

**Not All CSR Reports are Created Equal:
Report Quality and Voluntary Third-Party Assurance**

by

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Abstract: We study two aspects of voluntary corporate social responsibility (CSR) disclosures: how they are provided on corporate websites (standalone versus web-based) and how their content varies with the decision to purchase external assurance. Larger firms and firms with higher capital expenditures (*i.e.*, those with longer horizons or greater current exposure to ESG concerns) are more likely to provide standalone reports that are easily archived, disseminated and assured instead of web-based reports that can be changed at will and are difficult to archive and assure. External assurance is associated with content that indicates less greenwashing: assured reports contain less optimistic and less embellished language and more “hard” information than unassured reports. They also focus less on cultural/societal values and more on measurable environmentally impactful activities.

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Introduction.

Increasing concerns with working conditions, natural resource shortages, climate change and supply-chain disruptions have created demand for disclosure of corporate social and environmental impacts. As a result, sustainability initiatives and socially responsible programs are now often key components of corporate strategy, and firms routinely provide formal corporate social responsibility (CSR) reports to the public.¹ The results of a recent EY (2014a) survey suggest that although clients and customers continue to be major drivers of socially responsible activities and reporting, employees, investors (in particular institutional investors), communities, activists and boards of directors are increasingly influential in shaping these policies and disclosures. Interestingly, despite the growing demand for and interest in CSR reporting, there are no widely accepted, universal standards or rules for their preparation and distribution.² Further, although some firms have voluntarily sought third-party assurance of all or parts of their CSR reports, external verification of report contents is not required. Thus, CSR report quality is likely to vary significantly across firms, even when those firms are large, publicly traded corporations.

The objective of this paper is to examine variation in certain aspects of quality across CSR reports. In particular, we study differences in the way in which large, publicly traded firms provide reports via their corporate websites and how the contents of the reports vary depending on whether or not they were assured by an independent third party.

Prior research has studied the decision to provide a CSR report but not the way in which they are delivered to the public (e.g., Dhaliwal, Li, Tsang and Yang 2011 and Dhaliwal, Radhakrishnan, Tsang and Yang 2012). Of the firms that choose to make those disclosures, some provide them as (essentially) permanent, standalone reports, similar to annual reports, downloadable as a .pdf file on their websites, and others offer them only as web pages. While .pdf file content is easily retained once the file is downloaded, reports delivered on web pages or in the form of a digital magazine can be easily updated or changed, making it more difficult to retain an historical record of, or assure, the content. This difference is one of the reasons .pdf files are admissible electronic documents in U.S. courts while web pages are not.³ For

¹ KPMG (2013) reports that nearly three-fourths of 4,100 firms it surveyed produce CSR reports, up seven percentage points from 2011.

² As explained in the next section, there are a number of private standards, guidelines and frameworks available to assist corporations in preparing their voluntarily provided CSR reports.

³ An electronic document is "...admissible if it is created in a file format that cannot be altered without leaving an electronic footprint" (<http://www.legalscans.com/whypdf.html>). .pdf files satisfy this requirement but web pages do

these reasons, we view CSR report delivery via a .pdf file as higher quality reporting and examine firm characteristics that we expect to be associated with this choice of delivery format. Specifically, we hypothesize and find that larger firms and firms undertaking significant capital expenditures are more likely to provide their CSR reports as .pdf files. The first result is consistent with prior findings based on other types of voluntary disclosures: larger firms provide higher quality financial disclosures (see, for example, Lang and Lundholm 1993). The second is consistent with firms that have a longer term outlook or that are investing in capital projects with environmental impact making the decision to offer a more easily retained record of their socially responsible activities. We also hypothesize and find that less risky firms provide higher quality CSR report delivery, consistent with our argument that firms that adopt low risk strategies are more likely to benefit from higher quality CSR reporting. Finally, we document industry effects associated with the report delivery decision. In particular, firms in sectors that attract greater public scrutiny (i.e., the materials or consumer staples sectors) are more likely to offer higher quality standalone, .pdf CSR reports than firms in other sectors.

As mentioned earlier, reports that are delivered in a standalone, .pdf format are much more amenable to third-party assurance than those that are web-based. As a result, we expect aspects of the language used in the standalone reports in our sample to vary systematically with the decision to have the report externally assured. In particular, because external assurers monitor the firm's claims and moderate them if necessary, we expect the amount of greenwashing in assured CSR reports to be limited relative to that in unassured CSR reports. Our results are consistent with this expectation. Specifically, we find that the language in standalone CSR reports accompanied by third-party assurance is less optimistic, is less embellished and contains less information about activities that are generally easier to exaggerate (i.e., less discussion of the firm's adherence to cultural/societal values). That is, assured CSR reports generally contain less exaggeration of the firm's socially responsible activities. We further hypothesize and find that reports contain more certain language, more discussion of the firm's environmental activities and more numerical terms when they are assured. That is, assured CSR reports generally contain more quantifiable or "hard" information on the firm's socially responsible activities. Taken together, these results offer the first direct evidence that third-party assurance is associated with a significant difference in the tone and type of information contained in the CSR report and, more specifically, with a reduction in greenwashing.

not. See also Bench & Bar of Minnesota (<http://mnbenchbar.com/2013/10/admissibility-of-electronic-evidence/>) and <http://www.esiimaging.com/section2/whypdf.html>.

We also find that, even after controlling for whether the CSR report is assured, firms that have a longer history of offering CSR reports on their websites are less likely to use optimistic language and are more likely to use both certain language and numerical terms in their reports. Further, firms that have adopted the GRI reporting framework are less likely to use optimistic language, less likely to embellish and more likely to use certain language in their CSR reports. These results suggest that the firm's willingness to provide a history of its socially responsible activities and a willingness to adopt the GRI reporting framework are both associated with producing higher quality CSR reports. Interestingly, we find that firms that do not adopt the GRI reporting framework tend to increase numerical content and discussion of their environmental efforts, perhaps as a way of substituting for the GRI content.

Overall, our results suggest that there are important differences in both the format firms adopt for their voluntary CSR disclosures and the content of those disclosures. Thus, we contribute to three streams of literature: the CSR assurance literature (see Casey and Grenier 2015 for a review of the empirical literature and Bagnoli and Watts 2016 for theoretical analysis); the voluntary disclosure literature (in particular, the work that builds on Lang and Lundholm 1993), and the linguistic content literature (see Li 2011 for a review and Huang, Teoh and Zhang 2014 for recent empirical analysis). In particular, we show that report delivery format as well as voluntary assurance of the report are aspects of CSR reporting that are systematically related to firm characteristics and to the quality of the reports that are issued. These insights are likely to be useful to regulators, standard setters and business professionals alike as sustainability reporting continues to evolve.

