Perceived organizational motives and consumer responses to proactive and reactive CSR. *Journal of Business Ethics* 102: 639–652.
- Hemingway, C. A., and MacLagan, P. W. 2004. Managers' personal values as drivers of corporate social responsibility. *Journal of Business Ethics* 50(1): 33–44.
- Hillman, A. J., and Keim, G. D. 2001. Shareholder value, stakeholder management, and social issues: What's the bottom line? *Strategic Management Journal* 22: 125–139.
- Holder-Webb, L., Cohen, J. R., Nath, L., and Wood, D. 2009. The supply of corporate social responsibility disclosure among U.S. firms. *Journal of Business Ethics* 84(4): 497–527.
- Hobson, J. L., and Kachelmeier, S. J. 2005. Strategic disclosure of risky prospects: A laboratory experiment. *The Accounting Review* 80(3): 825–846.
- Ingram, R. W., and Frazier, K. B. 1980. Environmental performance and corporate disclosure. *Journal of Accounting Research* 18: 614–622.
- Jennings, R. 1987. Unsystematic security price movements, management earnings forecasts, and revisions in consensus analyst earnings forecasts. *Journal of Accounting Research* 25: 90–110.
- Kim, Y., Park, M., and Wier, B. 2012. Is earnings quality associated with corporate social responsibility? *The Accounting Review* 87(3): 761–796.
- King, A. 1995. Avoiding ecological surprise: Lesson from long-standing communities. *Academy of Management Review* 20(4): 961–985.
- Koh, P., Qian, C., and Wang, H. 2013. Firm litigation risk and the insurance value of corporate social performance. *Strategic Management Journal* 35(1): 1464–1482.
- Kolk, A., and Perego, P. 2010. Determinants of the adoption of sustainability assurance statements: an international investigation. *Business Strategy and the Environment* 29(3): 182–198.
- KPMG. 2011. *KPMG international survey of corporate social responsibility reporting 2011*. KPMG International Cooperative 2011.
- Manetti, G., and Becatti, L. 2009. Assurance services for sustainability reports: Standards and empirical evidence. *Journal of Business Ethics* 87: 289–298.
- Matsumura, E. M., Prakash, R., and Vera-Munoz, S. C. 2014. Firm-value effects of carbon emissions and carbon disclosures *The Accounting Review* 89(2): 695–724.
- Mercer, M. 2004. How do investors assess the credibility of management disclosures? *Accounting Horizons* 18: 185–196.
- Mitchell, R. K., Agle, B. R., and Wood, D. J. 1997. Towards a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review* 22(4): 853–886.
- Mock, T. J., Strohm, C., and Swartz, K. M. 2007. An examination of worldwide assured sustainability reporting. *Australian Accounting Review* 17: 67–77.
- Mock, T. J., Rao, S. S., and Srivastava, R. P. 2013. The development of worldwide sustainability reporting assurance. *Australian Accounting Review* 23(3): 280–294.
- O'Dwyer, B. 2011. The case of sustainability assurance: Constructing a new assurance service. *Contemporary Accounting Research* 28(4): 1230–1266.
- O'Dwyer, B., and Owen, D. L. 2005. Assurance statement practice in environmental, social, and sustainability reporting: a critical evaluation. *The British Accounting Review* 37: 205–229.
- Patten, D. M. 2002. The relation between environmental performance and environmental disclosure: A research note. *Accounting, Organization and Society* 27: 763–773.
- Peters, G. F., and Romi, A. M. 2015. The association between sustainability governance characteristics and the assurance of corporate sustainability reports. *Auditing: A Journal of Practice and Theory* 34(1): 163–198.
- Plumlee, M., Brown, D. and Marshall, S. 2008. The impact of voluntary environmental disclosure quality on firm value. Working paper, University of Utah.

- Ramanna, K. 2013. A framework for research on corporate accountability reporting. *Accounting Horizon* 27(2): 409–432.
- Roberts, P. W., and Dowling, G. R. 2002. Corporate reputation and sustained superior financial performance. *Strategic Management Journal* 23(12): 1077–1093.
- Robinson, M. J., Kleffner, A., and Bertels, S. 2008. The value of a reputation for corporate social responsibility: Empirical evidence. Working paper, University of Calgary.
- Servaes, H., and Tamayo, A. 2013. The impact of corporate social responsibility on firm value: The role of customer awareness. *Management Science* 59(5): 1045–1061.
- Simnett, R., Vanstraelen, A., and Chua, W. 2009. Assurance on sustainability reports: An international comparison. *The Accounting Review* 84(3) 937–967.
- Turban, D. B., and Greening, D. W. 1996. Corporate social performance and organizational attractiveness to prospective employees. *Academy of Management Journal* 40(3): 658–672.
- Verrecchia, R. 2001. Essays on disclosure. *Journal of Accounting & Economics* 32: 91–180.
- Wans, N. 2015. Corporate social responsibility and market-based consequences of adverse corporate events: Evidence from restatement announcements. Working paper.
- Wartick, S., and Cochran, P., 1985. The evolution of the corporate social performance model. *Academy of Management Review* 10: 758–769.
- Weaver, R., Trevino, L. K., and Cochran, P. L. 1999. Integrated and decoupled corporate social performance: Management commitments, external pressures, and corporate ethics. *Academy of Management Journal* 42(5): 539–552.
- Wiseman, J. 1982. An evaluation of environmental disclosures made in corporate annual reports. *Accounting, Organizations and Society* 7(1): 53–63.



**Appendix I: CSR Commitment (CSR Commitment)**

**POLICY**

<b>Environmental Dimension</b>	<i>Does the company have a POLICY, code of conduct, procedure, programme, compliance mechanism or management system for</i>
(1) Resource Reduction	reducing the use of natural resources, such as raw materials, energy or water? and finding more eco-efficient solutions by improving supply chain management?
(2) Emission Reduction	reducing environmental emissions like air emissions, waste, discharge to water or its impacts on biodiversity? and partnering with NGOs, industry organizations or supra-governmental organizations to reduce the company's environmental impact in the local or broader community?
(3) Product Innovation	supporting the research and development of environmentally efficient products or services through new technologies and processes (life cycle assessment - LCA) or eco-designed (reduced energy consumption or emissions), dematerialized products with extended durability?
<b>Social Dimension</b>	
(1) Employment Quality	offering rewarding and fair employment benefits (salary, profit sharing, pension plan, health care, other insurances and other benefits)? and maintaining long term employment growth and stability (avoidance of lay-offs, turnover limitation, net employment creation or maintenance of general relations with trade unions)?
(2) Health & Safety	integrating into its day-to-day operations a concern for workforce health and safety, including the physical and mental health, well-being and stress level of all employees?
(3) Training & Development	training and educating its workforce through programmes to develop their skills and competences (occupational, human or social relations and communications) or supporting their career development (promotion from within, job rotation or career ending) and continued employability?
(4) Diversity & Opportunity	the promotion of an effective life-work balance or of a family friendly working environment (vacations, part-time, flex-time, career breaks, maternity leave, sabbaticals, etc.)? and the promotion of diversity and equal opportunities as well as the exclusion of discrimination, harassment or unfair treatment of people with disabilities, or because of gender, age, ethnicity, race, nationality, religion, or sexual orientation?
(5) Human Rights	guaranteeing the freedom of association universally applied independent of local laws? And the exclusion of child, forced or compulsory labor?
(6) Community	ensuring its good citizenship in the community (donations of cash, goods, or staff time; accurate advertising; open attitude and dialogue with stakeholders; or addressing the needs of indigenous people), as well as the protection of public health (eliminating industrial accidents, non-ionising radiation protection, etc.)? and respecting business ethics by avoiding bribery and corruption, setting guidelines on political contributions and lobbying, paying fair taxes?
(7) Product Responsibility	producing quality, value-added goods and services or integrating the customer's health, safety and security? and preserving the customer's integrity and privacy (data security, confidentiality) through accurate product information, labelling and marketing?