2. Background, Related Literature and Hypothesis Development.

Incorporating sustainability initiatives into corporate strategy and reporting is now common. In its 2013 Survey of Corporate Responsibility Reporting, KPMG reports that 71% of the 4,100 companies surveyed produce CSR reports, up from 64% in 2011. Yvo de Boer, KPMG's Global Chairman, Climate Change & Sustainability Services, also notes in the same report that CSR reporting appears now to be a global business practice, and that an increasing number of companies are using it to identify environmental, societal and governance factors that affect stakeholders and business risks. The results of a survey of participants at the GRI Global Conference on Sustainability and Reporting in May, 2013, are consistent with de Boer's assertions. They indicate that although clients and customers are the main drivers of corporate sustainability efforts, employees, the board of directors, and investors also influence those efforts (EY 2014a). Not surprisingly given this broad set of stakeholders, the GRI survey results reveal

that business objectives as well as ethical concerns are now the key factors in developing corporate sustainability strategy (EY 2014a). This has, in turn, moved CSR reporting into the business mainstream over the past decade (KPMG 2013 and EY 2014a). Despite the growing focus on CSR reporting, however, there is considerable flexibility in preparing the disclosures, in part because of the diverse informational needs of the expanding set of parties interested in such reports and in part because there are no standard, universal requirements for preparing and distributing them (EY 2014a).⁴ This flexibility suggests that CSR report quality likely varies significantly across firms, even when those firms are large, publicly traded corporations.

Our objective in this paper is to begin to examine how certain aspects of quality vary across CSR reports produced by different firms. Specifically, we begin by examining the format of reports provided by large, publicly traded firms on their websites and then, for the subset of firms that issue permanent, standalone reports, we ask whether the content of the report varies with whether or not the report is assured by an independent third party.

2.1. Report Form and Delivery as a Measure of Quality

Although the voluntary aspects of CSR reporting have been studied before as noted above, an interesting and previously unexamined nuance of CSR reporting is the form and delivery of the reports. Specifically, some firms issue standalone CSR reports similar to annual reports, usually in a downloadable (.pdf or similar) format; other firms provide their CSR reports only via their website (e.g., as a web page or in a digital magazine format); and others provide no report at all. We refer to the first type of report as “standalone” reports and the second type as “web-based” reports.

⁴ According to EY (2014a), there are numerous private standards, guidelines and frameworks that help companies prepare and report sustainability information. For example, the Global Reporting Initiative (GRI, www.globalreporting.org), an international non-profit organization and Collaborating Centre of the United Nations Environment Programme, recently issued its fourth-generation (G4) sustainability reporting guidelines for voluntary use by organizations around the world. In the U.S., the Sustainability Accounting Standards Board (SASB, www.sasb.org), an independent 501c(3) non-profit that incorporated in July 2011, is developing voluntary, industry-specific reporting frameworks that will help corporations “[understand, interpret and measure] relevant sustainability issues at the industry level in order that they can be measured, managed and disclosed.” One of the SASB’s main stated objectives is to help companies meet the Security and Exchange Commission’s (SEC) requirement to disclose material information, some of which is likely to be related to environmental and other sustainability issues. Interestingly, SEC Commissioner Daniel Gallagher stated in a March, 2014, speech that “...it is important to remember that groups like SASB have no role in the establishment of *mandated* disclosure requirements” (Allen 2014, emphasis added). Further, the SASB is careful to note on its website that it is not affiliated with FASB, GASB, IASB or any other accounting standards boards.

Prior studies on the impact of CSR disclosure have compared firms issuing standalone reports with firms that do not (Dhaliwal, Li, Tsang and Yang 2011 and Dhaliwal, Radhakrishnan, Tsang and Yang 2012, among others).⁵ Although a substantial number of firms now choose web-based CSR reporting (nearly a quarter of our sample of S&P 500 firms), to our knowledge, we are the first to study these reporters and compare them to firms that choose to provide standalone reports or no report at all.

Although similar to standalone CSR reports in many ways, web-based CSR reports have important unique features. Most notably, web-based reports can be updated, amended, or removed by the company at any time and consequently are virtually never assured by an independent third party. Also, prior years' reports are not available as the CSR report web page is simply updated as needed, making comparisons to prior years more difficult. We believe this distinction is important: choosing a web-based CSR disclosure regime is certainly different from choosing to not issue CSR reports at all, but it is also not the same as choosing to provide standalone CSR reports. Because standalone reports are "set in stone" when they are issued and can be archived, disseminated and independently assured, we view them as higher quality disclosures than web-based reports.⁶ The first objective of this study is to examine factors that are likely to affect the way in which firms make this disclosure quality decision.

Prior studies show that larger firms generally provide higher quality financial disclosures (e.g., Lang and Lundholm 1993). Studies of CSR reporting provide similar evidence regarding the decision to provide a CSR report: Simnett et al. (2009) find that larger firms are more likely to issue standalone reports, and Dhaliwal et al. (2011) find that firm size is positively associated with issuing a standalone report for the first time. Following our conjecture that standalone reports are of highest quality in terms of report format because of their permanent nature, web-based reports are of lower quality because of their transitory nature, and no reports are of lowest quality, we hypothesize that larger firms are more likely to provide higher quality CSR disclosure. Stated formally:

⁵ Lys, Naughton and Wang (2015) and Naughton, Wang and Yeung (2015) extend this analysis by examining the importance of CSR expenditures. Lys et al. study the impact of CSR expenditures on inferences about future firm performance and Naughton et al. study the relation between CSR expenditures, investor sentiment and market reactions to CSR announcements.

⁶ Recall that .pdf files leave an electronic footprint if changed and therefore meet the requirements for an electronic document to be admissible in a court of law while web pages do not.

H1a: Larger firms are more likely to provide higher quality CSR disclosure as measured by the existence and permanence of the report.

In addition to size, we explore firm characteristics that are likely to be associated with the firm's CSR report format decision. Capital expenditures represent activities that often inherently have significant environmental implications.⁷ We argue that when a firm undertakes major projects such as the construction or acquisition of a new plant, stakeholders' demand for environmental information about the project (and the firm as a whole) is likely to increase. Also, high levels of capital expenditures may signify projects that decrease environmental impact, such as replacing old machinery or retrofitting buildings or production facilities. These firms are likely to be more inclined to disclose these "green" activities to the public, leading to higher quality disclosures. Further, firms with high capital expenditures tend to be more focused on the long term and thus are more likely to perceive greater benefits (or the avoidance of costs) of higher quality CSR reporting. For these reasons, we hypothesize that firms with higher capital expenditures are more likely to provide higher quality CSR disclosure than firms with lower capital expenditures. Stated formally:

H1b: Firms with higher capital expenditures are more likely to provide higher quality CSR disclosure as measured by the existence and permanence of the report.

The results of the survey of participants at the GRI Global Conference on Sustainability and Reporting in May, 2013, (mentioned earlier) highlight identification and mitigation of risks as a principal objective of a sustainability strategy (EY 2014a). Because firms adopt low-risk strategies when the benefits to reduced risk—or the costs of increased risk—are high, we expect less risky firms to value CSR reporting more highly and offer higher quality disclosure than riskier firms.

H1c: Less risky firms are more likely to provide higher quality CSR disclosure as measured by the existence and permanence of the report.

Prior research has identified firms with low effective tax rates as "tax avoiders" (see Hanlon and Heitzman 2010). Furthermore, Hoi, Wu and Zhang (2013) find that socially "irresponsible" firms are more likely to avoid taxes or participate in tax sheltering. They argue that this relation is likely the result

⁷ We thank KoEun Park for first suggesting that capital expenditures might be related to the assurance decision.

of corporate culture or a system of shared beliefs within the firm that produces what they refer to as “a set of conventions of doing business.” (p. 2028). In a related, complementary article that supports this argument, Lanis and Richardson (2012) find that more socially “responsible” firms tend to be less tax aggressive.⁸ These findings and the arguments underlying Hoi et al.’s (2013) empirical tests suggest that firms with high effective tax rates might also be more likely to provide higher quality CSR disclosures. In contrast, Davis, Guenther, Krull and Williams (2016) provide evidence that firms with higher CSR ratings engage in more tax avoidance. They note that their results are consistent with the idea that legally avoiding taxes is not a socially irresponsible activity and therefore is not negatively associated with CSR activity. Further, firms with low effective tax rates are often firms that have more of their profitable operations in low-tax jurisdictions such as Europe. Because certain CSR disclosures are required in many of these low-tax jurisdictions, firms operating there are likely to find that the incremental cost of providing a standalone CSR report is relatively small. If so, then we would expect that firms with low effective tax rates are more likely to provide higher quality CSR disclosures. Because there are arguments and empirical results supporting both a positive and negative association, we offer no directional prediction on the relation between a firm’s tax rate and the quality of its CSR disclosure. Stated formally:

H1d: The firm’s effective tax rate is related to the existence and delivery format of its CSR reports.

Finally, we argue that there are likely to be industry-specific factors that influence the format of a firm’s CSR reports. For example, firms in certain regulated industries (e.g., utilities) may already collect and report CSR data to regulators, making the marginal cost of disclosure relatively low. Also, firms in industries facing greater public scrutiny may be more likely to offer higher quality CSR disclosure because the benefits from doing so—or the costs of not doing so—are high. These arguments suggest that there is a predictive relation between industry membership and report quality, with the strength of the relation varying across industries. Stated formally:

H1e: The firm’s industry membership is related to the existence and delivery format of its CSR reports.

⁸ See also Desai and Dharmapala (2006) and Avi-Yonah (2008).

2.2. *Independent Assurance and Report Content*

Non-financial disclosures, especially those related to the environmental and social activities of the firm, are increasingly being used in investment decision-making (EY 2014b). However, the lack of standardized CSR reporting rules and formats has created significant concern with “greenwashing,” the public exaggeration, often through the use of vague language, of positive environmental and societal activities undertaken by the company while downplaying or ignoring negative ones (Lyon and Montgomery 2013; Mahoney, Thorne, Cecil and LaGore 2013; Lyon and Maxwell 2011; Cho, Roberts and Patten 2010; Hopwood 2009; Deegan, Rankin and Toobin 2002; Deegan and Rankin 1996). External (third-party) assurance of CSR reports is one way of mitigating concerns with greenwashing and provides an indication of disclosure credibility (quality) and commitment to corporate responsibility (Bagnoli and Watts 2016).

As noted earlier, firms that offer web-based CSR reports have chosen to provide disclosures that are difficult, if not virtually impossible, to assure because content can be changed or removed at will. Standalone reports, on the other hand, are permanent in nature and therefore, at least to some extent, assurable. Firms seeking assurance can now turn to international public accounting firms, boutique or niche consulting firms, individual experts and engineering firms, all of which offer (usually limited) assurance or reviews of corporate CSR reports (Casey and Grenier 2015; Eccles, Ioannou and Serafeim 2014; Simnet, Vanstraelan and Chua 2009).⁹ ¹⁰ Although there continues to be significant variability in the extent (level) of assurance provided and in the assurance criteria used by the assurance provider, Mike Wallace, Director, Focal Point USA, GRI, indicated during his speech at the GRI Conference on May 22,

⁹ In our final sample of standalone reports, 18.3% are assured but only 27.6% of the assured reports are assured by international accounting firms. Interestingly, of those assured by international accounting firms, in most cases (83.3%) the accounting firm that assures the firm’s financial statements also assures the firm’s CSR report.

¹⁰ The Deloitte assurance letter for the UPS 2011 CSR report provides a representative illustration and explanation of the type of assurance provided by an international accounting firm. Deloitte writes “[w]e conducted our review in accordance with attestation standards established by the American Institute of Certified Public Accountants, which includes AT Section 101, Attest Engagements. A review consists principally of applying analytical procedures, considering management assumptions, methods, and findings, and making inquiries of and evaluating responses from persons responsible for corporate social and operational matters. It is substantially less in scope than an examination, the objective of which is the expression of an opinion on the Corporate Sustainability Report. Accordingly, we do not express such an opinion. A review of the Corporate Sustainability Report is not intended to provide assurance on the entity’s compliance with laws or regulations.”

2013, that 38% of reports globally have some sort of assurance, with 70% of those reporters purchasing the assurance from international public accounting firms (EY 2014a).¹¹

To date, empirical research focused on CSR report assurance has studied the determinants of the decision to acquire third-party assurance and the relation between the presence of assurance and the usefulness of the report to capital market participants. In particular, Casey and Grenier (2015) and Simnet, Vanstraelan and Chua (2009) show that both within the U.S. and internationally, larger firms are more likely to seek assurance for their CSR reports, and that within the U.S., firms with lower leverage are more likely to seek it. Casey and Grenier (2015) further show that U.S. firms that issue assured CSR reports enjoy a lower cost of equity capital than U.S. firms that issue unassured reports and that their analysts offer more accurate earnings forecasts. Also, analyst forecasts for those firms exhibit lower dispersion.

Although the studies discussed above provide indirect evidence of differences in standalone CSR reports that are assured and those that are not assured, they do not examine differences in the content of the two types of reports. The second objective of this study is to extend their analysis by examining the content—in particular, the linguistic tone—of assured and unassured standalone CSR reports.

Analysis of the linguistic content of firms' financial disclosures has grown into a significant area of research in recent years (see Li 2010 for a review).¹² However, there has been limited research on the linguistic content of firms' non-financial disclosures. The work most closely related to ours examines environmental disclosures made by firms in their 10-K filings (Cho, Roberts, and Patten 2010; Arena, Bozzolan, and Michelon 2014). Using a sample of 190 environmental disclosures in 10-Ks filed in 2002, Cho et al. (2010) find that worse environmental performers as measured by environmental concern rating from KLD Research and Associates, Inc. (now part of MSCI, Inc.) tend to use more optimistic and less certain language in those disclosures. Arena et al. (2014) study a sample of 288 environmental disclosures in 10-K filings made by a sample of firms belonging to the oil and gas industry in a more recent time period (between 2008 and 2010). They find that more optimistic language in those disclosures is associated with better future environmental performance as measured (again) by the KLD environmental

¹¹ Popular assurance standards include AccountAbility's AA1000 Assurance Standard 2008 and ISAE 3000 Revised (revised in 2013). See O'Dwyer (2011) for an excellent discussion of the practice of CSR assurance.