**IMPLEMENTATION**

<b>Environmental Dimension</b>	<i>To guarantee better IMPLEMENTATION, does the company claim to have, describe or show</i>
(1) Resource Reduction	a commitment or public endorsement from a senior management or board member, or a dedicated specialized team/individual? and that the key employees have the necessary training, processes, codes of conduct and tools (whistle blowing, ombudsman, hotline, suggestion box, etc.)?
(2) Emission Reduction	same as above
(3) Product Innovation	same as above
<b>Social Dimension</b>	
(1) Employment Quality	same as above
(2) Health & Safety	same as above
(3) Training and Development	same as above
(4) Diversity and Opportunity	same as above
(5) Human Rights	same as above
(6) Community	same as above
(7) Product Responsibility	same as above

**MONITORING**

<b>Environmental Dimension</b>	<i>To guarantee better MONITORING, does the company</i>
(1) Resource Reduction	publicly share the results of a monitoring process, for example the key performance indicators used within a balanced scorecard programme? and conduct regular internal or external audits?
(2) Emission Reduction	same as above
(3) Product Innovation	same as above
<b>Social Dimension</b>	
(1) Employment Quality	same as above
(2) Health & Safety	same as above
(3) Training and Development	same as above
(4) Diversity and Opportunity	same as above
(5) Human Rights	same as above

- (6) Community same as above
- (7) Product Responsibility same as above

---

**IMPROMENTS**

---

**Environmental Dimension**

*To guarantee better IMPROVEMENTS, does the company*

- (1) Resource Reduction set specific quantitative objectives to be achieved? and comment on the results of previously set objectives?
- (2) Emission Reduction same as above
- (3) Product Innovation same as above

**Social Dimension**

- (1) Employment Quality same as above
  - (2) Health & Safety same as above
  - (3) Training and Development same as above
  - (4) Diversity and Opportunity same as above
  - (5) Human Rights same as above
  - (6) Community same as above
  - (7) Product Responsibility same as above
- 

Source of information: Thomson Reuters ASSET4 ESG data manual.

**Appendix II: CSR Information (Information)**

***Environmental Dimension***

1	<i>Toxic Chemicals</i>	Does the company report on initiatives to reduce, reuse, substitute or phase out the use of sector or company-specific persistent, bio-accumulative and toxic (PBT) chemicals?
2	<i>Green Buildings</i>	Does the company report or provide information on company offices or buildings that are energy efficient?
3	<i>Energy Efficiency Initiatives</i>	Does the company report on initiatives to use renewable energy sources in its production process? and Does the company report on initiatives to increase its energy efficiency overall?
4	<i>Water Recycling</i>	Does the company report on initiatives to reuse or recycle water (this includes wastewater, other used water, cooling water, etc.)? or Does the company report on initiatives to reduce the amount of water used?
5	<i>Environmental Supply Chain Management</i>	Does the company report or show to use environmental criteria in the selection or monitoring process of its suppliers or sourcing partners? and Does the company report or show to be ready to end a partnership with a sourcing partner if environmental criteria are not met?
6	<i>Land Use</i>	Does the company report on initiatives to reduce the environmental impact of land owned, leased or managed for production activities or extractive use?
7	<i>Biodiversity Impact</i>	Does the company report on initiatives for the protection and restoration of native ecosystems and species, biodiversity, protected and sensitive areas?
8	<i>CO<sub>2</sub> Reduction</i>	Does the company report on initiatives or new production techniques, to recycle, reduce, reuse, substitute or phase out CO <sub>2</sub> or CO <sub>2</sub> equivalents in the production process?
9	<i>F-Gases Emissions</i>	Does the company report on initiatives to recycle, reduce, reuse, or phase out fluorinated gases such as HFC's (hydrofluorocarbons), PFC's (perfluorocarbons) or SF <sub>6</sub> (Sulphur hexafluoride)?
10	<i>Ozone-Depleting Substances</i>	Does the company report on initiatives to reduce, substitute, or phase out ozone-depleting (CFC-11 equivalents, chlorofluorocarbon) substances?
11	<i>NO<sub>x</sub> and SO<sub>x</sub> Emissions</i>	Does the company report on initiatives to reduce, reuse, recycle, substitute, or phase out SO <sub>x</sub> (Sulphur oxides) or NO <sub>x</sub> (nitrogen oxides) emissions?
12	<i>VOC or Particulate Matter Emissions</i>	Does the company report on initiatives to reduce, substitute, or phase out volatile organic compounds (VOC) or particulate matter less than ten microns in diameter (PM <sub>10</sub> )?
13	<i>Waste Reduction</i>	Does the company report on initiatives to recycle, reduce, reuse, substitute, treat or phase out waste or hazardous waste or wastewater? Also considers biological oxygen demand (BOD <sub>5</sub> ), chemical oxygen demand (COD), total suspended solids (TSS), nitrate and nitrogen, phosphorous, persistent organic pollutants, metals or absorbable organic halogens (AOX).
14	<i>Innovative Production</i>	Does the company report on the concentration of production locations in order to limit the environmental impact during the production process? or Does the company report on other significant initiatives (internal emission trading, new production techniques, etc.) to improve the global environmental impact (all emissions) during the production process?
15	<i>Environmental Partnerships</i>	Does the company report on partnerships or initiatives with specialized NGOs, industry organizations, governmental or supragovernmental organizations that focus on improving environmental issues?
16	<i>Environmental Citizenship</i>	Does the company report or provide information on company-generated initiatives to restore the environment? or Does the company make in-kind or cash donations to environmental organizations or projects?
17	<i>Sustainable Transportation</i>	Does the company report or provide information on the environmental impact of transportation used for logistics or staff? or Does the company report on initiatives to reduce the environmental impact of transportation used for logistics or staff?
18	<i>Spill Impact Reduction</i>	Does the company report on initiatives to reduce, avoid or minimize the effects of spills or other polluting events (crisis management system)? or Does the company report on an environmental disaster recovery plan?
19	<i>Commercial Risks and/or Opportunities Due to Climate Change</i>	Does the company make a clear statement that it believes that climate change can represent commercial risks and/or opportunities?
20	<i>Environmental Expenditures</i>	Does the company report on its environmental expenditures? or Does the company report to make proactive environmental investments or expenditures to reduce future risks or increase future opportunities?
21	<i>Environmental Products</i>	Does the company report on at least one product line that is designed to have positive effects on the environment or which is environmentally labeled and marketed? ("No" = 0, "Yes" =>1 )
22	<i>Energy Footprint</i>	Does the company report on the energy consumption of its major products (annualized lifetime energy requirements reported in joules)? or Does the company describe its home energy conservation initiatives or other initiatives in place to reduce the energy footprint of its products during their use?
23	<i>Environmental Asset Management</i>	Does the company report on assets under management which employ environmental screening criteria or environmental factors in the investment selection process? ("No" = 0, "Yes" =>1 )
24	<i>Eco-Design Products</i>	Does the company report on specific products which are designed for reuse, recycling or the reduction of environmental impacts?
25	<i>Organic Products</i>	Does the company report on its organic or environmentally friendly grown products? or Does the company report or show initiatives to produce or promote organic products?
26	<i>Product Impact Minimization</i>	Does the company report about procedures and programs to reduce the potential risks of products entering the environment (reclaimed, recycled, reused)? or Does the company report about product

features and applications that will promote responsible, efficient, cost effective and environmentally preferable use?