¹² For example, Li (2008 and 2010) provides textual analyses of quarterly and annual SEC filings, and Larcker and Zakolyukina (2012) and Frankel, Mayew and Sun (2010) study aspects of the qualitative information in earnings conference calls. Davis and Tama-Sweet (2012) compare tone in the MD&A section of 10-Ks and the concurrent earnings press release.

concern rating. Thus, while Cho et al. (2010) find evidence that in 2002, poor environmental performers biased their environmental disclosures by choosing to use more positive, less certain language to give the impression of good performance, Arena et al. (2014) find that in the case of oil and gas firms in the late 2000s, the decision to use optimistic language may be an indication of improving environmental performance.

Huang, Teoh and Zhang (2014) examine the tone of earnings press releases, which are similar to the CSR reports that we examine in that there is flexibility in what information is included and the way in which it is communicated. However, earnings press releases are not accompanied by assurance from a third party.¹³ Consistent with managers using optimistic tone to mislead investors and bias their perceptions of firm value upward, Huang et al. (2014) find that an abnormally positive tone in the press releases increases the probability that the firm will meet or beat past earnings or the analyst consensus forecast of the current period's earnings.¹⁴ They further show that the stock market appears to over-react to this positive tone: returns are abnormally high at the press release and then tend to reverse over the next one to two quarters. Huang et al. (2014) conclude that their evidence is consistent with "... managers us[ing] tone management to mislead investors and other financial statement users." (p. 1086)

We extend this prior work by examining how assurance affects the linguistic content of voluntarily provided CSR reports. Prior studies show that high-quality assurance of financial statements mitigates managerial opportunism and results in higher quality financial reporting (Becker, DeFond, Jiambalvo and Subramanyam 1998; Balsam, Krishnan and Yang 2003). Although assurance of non-financial disclosures, and CSR reports in particular, is still evolving (Eccles, Ioannou and Serafeim 2014), we expect external assurers to still fulfill a monitoring role and curtail managerial greenwashing and obfuscation, leading to higher quality reports. As a result, we expect CSR reports that are accompanied by external assurance to be of higher quality and contain less greenwashing than those that are not. More specifically, we expect assured CSR reports to contain less optimistic and positively biased language and less embellishment than unassured CSR reports. We also expect assured CSR reports to exhibit less discussion of cultural/societal values than unassured CSR reports because it is difficult to ascertain

¹³ However, if the press release contains annual financial statement details, those details have presumably been verified by the firm's external auditor.

¹⁴ Huang et al. (2014) also show the tone in earnings press releases varies in other predictable ways with managers' incentives to increase perceptions of firm value. For example, abnormally positive tone increases the likelihood of new equity issuances and M&A activities and decreases the likelihood of employee stock option grants.

whether the firm is or is not representing their stated values accurately. Finally, we expect assured CSR reports to contain less vague (more certain) language than unassured reports. Stated formally:

H2a: The language in assured CSR reports exhibits less optimism than the language in unassured CSR reports.

H2b: The language in assured CSR reports exhibits less embellishment than the language in unassured CSR reports.

H2c: The language in assured CSR reports exhibits less discussion of cultural/societal values than the language in unassured CSR reports.

H2d: The language in assured CSR reports exhibits more certainty than the language in unassured CSR reports.

We also examine two other aspects of the content of CSR reports: discussion of the firm's environmental impact and the use of numerical terms. While optimism, embellishment, cultural/societal values and certainty measure the subjective or unquantifiable information in the report, measuring the firm's focus on its environmental impact and its use of numerical terms gives us some insight into how assurance is related to the "hard" data in the reports. We expect that firms whose CSR reports have a great deal of numerical data, such as firms whose reports focus on measurable environmental factors (e.g., greenhouse gas emissions, water usage), may be more likely to seek external assurance in order to add credibility to their reported data, suggesting a positive relation between assurance and both the amount of discussion of the firm's environmental impact and amount of numerical content of the report. However, it is possible that once an assurance engagement has begun, assurers may force firms to remove unverifiable data from the report, suggesting a negative relationship with both constructs. While this adds tension, we argue that the demand for credible quantifiable information will lead to a positive relation between assurance and environmental impact discussion as well as the numerical content of the report:

H2e: The language in assured CSR reports focuses more on the firm's environmental impact than the language in unassured CSR reports.

H2f: The language in assured CSR reports exhibits more numerical terms than the language in unassured CSR reports.

3. Sample and Methodology.

3.1 Sample Description

To form our sample, we hand-collect CSR report data during the reporting period of 2010 to 2012 from the corporate websites of S&P 500 firms.¹⁵ We then match the report data with financial data from Compustat and CRSP (Appendix B). None of our sample firms change their disclosure method during the reporting period that we examine which is likely the result of our focus on S&P 500 firms combined with a relatively short sample period. Thus, our initial analysis of CSR disclosure practices consists of one observation per firm (N = 423). We find significant variation in our sample firms' disclosure method, with about 8% providing no CSR disclosure at all.¹⁶ Of those that do disclose, 292 or about 69% provide a standalone report while the remaining 97 or about 23% provide a web-only disclosure. Table 1, Panel A, contains further descriptive statistics.

For the remainder of our analyses, the sample contains 475 firm-year observations for which all necessary report-level data is available. We use this sample of firm-year reports when examining report content (H2). Of the initial 292 firms that issue standalone reports (Table 1, Panel A), we were able to locate a total of 646 reports (Appendix B) – approximately 2.1 reports per reporting firm during our sample period, 2010-2012. The number of reports per firm is less than three for a number of reasons. First, although many firms are moving toward providing annual CSR reports, it is not uncommon for firms to issue CSR reports biannually. Also, our sample, which was collected in the second quarter of 2013, contains far fewer 2012 reports than 2010 or 2011 reports.¹⁷ This is consistent with our casual observation during data gathering that many firms do not issue CSR reports until the third or fourth

¹⁵ Some studies cited previously have used Corporate Register to collect CSR reports in .pdf format. We chose to hand-gather our sample for two reasons. First, hand-gathering allows us to include web-based CSR disclosures which are not available from Corporate Register. Second, Corporate Register collects only those CSR reports firms voluntarily submit to the site. As a result, hand collection allows us to avoid the additional complications associated with addressing a firm's incentives to voluntarily submit its CSR reports to the Corporate Register site.

¹⁶ We do not include static corporate policies such as a "Code of Conduct" as a CSR disclosure even if they are related to sustainability because they do not include hard data and are not updated frequently.

¹⁷ After imposing data restrictions, our final sample includes 192 observations from 2010, 195 from 2011, and 88 from 2012.

quarter of the year following the year covered by the report. Table 1, Panel B, contains descriptive statistics for our sample of reports. As shown in that panel, approximately 18.3% of the reports are externally assured and nearly 75% appear to be implementing the GRI framework. It is also worth noting that the average number of CSR reports made available by our sample firms, prior to the start of our sample period, is approximately 3.5.

3.2 Empirical Models

To examine the determinants of CSR reporting practices, we construct an ordinal variable, *REPORT_TYPE*, as a measure of the quality of the firm's CSR reporting regime. *REPORT_TYPE* is coded as one, two, or three if a firm provides no report, a web-only report, or a standalone report, respectively. We then regress this measure on factors that may affect a firm's CSR disclosure decision. Our ordered probit regression is as follows:

$$\begin{aligned}
 REPORT_TYPE_i = & \beta_0 + \beta_1 + \beta_2 SIZE_i + \beta_3 CAPX_i + \beta_4 PRC_VOL_i + \beta_5 CETR_i + \beta_6 MTB_i \\
 & + \beta_7 DTE_i + \beta_8 ROA_i + \sum IND_i + \varepsilon_i
 \end{aligned} \tag{1}$$

All variables are described in Appendix A. Consistent with our discussion above, we expect positive coefficients on our measures of firm size (*SIZE*) and capital expenditures (*CAPX*), a negative coefficient on our measure of firm risk (*PRC_VOL*) and we make no prediction on the sign of the coefficient on the firm's effective tax rate (*CETR*).¹⁸ We measure industry classification using the GICS sector classification, with *IND* representing industry indicator variables. To control for growth opportunities, we include the firm's market-to-book ratio (*MTB*). Finally, the firm's debt ratio (*DTE*) and financial performance (*ROA*) are included to control for financial risk and profitability, respectively.

To examine the relation between the content of standalone CSR reports and the firm's decision to voluntarily have the report assured, we construct most of our primary variables of interest using *DIRECTION*, a text-analysis program. Specifically, *DIRECTION* uses word lists to create measures of optimism (the number of optimistic words minus the number of pessimistic words), certainty (the number

¹⁸ Our ability to use alternative measures of tax avoidance is severely limited by data availability, even for our S&P 500 firms. Specifically, missing data for foreign taxes paid restricts our ability to identify firms with significant foreign tax expense and our ability to construct a tax shelter score (Lisowsky 2011).

of certain words minus the number of uncertain words) and numerical terms. We scale each of these raw scores by the total number of words in the report to create *OPTIMISM*, *CERTAINTY*, and *NUMERICAL*. *DICTION* also uses word lists to create a measure of embellishment (a selective ratio of adjectives to verbs) and we use this measure to define *EMBELLISHMENT* which is unscaled because it is computed as a ratio.¹⁹

Finally, we create two additional word lists to better understand the content of the firms' CSR reports. The first word list is designed to measure the frequency of the use of words that describe cultural or societal values and the second is designed to measure the frequency of the use of words that describe the firm's environmental impact.²⁰ Again, we scale each of these raw scores by the total number of words in the report to create *CULT_VALUES* and *ENV_IMPACT*. Having constructed these variables, we then regress our measures on our variable of interest (*ASSURED*) and controls:

$$\begin{aligned} OPTIMISM_{i,t} = & \beta_0 + \beta_1 ASSURED_{i,t} + \beta_2 HIST_NUM_REPORTS_{i,t} + \beta_3 GRI_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 CAPX_{i,t} \\ & + \beta_6 CETR_{i,t} + \beta_7 PRC_VOL_{i,t} + \beta_8 MTB_{i,t} + \beta_9 DTE_{i,t} + \beta_{10} ROA_{i,t} + \sum IND_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (2)$$

$$\begin{aligned} EMBELLISHMENT_{i,t} = & \beta_0 + \beta_1 ASSURED_{i,t} + \beta_2 HIST_NUM_REPORTS_{i,t} + \beta_3 GRI_{i,t} + \beta_4 SIZE_{i,t} \\ & + \beta_5 CAPX_{i,t} + \beta_6 CETR_{i,t} + \beta_7 PRC_VOL_{i,t} + \beta_8 MTB_{i,t} + \beta_9 DTE_{i,t} + \beta_{10} ROA_{i,t} + \sum IND_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (3)$$

$$\begin{aligned} CULT_VALUES_{i,t} = & \beta_0 + \beta_1 ASSURED_{i,t} + \beta_2 HIST_NUM_REPORTS_{i,t} + \beta_3 GRI_{i,t} + \beta_4 SIZE_{i,t} \\ & + \beta_5 CAPX_{i,t} + \beta_6 CETR_{i,t} + \beta_7 PRC_VOL_{i,t} + \beta_8 MTB_{i,t} + \beta_9 DTE_{i,t} + \beta_{10} ROA_{i,t} + \sum IND_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (4)$$

$$\begin{aligned} CERTAINTY_{i,t} = & \beta_0 + \beta_1 ASSURED_{i,t} + \beta_2 HIST_NUM_REPORTS_{i,t} + \beta_3 GRI_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 CAPX_{i,t} \\ & + \beta_6 CETR_{i,t} + \beta_7 PRC_VOL_{i,t} + \beta_8 MTB_{i,t} + \beta_9 DTE_{i,t} + \beta_{10} ROA_{i,t} + \sum IND_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (5)$$

$$\begin{aligned} ENV_IMPACT_{i,t} = & \beta_0 + \beta_1 ASSURED_{i,t} + \beta_2 HIST_NUM_REPORTS_{i,t} + \beta_3 GRI_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 CAPX_{i,t} \\ & + \beta_6 CETR_{i,t} + \beta_7 PRC_VOL_{i,t} + \beta_8 MTB_{i,t} + \beta_9 DTE_{i,t} + \beta_{10} ROA_{i,t} + \sum IND_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (6)$$

$$\begin{aligned} NUMERICAL_{i,t} = & \beta_0 + \beta_1 ASSURED_{i,t} + \beta_2 HIST_NUM_REPORTS_{i,t} + \beta_3 GRI_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 CAPX_{i,t} \\ & + \beta_6 CETR_{i,t} + \beta_7 PRC_VOL_{i,t} + \beta_8 MTB_{i,t} + \beta_9 DTE_{i,t} + \beta_{10} ROA_{i,t} + \sum IND_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (7)$$

¹⁹ The formal definitions of these *DICTION* created measures are in Appendix A.

²⁰ Both word lists are provided in Appendix A.

ASSURED is an indicator variable equal to 1 if the firm receives any form of external assurance of its CSR report and zero otherwise. Consistent with hypotheses H2a-H2c, assurance of CSR reports should be associated with reductions in optimism, embellishment and discussion of cultural values because each is expected to be greater when the firm engages in greenwashing. Similarly, consistent with hypotheses H2d-H2f, assurance of CSR reports should be associated with increases in the use of certain language (less obfuscation), discussion of environmental impacts and the use of numerical terms. As a result, we expect a negative association of assurance with *OPTIMISM*, *EMBELLISHMENT* and *CULT_VALUES* and a positive association with *CERTAINTY*, *ENV_IMPACT* and *NUMERICAL*.