- 27 *Environmental Labels and Awards* Does the company report on voluntary code compliance (FSC, Green fishery, etc.), product labels or awards with respect to environmental responsibility of its products that the company is qualified to use or has received?

**Social Dimension**

- |    |  |   |
|----|--|---|
| 1  | <i>Bonus Plan</i>                                      | Does the company claim to provide a bonus plan to at least the middle management level? and Is the bonus plan linked to individual performance and the financial results of the company?  |
| 2  | <i>Employment Benefits</i>                             | Does the company claim to provide a pension fund, health care and other insurances that go beyond the legal minimum?  |
| 3  | <i>HIV-AIDS Programme</i>                              | Does the company report on policies or programs on HIV/AIDS for the workplace or beyond?  |
| 4  | <i>Internal Promotion</i>                              | Does the company claim to favor promotion from within?  |
| 5  | <i>Management Training</i>                             | Does the company claim to provide regular staff and business management training for all the senior and middle management?  |
| 6  | <i>Development</i>                                     | Does the company claim to cooperate with schools or universities? or Does the company make substantial donations to schools and universities?   |
| 7  | <i>Worklife Balance</i>                                | Does the company claim to provide vacations, career breaks and sabbaticals that go beyond the legal minimum? or Does the company promote part-time or flex-time hours, paid overtime, or work hours/week better than the legal requirements?  |
| 8  | <i>Family Friendly</i>                                 | Does the company claim to provide day care services in some of its subsidiaries? or Does the company claim to provide maternity leave that goes beyond that legally mandated? OR Has the company won a family friendly prize like a "Working Mother Award"?   |
| 9  | <i>Human Rights/ Suppliers Social Impact</i>           | Does the company report or show to use human rights criteria in the selection or monitoring process of its suppliers or sourcing partners? and Does the company report or show to be ready to end a partnership with a sourcing partner if human rights criteria are not met?   |
| 10 | <i>Diseases of the Developing World</i>                | Does the company claim to conduct research and development on drugs for diseases in the developing world that might have a poor expected direct market return?  |
| 11 | <i>Crisis Management</i>                               | Does the company report on crisis management systems (preparedness) to reduce or minimize the effects of reputation disasters (public relations), or Does it have a disaster recovery plan?   |
| 12 | <i>Product Quality Management</i>                      | Does the company claim to have quality management systems or initiatives, such as ISO 9000 or Six Sigma Quality Management?   |
| 13 | <i>Product Sustainable Consumption</i>                 | Does the company reportedly develop and/or market products or services which foster specific health and safety benefits (for example, food that is healthy, organic or has a positive nutritional value) or less harmful products? and Does the company limit advertisement of food with high fat, sugar or salt to children? |
| 14 | <i>Product Clinical Trials and Research Guidelines</i> | Does the company reportedly develop or follow clear guidelines for human clinical research (World Health Organization (WHO) guidelines for good clinical research)? and Does the company show full transparency in the publication of its clinical trials?  |
| 15 | <i>Retailing Responsibility</i>                        | Does the company reportedly promote and support public health by excluding potential harmful products from its retail offering (fire arms, genetically modified organisms (GMOs), alcohol, tobacco, etc.)   |

Source of information: Thomson Reuters ASSET4 ESG data manual.

### Appendix III: Variable Definition

<i>Variables</i>	<i>Definition</i>
<i>Report</i>	An indicator variable that equals 1 if a firm issues a standalone CSR report in a given year, and 0 otherwise.
<i>Pages</i>	The total number of pages of each standalone CSR report.
<i>Information</i>	The level of CSR related information available to corporate stakeholders provided by ASSET4 (see Appendix II for more detailed information about the definition of this variable).
<i>Assurance</i>	An indicator variable that equals 1 if a firm issues a standalone CSR report with external assurance in a given year, and 0 otherwise.
<i>Accounting</i>	An indicator variable that equals 1 if a firm's standalone CSR report is assured by an accounting firm in a given year, and 0 otherwise.
<i>CSR_Commitment</i>	The average score of the four CSR drivers across the social and environmental domains including CSR Policy, CSR Implementation, CSR Monitoring and CSR Improvement provided by ASSET4 (see Appendix I for more detailed information about the definition of each driver).
<i>CSR_Perf</i>	The composite CSR performance score is defined as the equally weighted average of the social and environmental score from ASSET4 for the focal firm for every year in our sample.
<i>Corp_Gov</i>	A measure of corporate governance provided by ASSET4.
<i>Size</i>	The natural logarithm of total assets in millions of U.S. dollars.
<i>Leverage</i>	The ratio of total long-term debt to total assets.
<i>ROA</i>	The ratio of net income to total assets.
<i>Age</i>	Firm age.
<i>Accruals</i>	A measure of firm-level financial opacity measured by country-, industry- and year-adjusted total scaled accruals based on Bhattacharya et al. (2003). Scaled accruals are computed using balance sheet and income statement information: $ACCRUAL = (\Delta CA - \Delta CL - \Delta CASH + \Delta STD - DEP + \Delta TP) / \text{lag}(TA)$ , where $\Delta CA$ is the change in total current assets; $\Delta CL$ is the change in total current liabilities; $\Delta CASH$ is the change in cash; $\Delta STD$ is the change in the current portion of long-term debt included in total current liabilities; $DEP$ is depreciation and amortization expense; $\Delta TP$ is the change in income taxes payable; and $\text{lag}(TA)$ is total assets at the end of the previous year.
<i>Cross_Listing</i>	The total number of unique foreign countries where a firm has cross-listed its security by each year during our sample period.
<i>Vol_Disc</i>	A measure of voluntary disclosure which equals 1 if a firm issues either management forecast or conference call in a year, 2 if a firm issues both management forecast and conference call in a year, and 0 otherwise.
<i>Analysts</i>	Number of analysts following for each firm during a year. The data is obtained from IBES.
<i>Big4</i>	An indicator variable that equals 1 if a firm's auditor is a Big 4 auditor in a given year, and 0 otherwise.
<i>Litigation</i>	An indicator variable that equals 1 if a firm is in a high-tech industry (SIC 2833-2836, 8731-8734, 7371-7379, 3570-3577, and 3600-3674), and 0 otherwise.
<i>Common</i>	An indicator variable that equals 1 if a firm is domiciled in a country with a common law legal system, and 0 otherwise (Data source: La Porta et al. 2006).
<i>Stake</i>	A country-level measure of stakeholder orientation obtained from Dhaliwal et al. (2012).
<i>DJSI</i>	An indicator variable that equals 1 if a firm is included in the Dow Jones Sustainability Index (DJSI) in a given year, and zero otherwise.