In addition to the financial variables discussed above, we also include variables to proxy for CSR reporting characteristics. *HIST_NUM_REPORTS* is a hand-collected variable equal to the number of CSR reports publicly available prior to the start of our sample period. We use this variable to proxy for the firm's reporting history. We expect that firms with a longer reporting history will provide higher quality disclosures (less optimistic bias, more certainty, etc.). We also use *DICTION* to identify the number of times each report includes the term "GRI". While CSR reporting is typically voluntary, many firms produce (at least part of) their reports in accordance with the Global Reporting Initiative (GRI) framework. The GRI framework is a set of sustainability reporting standards designed to provide information on an organization's "most critical impacts – be they positive or negative – on the environment, society and the economy" (GRI 2014) and is the most common set of standards used by firms to guide their CSR reporting. We classify firms mentioning it more than five times as implementing the GRI framework and expect these firms to provide higher quality disclosures.

4. Results.

4.1. Report Form and Delivery as a Measure of Quality

The results of our ordered probit estimation of Equation (1) are presented in Table 2. We find a statistically significant, positive relation between both firm size ($p \leq 0.001$) and the level of the firm's capital expenditures ($p \leq 0.019$) and our dependent variable, *REPORT_TYPE*, consistent with H1a and H1b, respectively. The results support our arguments that both larger firms and firms undertaking significant capital projects are more likely to provide higher quality standalone CSR disclosures. We also find a statistically significant, negative relation between firm risk and CSR disclosure quality ($p \leq 0.000$), consistent with our argument that firms that adopt less risk taking as part of their corporate strategy are more likely to use higher quality standalone CSR reporting as an additional means to mitigate risk. In

contrast, we find no statistically significant relation between effective tax rates and CSR report type ($p \leq 0.749$). We suspect that this may be because we cannot distinguish those firms for which “firm culture” dominates the report-quality decision from those for which lower costs dominate the decision.

Finally, we find evidence that, to some extent, industry membership is related to CSR reporting quality. Benchmarked against the consumer discretionary sector, we find that firms in the materials and consumer staples sectors (sectors that arguably face the greatest public scrutiny) are more likely to provide high quality CSR disclosure: the coefficients on *MATERIALS* and *CONS_STAP* are positive and statistically significant ($p \leq 0.019$ and $p \leq 0.043$, respectively). We also find that firms in the energy, financial and telecom sectors are less likely to provide high quality CSR disclosure relative to the consumer discretionary sector: the coefficients on *ENERGY*, *FINANCIAL* and *TELECOM* are negative and statistically significant ($p \leq 0.009$, $p \leq 0.009$ and $p \leq 0.001$ respectively). These results are consistent with our expectation that firms in these sectors likely face less scrutiny than firms in the consumer discretionary sector.

Overall, our tests of H1a-H1e indicate that the choice of report delivery format is related to firm-specific characteristics in ways that suggest that when the benefits of enhancing report quality are high, firms choose to deliver more “permanent” CSR disclosures that are easier to archive.

4.2. Independent Assurance and Report Content

The results of our regressions testing H2a-f are contained in Tables 3 through 8. In Table 3, we present the results of our estimation of Equation (2). Consistent with H2a, we find a statistically significant, negative relation between external assurance and optimism in CSR reports ($p \leq 0.021$). In Table 4, we present the results of our estimation of Equation (3). Consistent with H2b, we find a statistically significant, negative relation between external assurance and embellishment in CSR reports ($p \leq 0.002$). These results indicate that assured reports contain more “conservative” language than unassured reports, and thus are less likely to mislead readers in a manner consistent with greenwashing.

In Table 5, we present the results of our estimation of Equation (4). Consistent with H2c, we find a statistically significant, negative relation between external assurance and the discussion of cultural/societal values in CSR reports ($p \leq 0.029$). This suggests that assured reports contain less

discussion of more subjective and hard-to-verify firm policies that could also be used to mislead readers in a manner consistent with greenwashing

In Table 6, we present our estimation of Equation (5). Consistent with H2d, we find a statistically significant, positive relation between external assurance and the use of more “certainty” in the language in the CSR report ($p \leq 0.001$). In Table 7, we present the estimation of Equation (6). Consistent with H2e, we find a statistically significant, positive relation between external assurance and the discussion of environmental impacts in the CSR report ($p \leq 0.020$). Finally, in Table 8, we present our estimation of Equation (7). Consistent with H2f, we find a statistically significant, positive relation between external assurance and the use of numerical terms in the CSR report ($p \leq 0.042$). Again, we find that external assurance is associated with content that indicates less greenwashing on the part of the reporting firm: assured reports tend to contain more concrete language and more “hard” information.

Taken together, the results in Tables 3 through 8 suggest that external assurance is associated with CSR reports that are more conservative in terms of their language and more focused on providing quantitative or verifiable information. Thus, we offer the first evidence that external assurers fulfill a monitoring role and curtail greenwashing in CSR reports.

Before turning to our supplemental analysis, we note that some of the other variables in the regressions in Tables 3 through 8 offer additional insights into how the contents of standalone CSR reports differ. For example, we find that the firm’s reporting history (the number of pre-2010 standalone reports available on the firm’s website) is negatively associated with the use of optimistic words in the current CSR report ($p \leq 0.021$) and is positively associated with the use of certain language ($p \leq 0.000$) and the use of numerical terms ($p \leq 0.001$) in the current CSR report. These results suggest that firms with a longer history of providing CSR reports are less likely to engage in greenwashing even after controlling for whether the report is assured.

Similarly, we find a statistically significant, negative relation between the adoption of the GRI framework and the number of optimistic words ($p \leq 0.001$) and embellishment ($p \leq 0.009$) in the report, but a statistically significant, positive relation between the adoption of the GRI framework and the use of more certain words ($p \leq 0.001$) in CSR reports. These results suggest that firms that adopt the GRI framework are less likely to engage in greenwashing even after controlling for whether the report is assured.

Interestingly, the adoption of the GRI framework is *not* associated with the use of numerical terms in the

CSR report which suggests that firms that do not adopt the GRI framework substitute numerical terms for the actual numbers reported in the GRI framework. Adoption of the GRI framework is also *not* associated with the discussion of environmental impacts which suggests that firms that do not adopt the GRI reporting framework substitute discussion of their environmental efforts for the GRI report itself.

Finally, we find limited evidence of industry effects on the content of CSR reports. Specifically, we find that the *HEALTHCARE* sector uses more optimistic language in its CSR reports ($p \leq 0.027$) and the *MATERIALS* and *UTILITIES* sectors use less optimistic language ($p \leq 0.044$ and $p \leq 0.002$, respectively) when compared to the remaining sectors (*ENERGY*, *INDUSTRIAL*, *CONS_STAP*, *CONS_DISC*, *FINANCIAL*, *IT* and *TELECOM*). We also find that all of the sectors discuss cultural/societal values more than the *CONS_DISC* and *UTILITES* sectors. These results offer preliminary evidence that the form of greenwashing employed may vary across industries.

Overall, the results of our tests of H2a-f provide evidence that external assurance of CSR reports is positively associated with the quality of these reports as measured by their linguistic content – they contain less optimistic language, less embellishment, less discussion of cultural/societal values, more certain language, more discussion of environmental impacts and greater use of numerical terms. Prior research on the assurance of CSR reports has maintained, but not formally tested, the assumption that assurance is a “useful control mechanism” and adds to the credibility of the report (Simnett et al.2009, Casey and Grenier 2015). Our study contributes to the literature by directly testing this assertion and providing the first evidence of the relationship between external assurance and the quality of CSR reports. Having found support for the use of external assurance as a reliable proxy for CSR disclosure quality, we now turn to a further examination of the determinants of the assurance decision.

5. Supplemental Analysis – Drivers of Assurance.

Several studies have examined a firm’s decision to purchase independent assurance of its CSR reports and have attempted to identify firm characteristics associated with the decision. Using an international sample, Simnett et al. (2009) find that larger firms as well as firms in particular industries and operating under specific legal regimes are more likely to seek external assurance. Casey and Grenier (2015) conduct a similar analysis on a sample of U.S. firms, arguing that the U.S. market for CSR assurance is inherently different than markets in the rest of the world. Although they replicate Simnett et al.’s positive associations between assurance and both firm size and the mining industry, they do not find an association with other industry variables and, unlike Simnett et al., they document a negative association

between assurance and leverage. In light of these mixed results and based on our examination of characteristics associated with the firm's choice of quality for its CSR report, we introduce a number of additional characteristics that we expect to be associated with the firm's choice to have its CSR report assured. Our objective is to shed additional light on this decision.

First, we argue that firms with a longer history of CSR reports archived and available on their websites will be more likely to have their CSR reports assured. Initiating and developing an effective internal CSR reporting function is costly and time-consuming. While some aspects of this function may be tangentially related to other functions within the firm (e.g. financial reporting, marketing, public relations, etc.), the majority of the necessary skills will be CSR-specific. As such, it is reasonable to expect that firms may require a few iterations before becoming proficient CSR reporters. Thus, we expect that firms are more likely to seek external assurance only after they have become comfortable with the proficiency of their own internal CSR reporting function and are willing to leave an easily accessed history on their websites. Nike's 2012 CSR report provides an excellent example:

“We understand the role of external assurance. We have explored third-party assurance and audit systems with leading providers. We continue to review the issue with company management, our internal audit team and other external stakeholders. *We still believe we have internal steps to complete before undertaking a robust external review.*” [emphasis added]

As such, we hypothesize that firms with a longer history of CSR reports available on their websites will be more likely to obtain external assurance.

Second, we expect that firms that have adopted the GRI framework will be more likely to seek external CSR assurance. The GRI framework specifically recommends that reports be externally assured and rewards those that are with better “grades.” Firms self-report a level of compliance with the GRI framework and assign themselves a grade – which need not be externally verified. However, firms are rewarded for obtaining external assurance. The GRI guidance Application Levels and Assurance notes: “A ‘plus’ (+) is available at each level (ex., C+, B+, A+) if external assurance was utilized for the report” (GRI, 2011). Further, as with firms with longer histories of CSR reporting, we expect that firms adopting the GRI framework are likely to face smaller incremental costs to develop an effective internal CSR reporting infrastructure. As a result, we hypothesize that firms following the GRI reporting framework are more likely to obtain external assurance.

Third, we believe that another possible driver of assurance is the firm’s level of capital expenditures, which often represents major undertakings that may have significant environmental implications. Also, unlike some of the other information contained in CSR reports, the firm’s environmental impact is often quantifiable (*e.g.*, the carbon footprint of a new factory in metric tons). As such, we believe that as firms undertake these types of projects and report on them, stakeholders will demand assurance of the quantifiable data in the report. Also, because capital expenditures sometimes represent activities designed to reduce the firm’s environmental impact, firms engaged in these “green” activities have incentives to seek external assurance in order to credibly signal that they are socially responsible types (see Bagnoli and Watts 2016). Finally, as we argued earlier, we expect that firms engaged in higher levels of capital expenditures take a longer term perspective in their decision-making processes. This longer term perspective can motivate the firm to not only offer a high quality CSR report but also to enhance its credibility by having the report assured. For these reasons, we hypothesize that firms with greater capital expenditures will be more likely to obtain external assurance.

Fourth, insofar as a firm’s effective tax rate proxies for whether it is socially responsible, it should be related to the decision to purchase CSR assurance. Specifically, if tax-avoiders are socially irresponsible, it is plausible that the CSR reports produced by these firms are primarily greenwashing and that these firms will be reluctant to obtain external assurance whereas socially responsible firms use assurance as a mechanism for signaling their type. Alternatively, if low effective tax rates are associated with significant business activities in European countries which generally require more CSR disclosure, the incremental cost to create reports that can be assured is smaller. If so, then we would expect that firms with lower effective tax rates are more likely to have their CSR reports assured. As a result of this tension between differences in benefits and costs of external assurance for firms with lower effective tax rates, we do not make a directional prediction for the relation between a firm’s effective tax rate and the likelihood that it will obtain external assurance.

To test these hypotheses, we estimate a probit regression of our primary variable of interest, *ASSURED*, on our proposed determinants and variables previously found to be associated with the decision to assure CSR reports:

$$\begin{aligned}
 ASSURED_{i,t} = & \beta_0 + \beta_1 HIST_NUM_REPORTS_{i,t} + \beta_2 GRI_{i,t} + \beta_3 CAPX_{i,t} + \beta_4 CETR_{i,t} + \beta_5 SIZE_{i,t} \\
 & + \beta_6 ROA_{i,t} + \beta_7 DTE_{i,t} + \beta_8 MTB_{i,t} + \beta_9 PRC_VOL_{i,t} + \sum IND_{i,t} + \epsilon_{i,t}
 \end{aligned}
 \tag{8}$$

where *ASSURED* is an indicator equal to 1 if the firm received any kind of external assurance of its CSR report during the year and zero otherwise. Other than our proposed determinants, we follow prior research and include controls for size, profitability (*ROA*), leverage (*DTE*) and industry (Simnett et al. 2009; Casey and Grenier 2015). Finally, we control for growth opportunities (*MTB*) and firm risk (*PRC_VOL*).

We present the results of estimating Equation (8) in Table 9. We find statistically significant, positive coefficients on all four of our proposed drivers of CSR assurance. Specifically, we find that firms with a longer history of CSR reports archived and available on their websites are more likely to obtain external assurance ($p \leq 0.019$), although the marginal effect is relatively small, 1.5%. We also find that firms that have adopted the GRI framework are much more likely to obtain external assurance ($p \leq 0.005$). The marginal effect of *GRI* in the model is 0.11, suggesting that GRI reporters are 11% more likely to obtain assurance than non-GRI reporters. Taken together, these results indicate that firms that have experience producing standalone CSR reports or who have adopted the GRI reporting framework incur lower costs to, or receive higher benefits from, producing a CSR report of sufficient quality to warrant being assured. We also find that firms with high levels of capital expenditures are more likely to have their standalone reports assured ($p \leq 0.029$). This result suggests that firms with longer planning horizons or that are more actively investing in socially responsible activities are more likely to choose to have their standalone CSR reports assured. Finally, we find that firms with higher effective tax rates are more likely to have their standalone CSR reports assured ($p \leq 0.014$) and that the marginal effect is quite large, 25.6%. This result is consistent with the idea that firms that either develop a strong culture of social responsibility or that seek to “signal” that they are socially responsible (Bagnoli and Watts 2016) are also more likely to have their standalone CSR reports assured.