**TABLE 1 Descriptive Statistics**

Panel A: Statistics by Country

	1	2	3	4	5	6	7	8	9	10	11	
Country	N	N (Report)	% (Report) C2/C1	N (Assurance)	% (Assurance) C4/C2	N (Accounting)	% (Accounting) C6/C4	Pages	CSR Commitment	Information	CSR Performance	
1	Australia	422	112	26.54	46	41.07	14	30.43	19.42	0.47	0.44	0.46
2	Austria	92	11	11.96	6	54.55	2	33.33	10.99	0.44	0.45	0.46
3	Belgium	129	22	17.05	13	59.09	8	61.54	12.82	0.45	0.44	0.45
4	Brazil	35	9	25.71	2	22.22	2	100.00	40.77	0.59	0.59	0.5
5	Canada	701	122	17.40	24	19.67	20	83.33	9.31	0.44	0.41	0.45
6	Chile	13	5	38.46	4	80.00	3	75.00	49.69	0.58	0.53	0.49
7	Denmark	123	38	30.89	22	57.89	18	81.82	18.85	0.45	0.42	0.45
8	Finland	129	63	48.84	21	33.33	12	57.14	26.46	0.54	0.51	0.48
9	France	431	183	42.46	68	37.16	53	77.94	46.72	0.57	0.54	0.5
10	Germany	373	134	35.92	35	26.12	20	57.14	29.26	0.53	0.51	0.49
11	Hong Kong	260	32	12.31	21	65.63	5	23.81	5.12	0.4	0.41	0.46
12	India	30	1	3.33	1	100.00	0	0.00	2.17	0.5	0.5	0.48
13	Ireland	135	16	11.85	2	12.50	0	0.00	6.6	0.46	0.42	0.46
14	Italy	250	86	34.40	51	59.30	28	54.90	54.82	0.49	0.47	0.47
15	Japan	1834	726	39.59	377	51.93	5	1.33	22.65	0.47	0.45	0.45
16	Netherlands	188	68	36.17	33	48.53	30	90.91	19.48	0.56	0.49	0.48
17	New Zealand	47	8	17.02	2	25.00	0	0.00	14.23	0.44	0.43	0.45
18	Norway	106	25	23.58	9	36.00	9	100.00	18.92	0.51	0.48	0.47
19	Portugal	53	26	49.06	14	53.85	10	71.43	58.65	0.52	0.51	0.47
20	South Africa	24	9	37.50	7	77.78	6	85.71	59.28	0.56	0.52	0.51
21	South Korea	45	14	31.11	11	78.57	6	54.55	30.82	0.55	0.55	0.49
22	Spain	241	116	48.13	63	54.31	45	71.43	76.79	0.54	0.52	0.48
23	Sweden	268	80	29.85	20	25.00	20	100.00	23.27	0.52	0.47	0.46
24	Switzerland	353	100	28.33	28	28.00	11	39.29	21	0.5	0.47	0.47
25	United Kingdom	1498	568	37.92	258	45.42	45	17.44	18.4	0.51	0.46	0.48
26	United States	3967	614	15.48	53	8.63	6	11.32	7.12	0.45	0.42	0.47
		11,747	3,188	27.14%	1,191	37.36%	378	31.74%	27.06	0.50	0.48	0.47

Panel B: Statistics by Year

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>Year</b>	<b>N</b>	<b>N (Report)</b>	<b>% (Report) C2/C1</b>	<b>N (Assurance)</b>	<b>% (Assurance) C4/C2</b>	<b>N (Accounting)</b>	<b>% (Accounting) C6/C4</b>	<b>Pages</b>	<b>CSR Commitment</b>	<b>Information</b>	<b>CSR Performance</b>
2003	931	203	21.80	53	26.11	21	39.62	12.42	0.47	0.44	0.46
2004	1,715	410	23.91	119	29.02	31	26.05	14.05	0.46	0.44	0.47
2005	2,105	546	25.94	190	34.80	54	28.42	16.10	0.47	0.44	0.47
2006	2,118	596	28.14	235	39.43	78	33.19	19.06	0.47	0.44	0.47
2007	2,263	664	29.34	262	39.46	82	31.30	20.73	0.48	0.45	0.47
2008	2,615	769	29.41	332	43.17	112	33.73	21.87	0.49	0.46	0.47
	11,747	3,188	27.14%	1,191	37.36%	378	31.74%	17.37	0.47	0.45	0.47

Panel C: Statistics by Industry

	1	2	3	4	5	6	7	8	9	10	11
Industry	N	N (Report)	% (Report) C2/C1	N (Assurance)	% (Assurance) C4/C2	N (Accounting)	% (Accounting) C6/C4	Pages	CSR Commitment	Information	CSR Performance
1 Mining/Construction	573	185	32.29	73	39.46	29	39.73	30.01	0.48	0.45	0.46
2 Food	446	163	36.55	65	39.88	12	18.46	21.81	0.50	0.46	0.47
3 Textiles/Print/Publish	520	130	25.00	30	23.08	12	40.00	17.23	0.48	0.45	0.46
4 Chemicals	516	227	43.99	94	41.41	36	38.30	25.52	0.56	0.50	0.48
5 Pharmaceuticals	365	111	30.41	48	43.24	17	35.42	19.48	0.48	0.45	0.48
6 Extractive	603	152	25.21	70	46.05	38	54.29	14.85	0.47	0.45	0.46
7 Manf: Rubber/glass/etc	238	112	47.06	41	36.61	12	29.27	25.49	0.53	0.49	0.47
8 Manf: Metal	368	111	30.16	35	31.53	10	28.57	21.36	0.49	0.46	0.45
9 Manf: Machinery	397	127	31.99	41	32.28	15	36.59	18.95	0.50	0.45	0.46
10 Manf: Electrical Equip.	299	110	36.79	50	45.45	15	30.00	21.08	0.54	0.50	0.48
11 Manf: Transport Equip.	360	190	52.78	59	31.05	11	18.64	37.86	0.56	0.53	0.49
12 Manf: Instruments	392	95	24.23	25	26.32	3	12.00	13.78	0.48	0.44	0.46
13 Manf: Misc.	59	15	25.42	3	20.00	0	0.00	12.41	0.46	0.45	0.46
14 Computers	420	117	27.86	33	28.21	1	3.03	17.49	0.51	0.48	0.47
15 Transportation	932	241	25.86	111	46.06	45	40.54	18.78	0.48	0.45	0.47
16 Utilities	596	264	44.30	133	50.38	35	26.32	35.54	0.52	0.51	0.48
17 Retail:Wholesale	262	71	27.10	23	32.39	6	26.09	14.87	0.46	0.42	0.46
18 Retail: Misc	665	120	18.05	40	33.33	18	45.00	12.27	0.44	0.42	0.46
19 Retail: Restaurant	98	28	28.57	13	46.43	3	23.08	18.78	0.50	0.45	0.48
20 Financial	1,395	284	20.36	91	32.04	34	37.36	14.57	0.44	0.43	0.48
21 Insurance/Real Estate	794	114	14.36	55	48.25	11	20.00	9.17	0.41	0.41	0.45
22 Services	1,126	152	13.50	29	19.08	4	13.79	7.90	0.43	0.40	0.46
23 Others	323	69	21.36	29	42.03	11	37.93	15.32	0.43	0.43	0.46
	11,747	3,188	27.14%	1,191	37.36%	378	31.74%	19.33	0.48	0.46	0.47



**TABLE 2 Descriptive Statistics**

<b>Variable</b>	<b>Mean</b>	<b>Std.</b>	<b>1%</b>	<b>25%</b>	<b>Median</b>	<b>75%</b>	<b>99%</b>
<i>Report</i>	0.27	0.45	0	0	0	1	1
<i>Assurance</i>	0.10	0.30	0	0	0	0	1
<i>Accounting</i>	0.03	0.18	0	0	0	0	1
<i>Pages</i>	18.22	42.31	0	0	0	17	200
<i>CSR_Commitment</i>	0.48	0.13	0.24	0.37	0.46	0.57	0.77
<i>Policy</i>	0.51	0.21	0.11	0.34	0.51	0.69	0.88
<i>Implementation</i>	0.49	0.19	0.14	0.32	0.46	0.64	0.89
<i>Monitoring</i>	0.45	0.12	0.30	0.38	0.40	0.51	0.83
<i>Improvement</i>	0.46	0.08	0.37	0.42	0.43	0.49	0.71
<i>Information</i>	0.45	0.11	0.27	0.38	0.41	0.51	0.77
<i>CSR_Perf</i>	0.47	0.05	0.39	0.43	0.46	0.49	0.61
<i>Corp_Gov</i>	0.53	0.30	0.02	0.24	0.61	0.79	0.96
<i>Size</i>	8.13	1.49	4.28	7.24	8.15	9.09	11.42
<i>Leverage</i>	0.25	0.19	0.00	0.13	0.23	0.34	0.75
<i>ROA</i>	5.70	5.49	-4.32	2.64	5	7.62	24.74
<i>Age</i>	74.84	49.83	4	39	75.73	95	224
<i>Accruals</i>	0.12	0.59	-0.44	-0.02	0.03	0.15	1.57
<i>Cross_Listing</i>	1.01	1.23	0	0	1	2	5
<i>Vol_Disc</i>	1.07	0.70	0	1	1	2	2
<i>Analysts</i>	11.80	11.38	0	0	10	18	46
<i>Big4</i>	0.86	0.35	0	1	1	1	1
<i>Litigation</i>	0.19	0.39	0	0	0	0	1
<i>Common</i>	0.60	0.49	0	0	1	1	1
<i>Stake</i>	-0.45	0.77	-1.16	-1.16	-0.95	0.01	1.47
<i>DJSI</i>	0.21	0.41	0	0	0	0	1

**TABLE 3 Correlations (Spearman)**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1 <i>Report</i>																				
2 <i>Assurance</i>	<b>0.55</b>																			
3 <i>Accounting</i>	<b>0.30</b>	<b>0.54</b>																		
4 <i>Pages</i>	<b>0.97</b>	<b>0.58</b>	<b>0.33</b>																	
5 <i>Information</i>	<b>0.54</b>	<b>0.35</b>	<b>0.21</b>	<b>0.55</b>																
6 <i>CSR_Commitment</i>	<b>0.55</b>	<b>0.37</b>	<b>0.22</b>	<b>0.57</b>	<b>0.84</b>															
7 <i>CSR_Perf</i>	<b>0.44</b>	<b>0.29</b>	<b>0.19</b>	<b>0.45</b>	<b>0.76</b>	<b>0.73</b>														
8 <i>Corp_Gov</i>	<b>0.10</b>	0.00	<b>0.05</b>	<b>0.08</b>	<b>0.20</b>	<b>0.28</b>	<b>0.30</b>													
9 <i>Size</i>	<b>0.34</b>	<b>0.23</b>	<b>0.16</b>	<b>0.36</b>	<b>0.48</b>	<b>0.49</b>	<b>0.47</b>	<b>0.13</b>												
10 <i>Leverage</i>	<b>0.04</b>	<b>0.04</b>	0.01	<b>0.05</b>	<b>0.05</b>	<b>0.03</b>	-0.01	0.0142	<b>0.02</b>											
11 <i>ROA</i>	<b>-0.03</b>	-0.01	0.00	<b>-0.03</b>	-0.01	<b>0.03</b>	-0.01	<b>0.14</b>	<b>-0.04</b>	<b>-0.16</b>										
12 <i>Age</i>	<b>0.16</b>	<b>0.08</b>	<b>0.04</b>	<b>0.16</b>	<b>0.20</b>	<b>0.19</b>	<b>0.17</b>	<b>-0.03</b>	<b>0.22</b>	<b>0.04</b>	<b>-0.12</b>									
13 <i>Accruals</i>	<b>-0.12</b>	<b>-0.12</b>	<b>-0.06</b>	<b>-0.13</b>	<b>-0.10</b>	<b>-0.10</b>	<b>-0.04</b>	<b>0.28</b>	<b>-0.08</b>	-0.01	<b>0.11</b>	<b>-0.10</b>								
14 <i>Cross_Listing</i>	<b>0.30</b>	<b>0.25</b>	<b>0.20</b>	<b>0.33</b>	<b>0.37</b>	<b>0.39</b>	<b>0.35</b>	<b>0.06</b>	<b>0.34</b>	<b>-0.04</b>	<b>0.02</b>	<b>0.06</b>	<b>-0.13</b>							
15 <i>Vol_Disc</i>	<b>0.11</b>	<b>0.04</b>	<b>0.06</b>	<b>0.12</b>	<b>0.12</b>	<b>0.17</b>	<b>0.16</b>	<b>0.26</b>	<b>0.29</b>	<b>-0.06</b>	<b>0.11</b>	<b>-0.02</b>	<b>0.05</b>	<b>0.26</b>						
16 <i>Analysts</i>	<b>0.16</b>	<b>0.09</b>	<b>0.13</b>	<b>0.18</b>	<b>0.24</b>	<b>0.22</b>	<b>0.24</b>	<b>0.08</b>	<b>0.34</b>	<b>-0.07</b>	<b>0.04</b>	<b>-0.03</b>	-0.01	<b>0.46</b>	<b>0.38</b>					
17 <i>Big4</i>	0.00	<b>-0.03</b>	0.01	0.00	0.01	<b>0.06</b>	<b>0.10</b>	<b>0.35</b>	<b>0.03</b>	0.01	<b>0.09</b>	<b>-0.03</b>	<b>0.13</b>	<b>0.05</b>	<b>0.15</b>	<b>0.05</b>				
18 <i>Litigation</i>	<b>-0.04</b>	<b>-0.02</b>	<b>-0.02</b>	<b>-0.04</b>	<b>-0.02</b>	<b>-0.02</b>	0.00	<b>0.03</b>	0.01	<b>-0.16</b>	<b>0.17</b>	<b>-0.16</b>	<b>0.08</b>	<b>0.04</b>	<b>0.13</b>	<b>0.13</b>	0.01			
19 <i>Common</i>	<b>-0.17</b>	<b>-0.18</b>	<b>-0.13</b>	<b>-0.20</b>	<b>-0.20</b>	<b>-0.15</b>	<b>-0.03</b>	<b>0.61</b>	<b>-0.14</b>	-0.01	<b>0.16</b>	<b>-0.13</b>	<b>0.32</b>	<b>-0.17</b>	<b>0.07</b>	<b>-0.13</b>	<b>0.34</b>	<b>0.04</b>		
20 <i>Stake</i>	<b>0.13</b>	<b>0.12</b>	<b>0.13</b>	<b>0.13</b>	<b>0.15</b>	<b>0.17</b>	<b>0.06</b>	<b>-0.17</b>	<b>-0.17</b>	0.01	<b>-0.05</b>	<b>0.08</b>	<b>-0.23</b>	<b>0.15</b>	<b>-0.22</b>	<b>-0.17</b>	<b>-0.06</b>	<b>-0.12</b>	<b>-0.35</b>	
21 <i>DJSI</i>	<b>0.36</b>	<b>0.32</b>	<b>0.23</b>	<b>0.38</b>	<b>0.40</b>	<b>0.43</b>	<b>0.38</b>	<b>0.17</b>	<b>0.31</b>	<b>0.04</b>	<b>-0.03</b>	<b>0.12</b>	<b>-0.05</b>	<b>0.29</b>	<b>0.11</b>	<b>0.17</b>	<b>0.07</b>	0.01	<b>-0.09</b>	<b>0.13</b>

Table 4 reports the Spearman correlation matrices for our variables of interest. Numbers in bold indicate that the correlation is statistically different from zero with a p-value less than 10%.

**TABLE 4 Determinants of CSR Disclosure**

Dep. Var. Sample	<i>Report =1/0</i> Full Sample				<i>Assurance =1/0</i> Report =1 Sample				<i>Accounting =1/0</i> Assurance =1 Sample			
	1		2		3		4		5		6	
	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>
Constant	-7.990***	-26.61	-8.547***	-26.33	-2.653***	-5.00	-3.306***	-6.00	-1.090	-1.08	-1.000	-0.96
<b><i>CSR_Commitment</i></b>	<b>8.967***</b>	<b>21.57</b>			<b>6.958***</b>	<b>9.83</b>			<b>0.102</b>	<b>0.07</b>		
<i>Policy</i>			<b>4.247***</b>	<b>16.59</b>			<b>2.473***</b>	<b>5.19</b>			<b>-0.101</b>	<b>-0.10</b>
<i>Implementation</i>			<b>-0.393</b>	<b>-1.45</b>			<b>0.208</b>	<b>0.50</b>			<b>-0.492</b>	<b>-0.61</b>
<i>Monitoring</i>			<b>2.005***</b>	<b>5.89</b>			<b>1.959***</b>	<b>4.05</b>			<b>2.431***</b>	<b>2.63</b>
<i>Improvement</i>			<b>4.301***</b>	<b>10.22</b>			<b>3.493***</b>	<b>6.11</b>			<b>-2.704**</b>	<b>-2.51</b>
<i>Information</i>	3.542***	8.25	3.799***	8.71	0.708	1.11	0.875	1.36	0.594	0.47	0.588	0.46
<i>Corp_Gov</i>	-0.276**	-1.98	-0.188	-1.32	-1.242***	-5.29	-1.133***	-4.77	2.200***	5.00	1.957***	4.36
<i>Size</i>	0.057**	2.07	0.034	1.21	-0.035	-0.76	-0.046	-0.99	-0.093	-1.08	-0.062	-0.71
<i>Leverage</i>	0.093	0.50	0.172	0.91	0.203	0.65	0.253	0.81	-1.311**	-2.14	-1.278**	-2.07
<i>ROA</i>	-1.448**	-2.10	-1.297*	-1.87	0.210	0.17	0.575	0.47	-3.009	-1.29	-2.770	-1.19
<i>Age</i>	0.280***	4.44	0.275***	4.32	-0.427***	-4.16	-0.417***	-4.03	0.040	0.21	0.056	0.29
<i>Accruals</i>	-0.166***	-2.90	-0.162***	-2.80	-0.130	-1.49	-0.138	-1.58	-0.027	-0.17	-0.032	-0.19
<i>Cross_Listing</i>	0.154***	5.69	0.153***	5.61	0.354***	8.99	0.350***	8.84	0.222***	3.16	0.226***	3.18
<i>Vol_Disc</i>	0.095**	2.04	0.132***	2.80	-0.365***	-4.78	-0.343***	-4.46	0.154	1.10	0.155	1.09
<i>Analysts</i>	-0.668**	-2.29	-0.586**	-1.99	-2.152***	-4.83	-2.117***	-4.72	2.440***	3.30	2.365***	3.19
<i>Big4</i>	-0.121	-1.48	-0.128	-1.54	-0.418***	-3.32	-0.412***	-3.25	0.049	0.21	0.055	0.23
<i>Litigation</i>	-0.099	-0.55	-0.129	-0.71	0.984**	2.22	0.955**	2.14	0.484	0.38	0.574	0.44
<i>Common</i>	-0.168*	-1.93	-0.159*	-1.80	-0.425***	-2.93	-0.464***	-3.15	-1.946***	-7.32	-1.788***	-6.59
<i>Stake</i>	0.006	0.15	-0.059	-1.39	0.165**	2.35	0.130*	1.82	1.012***	7.35	0.991***	7.14
Year Indicators	Yes		Yes		Yes		Yes		Yes		Yes	
Industry Indicators	Yes		Yes		Yes		Yes		Yes		Yes	
Observations	11,747		11,747		3,188		3,188		1,188		1,188	
Pseudo R-square (%)	32.60%		33.60%		17.20%		17.70%		28.70%		29.50%	

Table 4 reports logistic regression estimates of the relation between firms' CSR commitment and CSR disclosure in terms of CSR disclosure issuance (*Report*), CSR disclosure with assurance (*Assurance*), and CSR disclosure assured by accounting firms (*Accounting*). Model 1, 3 and 5 report the estimation of *CSR\_Commitment*, while Model 2, 4, and 6 report the estimation of the four drivers of *CSR\_Commitment*. \*\*\*, \*\*, \* indicate that a difference or a coefficient is significant at the 1%, 5%, and 10% levels, respectively. All variables are defined in Appendix.

**TABLE 5 CSR Disclosure and DJSI**

Panel A: Univariate Statistics

	Full Sample			CSR Report =1 Sample			Assurance =1 Sample		
	<i>Report = 1/0</i>		<i>diff</i>	<i>Assurance = 1/0</i>		<i>diff</i>	<i>Accounting =1/0</i>		<i>diff</i>
	<i>Report = 1</i>	<i>Report = 0</i>		<i>Assurance = 1</i>	<i>Assurance = 0</i>		<i>Accounting =1</i>	<i>Accounting = 0</i>	
N =	3,188	8,559		1,191	1,997		378	813	
DJSI =	0.450	0.122	0.329***	0.599	0.362	0.238***	0.725	0.541	0.184***

Panel B: The effect of CSR disclosure on the inclusion in the *DJSI*

	Full Sample											
	1		2		3		4		5		6	
	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>
Constant	-5.722***	-10.69	-5.911***	-10.88	-5.716***	-10.66	-5.845***	-10.77	-5.474***	-9.86	-5.533***	-9.73
<b><i>Report</i></b>	<b>0.696***</b>	<b>11.13</b>	<b>0.403***</b>	<b>5.76</b>								
<i>Report</i> × <i>Assurance</i>			<b>0.851***</b>	<b>8.61</b>								
<i>Report</i> × <i>Accounting</i>			<b>0.162</b>	<b>1.06</b>								
<i>Pages</i>					<b>0.186***</b>	<b>11.81</b>	<b>0.110***</b>	<b>6.16</b>				
<i>Pages</i> × <i>Assurance</i>							<b>0.196***</b>	<b>8.03</b>				
<i>Pages</i> × <i>Accounting</i>							<b>0.012</b>	<b>0.34</b>				
<i>Information</i>									<b>0.877*</b>	<b>1.69</b>	<b>-0.032</b>	<b>-0.06</b>
<i>Information</i> × <i>Assurance</i>											<b>1.818***</b>	<b>11.13</b>
<i>Information</i> × <i>Accounting</i>											<b>0.207</b>	<b>0.78</b>
<i>CSR_Perf</i>	5.278***	6.01	5.178***	5.83	5.158***	5.86	5.048***	5.68	4.832***	5.14	4.917***	5.13
<i>Corp_Gov</i>	0.566***	4.01	0.613***	4.27	0.557***	3.95	0.603***	4.20	0.549***	3.94	0.620***	4.33
<i>Size</i>	0.206***	6.97	0.212***	7.08	0.206***	6.95	0.210***	7.02	0.200***	6.83	0.208***	6.99
<i>Leverage</i>	0.671***	3.49	0.641***	3.30	0.640***	3.32	0.612***	3.15	0.678***	3.57	0.627***	3.25
<i>ROA</i>	-0.575	-0.79	-0.702	-0.95	-0.598	-0.82	-0.711	-0.96	-0.618	-0.85	-0.734	-0.99
<i>Age</i>	-0.133**	-2.01	-0.101	-1.51	-0.130*	-1.95	-0.099	-1.47	-0.126*	-1.91	-0.097	-1.45
<i>Accruals</i>	0.217***	3.60	0.224***	3.67	0.219***	3.62	0.226***	3.70	0.203***	3.39	0.224***	3.68
<i>Cross_Listing</i>	0.173***	6.28	0.139***	4.94	0.163***	5.90	0.136***	4.83	0.187***	6.83	0.136***	4.80
<i>Vol_Disc</i>	0.021	0.44	0.059	1.20	0.029	0.60	0.060	1.22	0.024	0.49	0.064	1.30
<i>Analysts</i>	0.679**	2.33	0.844***	2.87	0.692**	2.38	0.839***	2.85	0.591**	2.05	0.870***	2.95
<i>Big4</i>	0.337***	3.68	0.366***	3.92	0.333***	3.63	0.360***	3.85	0.336***	3.70	0.370***	3.97
<i>Litigation</i>	0.202	1.18	0.164	0.96	0.209	1.22	0.171	1.00	0.196	1.15	0.162	0.95
<i>Common</i>	0.098	1.09	0.161*	1.76	0.152*	1.68	0.208**	2.26	0.106	1.19	0.180**	1.97
<i>Stake</i>	0.367***	8.68	0.386***	8.98	0.379***	8.94	0.399***	9.26	0.357***	8.50	0.387***	9.00
<i>IMR</i>	-0.645***	-14.04	-0.627***	-13.45	-0.639***	-13.91	-0.629***	-13.56	-0.740***	-13.13	-0.702***	-12.24
Year Indicators	Yes		Yes		Yes		Yes		Yes		Yes	
Industry Indicators	Yes		Yes		Yes		Yes		Yes		Yes	
Observations	11,747		11,747		11,747		11,747		11,747		11,747	
Pseudo R-square (%)	28.20%		29.10%		28.30%		29.00%		27.20%		28.70%	

Table 5 reports logistic regression estimates of the relation between firms' CSR disclosure, including CSR disclosure issuance (*Report*), CSR disclosure with assurance (*Assurance*), and CSR disclosure assured by accounting firms (*Accounting*) and the likelihood of inclusion of DJSI. Model 1, 3 and 5 report the estimation of *Report* only, while Model 2, 4, and 6 report the estimation of all the three CSR disclosure variables. \*\*\*, \*\*, \* indicate that a difference or a coefficient is significant at the 1%, 5%, and 10% levels, respectively. IMR is the inverse Mills ratio generated from a probit estimation of Equation (1):  $Report_{i,t+1} = \alpha_0 + \alpha_1 CSR\_Commitment_{i,t} + \sum_{k=2,K} \alpha_k control(k) + \varepsilon_{i,t+1}$ . All variables are defined in Appendix.

**TABLE 6 CSR Disclosure and SRI**

Panel A: Univariate Statistics

	Full Sample			CSR Report =1 Sample			Assurance =1 Sample		
	<i>Report = 1</i>	<i>Report = 0</i>	<i>diff</i>	<i>Assurance =1</i>	<i>Assurance =0</i>	<i>diff</i>	<i>Accounting =1</i>	<i>Accounting =0</i>	<i>diff</i>
<i>SRI_Holding</i>	0.372	0.233	0.138***	0.438	0.332	0.107***	0.511	0.405	0.107***
<i>SRI_Number</i>	35.458	21.480	13.978***	42.108	31.492	10.617***	50.011	38.434	11.576***

Panel B: The effect of CSR disclosure on *SRI\_Holding*

	Full Sample											
	1		2		3		4		5		6	
	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>
Constant	0.485***	15.19	0.486***	15.21	0.489***	15.32	0.490***	15.34	0.488***	14.71	0.505***	15.20
<b>Report</b>	<b>0.029***</b>	<b>6.98</b>	<b>0.018***</b>	<b>3.91</b>								
<b>Report × Assurance</b>			<b>0.036***</b>	<b>5.15</b>								
<b>Report × Accounting</b>			<b>-0.003</b>	<b>-0.28</b>								
<b>Pages</b>					<b>0.007***</b>	<b>6.33</b>	<b>0.004***</b>	<b>3.43</b>				
<b>Pages × Assurance</b>							<b>0.007***</b>	<b>4.24</b>				
<b>Pages × Accounting</b>							<b>-0.001</b>	<b>-0.57</b>				
<b>Information</b>									<b>0.028</b>	<b>0.86</b>	<b>-0.015</b>	<b>-0.46</b>
<b>Information × Assurance</b>											<b>0.074***</b>	<b>6.53</b>
<b>Information × Accounting</b>											<b>0.005</b>	<b>0.27</b>
<i>CSR_Perf</i>	0.065	1.22	0.058	1.10	0.062	1.17	0.057	1.07	0.060	1.04	0.060	1.03
<i>Corp_Gov</i>	-0.102***	-13.10	-0.101***	-12.96	-0.102***	-13.12	-0.102***	-12.98	-0.102***	-13.02	-0.101***	-12.92
<i>Size</i>	-0.015***	-9.30	-0.015***	-9.36	-0.015***	-9.33	-0.015***	-9.37	-0.014***	-9.22	-0.015***	-9.39
<i>Leverage</i>	0.006	0.63	0.006	0.55	0.006	0.56	0.005	0.49	0.007	0.70	0.005	0.51
<i>ROA</i>	0.157***	4.36	0.153***	4.24	0.156***	4.34	0.153***	4.25	0.156***	4.31	0.153***	4.25
<i>Age</i>	0.022***	5.64	0.023***	5.92	0.022***	5.67	0.023***	5.90	0.022***	5.68	0.023***	5.89
<i>Accruals</i>	-0.043***	-12.51	-0.043***	-12.48	-0.043***	-12.51	-0.043***	-12.48	-0.043***	-12.51	-0.043***	-12.37
<i>Cross_Listing</i>	0.050***	29.24	0.049***	28.36	0.050***	29.04	0.049***	28.39	0.051***	29.60	0.049***	28.08
<i>Vol_Disc</i>	-0.010***	-3.57	-0.009***	-3.31	-0.009***	-3.53	-0.009***	-3.33	-0.010***	-3.61	-0.009***	-3.35
<i>Analysts</i>	0.222***	12.68	0.227***	12.97	0.222***	12.67	0.226***	12.88	0.220***	12.54	0.229***	13.03
<i>Big4</i>	-0.007	-1.35	-0.006	-1.29	-0.007	-1.40	-0.006	-1.34	-0.006	-1.32	-0.006	-1.24
<i>Litigation</i>	-0.039***	-4.37	-0.039***	-4.46	-0.038***	-4.35	-0.039***	-4.43	-0.038***	-4.33	-0.039***	-4.42
<i>Common</i>	-0.060***	-11.90	-0.059***	-11.63	-0.059***	-11.66	-0.058***	-11.46	-0.061***	-11.98	-0.059***	-11.56
<i>Stake</i>	0.096***	40.42	0.097***	40.47	0.097***	40.45	0.097***	40.48	0.096***	40.10	0.097***	40.25
<i>IMR</i>	-0.029***	-11.80	-0.028***	-11.57	-0.029***	-12.06	-0.029***	-11.95	-0.032***	-10.58	-0.032***	-10.54
Year Indicators	Yes		Yes		Yes		Yes		Yes		Yes	
Industry Indicators	Yes		Yes		Yes		Yes		Yes		Yes	
Observations	11,747		11,747		11,747		11,747		11,747		11,747	
R-square (%)	48.40%		48.50%		48.30%		48.40%		48.10%		48.40%	

Panel C: The effect of CSR reporting decision on *SRI\_Number*

	Full Sample											
	1		2		3		4		5		6	
	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>	<i>coef</i>	<i>t-stat</i>
Constant	42.140***	13.07	42.299***	13.12	42.462***	13.18	42.662***	13.23	42.332***	12.65	43.988***	13.12
<b>Report</b>	<b>2.479***</b>	<b>5.83</b>	<b>1.402***</b>	<b>2.99</b>								
<b>Report × Assurance</b>			<b>3.279***</b>	<b>4.65</b>								
<b>Report × Accounting</b>			<b>0.316</b>	<b>0.30</b>								
<b>Pages</b>					<b>0.570***</b>	<b>5.30</b>	<b>0.307**</b>	<b>2.52</b>				
<b>Pages × Assurance</b>							<b>0.692***</b>	<b>4.00</b>				
<b>Pages × Accounting</b>							<b>-0.008</b>	<b>-0.03</b>				
<b>Information</b>									<b>2.525</b>	<b>0.78</b>	<b>-1.517</b>	<b>-0.46</b>
<b>Information × Assurance</b>											<b>6.681***</b>	<b>5.84</b>
<b>Information × Accounting</b>											<b>1.230</b>	<b>0.70</b>
<i>CSR_Perf</i>	-0.736	-0.14	-1.457	-0.27	-0.967	-0.18	-1.597	-0.30	-1.245	-0.21	-1.399	-0.24
<i>Corp_Gov</i>	-8.117***	-10.31	-8.075***	-10.23	-8.129***	-10.32	-8.087***	-10.24	-8.085***	-10.25	-8.059***	-10.20
<i>Size</i>	-0.729***	-4.63	-0.737***	-4.68	-0.733***	-4.65	-0.739***	-4.70	-0.722***	-4.57	-0.744***	-4.72
<i>Leverage</i>	0.939	0.91	0.852	0.83	0.874	0.85	0.801	0.78	0.992	0.96	0.814	0.79
<i>ROA</i>	19.77***	5.45	19.41***	5.35	19.72***	5.43	19.41***	5.35	19.68***	5.40	19.49***	5.36
<i>Age</i>	1.710***	4.33	1.811***	4.59	1.720***	4.36	1.808***	4.58	1.739***	4.38	1.809***	4.56
<i>Accruals</i>	-3.621***	-10.47	-3.607***	-10.44	-3.624***	-10.47	-3.609***	-10.44	-3.640***	-10.48	-3.585***	-10.34
<i>Cross_Listing</i>	4.811***	27.88	4.696***	27.00	4.791***	27.71	4.705***	27.04	4.869***	28.20	4.671***	26.74
<i>Vol_Disc</i>	-0.810***	-3.00	-0.744***	-2.76	-0.800***	-2.96	-0.749***	-2.77	-0.820***	-3.02	-0.755***	-2.79
<i>Analysts</i>	27.912***	15.82	28.39***	16.06	27.90***	15.81	28.28***	15.99	27.78***	15.70	28.57***	16.11
<i>Big4</i>	-0.335	-0.69	-0.307	-0.63	-0.356	-0.73	-0.327	-0.67	-0.326	-0.67	-0.290	-0.59
<i>Litigation</i>	-3.668***	-4.12	-3.741***	-4.20	-3.656***	-4.10	-3.718***	-4.17	-3.647***	-4.08	-3.715***	-4.17
<i>Common</i>	-7.032***	-13.74	-6.892***	-13.44	-6.938***	-13.53	-6.832***	-13.29	-7.085***	-13.80	-6.875***	-13.37
<i>Stake</i>	8.243***	34.24	8.269***	34.25	8.257***	34.27	8.281***	34.27	8.220***	34.00	8.253***	34.09
<i>IMR</i>	-2.918***	-11.83	-2.880***	-11.64	-2.967***	-12.05	-2.959***	-11.98	-3.202***	-10.38	-3.204***	-10.37
Year Indicators	Yes		Yes		Yes		Yes		Yes		Yes	
Industry Indicators	Yes		Yes		Yes		Yes		Yes		Yes	
Observations	11,747		11,747		11,747		11,747		11,747		11,747	
R-square (%)	46.60%		46.80%		46.60%		46.70%		46.50%		46.70%	

Table 6 reports OLS regression estimates of the relation between firms' CSR disclosure issuance (*Report*), CSR disclosure with assurance (*Assurance*), and CSR disclosure assured by accounting firms (*Accounting*) and the percentage holding of SRI (Panel B) and the number of SRI (Panel C). An institutional investor is considered as a SRI when the percentage of shares of DJSI firms (i.e. firms which are included in the Dow Jones Sustainability Index during the sample period) held by the institutional investor is greater than the industry median. Model 1, 3 and 5 report the estimation of *Report* only, while Model 2, 4, and 6 report the estimation of all the three CSR disclosure variables. \*\*\*, \*\*, \* indicate that a difference or a coefficient is significant at the 1%, 5%, and 10% levels, respectively. IMR is the inverse Mills ratio generated from a probit estimation of Equation (1):  $Report_{i,t+1} = \alpha_0 + \alpha_1 CSR\_Commitment_{i,t} + \sum_{k=2,K} \alpha_k control(k) + \varepsilon_{i,t+1}$ . All variables are defined in Appendix.