6. Conclusions.

Socially responsible activities and sustainability initiatives are increasingly being included in a firm’s corporate strategy, and as a result, firms are increasingly motivated to voluntarily provide formal reports on these activities. However, despite these trends, there remains significant flexibility in corporate social responsibility (CSR) reporting. Possibly because of the diverse information needs of those demanding disclosure, no standard, universal requirements for preparing and distributing CSR reports have been

widely adopted.²¹ As a result, CSR report quality likely varies significantly across firms, even when those firms are large, publicly traded corporations.

In this paper, we study how certain aspects of quality vary across CSR reports produced by different firms. Specifically, we examine the way in which large, publicly traded firms deliver these reports via their websites and then, for a subset of the reports, we study how the content of the report varies with whether or not the report is assured by an independent third party.

Although prior research has examined the decision to provide a CSR report, to our knowledge, this work has not studied the ways in which the reports are delivered to the public. Firms that provide CSR reports offer them as either downloadable, standalone files (in a .pdf or similar format) or web pages, sometimes in the form of a digital magazine. We view the standalone version as essentially permanent, and therefore higher quality, because it is relatively easy for consumers of the information to retain the content and for a third party to assure. Web pages or digital magazines, on the other hand, can be updated or changed at will, making it more difficult to retain an historical record of the content and difficult, as well as risky, to assure. We hypothesize and find that report delivery varies in systematic ways with firm characteristics. In particular, larger firms and firms undertaking significant capital expenditures are more likely to provide standalone CSR reports. This is consistent with prior results on other types of disclosures: larger firms provide higher quality financial disclosures. It is also consistent with high-capital-expenditure firms having a longer term outlook and realizing a net benefit from reporting the socially responsible nature of their capital projects and other activities in a higher quality manner (i.e., through a standalone report). We further hypothesize and find that less risky firms are more likely to deliver standalone reports, consistent with our expectation that firms that adopt low risk strategies are more likely to benefit from higher quality CSR reporting. Finally, we find that there are industry effects associated with the delivery format choice: firms that are in sectors that face greater public scrutiny (i.e., the materials or consumer staples sectors) are most likely to offer standalone CSR reports.

For the subset of sample reports that were delivered in the standalone, .pdf format, we expect and find that the content of the report varies in systematic ways with the presence of third-party assurance of the

²¹ As mentioned previously, according to EY (2014a), there are numerous private standards, guidelines and frameworks that help companies prepare and report sustainability information. However, as noted in a March 2014 speech by SEC Commissioner Daniel Gallagher, private entities trying to develop standards, guidelines or frameworks "...have no role in the establishment of *mandated* disclosure requirements" (Allen 2014, emphasis added).

report. Specifically, we hypothesize and find that the language in the firm's CSR report is both less optimistic (arguably, more conservative), less embellished and more certain when the report is assured. These results are consistent with the idea that third party assurers verify the firm's claims and moderate them, thereby reducing the amount of greenwashing the firm might otherwise engage in. We also hypothesize and find that cultural/societal values are discussed less frequently in reports that are assured but that environmental impact is discussed more frequently in those reports when compared to unassured reports.²² Further, significantly more numerical terms are used in reports that are assured suggesting that firms opting to have their reports assured are more likely to provide quantifiable content. Taken together, our results provide the first evidence that third-party assurers fulfill a monitoring role on the content of CSR reports and curtail greenwashing in them. Interestingly, firms that have a longer history of providing CSR reports and firms that have adopted the GRI reporting framework are less likely to greenwash even after controlling for external assurance.

Finally, in supplemental analysis, we offer evidence on the impact of our results on the assurance decision and extend the prior empirical literature on the decision to assure CSR reports. We hypothesize and find that firms that have longer standalone CSR report histories available on their web sites, firms that adopt the GRI reporting framework, and firms that undertake significant capital expenditures are more likely to have their standalone CSR reports assured. These results are consistent with the idea that firms that reveal that they have greater experience with CSR reporting or that have adopted the GRI reporting framework have already incurred more of the costs associated with putting the reporting systems in place that are required if they wish to seek third party assurance. As a result, these firms face lower incremental costs of having their CSR reports assured making it more likely that they choose to have the report assured (consistent with the signaling argument in Bagnoli and Watts 2016).

²² Discussion of cultural/societal values is "soft information" in that it is difficult to accurately assess the firm's efforts on these dimensions and thus is easier to exaggerate. Environmental impact, on the other hand, is often quantified and therefore easier to verify.

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Appendix A: Variable Descriptions

ASSURED: An indicator variable equal to one if the firm receives external assurance of its CSR report and zero otherwise (Hand-collected)

CAPX: Capital Expenditures (*CAPX*) (from Compustat)

CERTAINTY: The number of certain words minus the number of uncertain words, scaled by the total number of words in the report as defined by *DICTION*. (Collected via *DICTION*)

CETR: Three-year cash effective tax rate. Calculated as the three-year sum of cash taxes paid (*TXPD*) divided by pretax income (*PI*) less special items (*SPI*) over the same period (from Compustat)

CULT_VALUES: The number of words that describe cultural or societal values, scaled by the total number of words in the report.²³ (Collected via *DICTION*)

DTE: Total debt (*DLTT* + *DLC*) divided by book value of equity (*CEQ*) (from Compustat)

EMBELLISHMENT: The ratio of adjectives to verbs as defined by *DICTION*. (Collected via *DICTION*)

ENV_IMPACT: The number of words that describe environmental or sustainable activities, scaled by the total number of words in the report.²⁴ (Collected via *DICTION*)

GRI: An indicator variable equal to one if the firm's CSR report includes the term "GRI" more than five times. (Collected via *DICTION*)

HIST_NUM_REPORTS: The number of prior years' CSR reports publicly available. (Hand-collected)

IND: GICS Industry Indicators: ENERGY, MATERIALS, INDUSTRIAL, CONS_DISC, CONS_STAP, HEALTHCARE, FINANCIAL, IT, TELECOM, UTILITIES (from Compustat)

MTB: Market value of equity (*CSHFD* * *PRCC_F*) divided by book value of equity (*CEQ*) (from Compustat)

NUMERICAL: The number of numerical terms in the report scaled by the total number of words in the report as defined by *DICTION*. (Collected via *DICTION*)

OPTIMISM: The number of positive words minus the number of negative words, scaled by the total number of words in the report as defined by *DICTION*. (Collected via *DICTION*)

²³ The word list used is: Assistance, Benefits, Compensation, Discrimination, Diversity, Education, Emotional, Employees, Equality, Ethnic, Flextime, Health, Inclusion, Labor, Labour, LGBT, LGBTQ, Mental, Minorities, Nutrition, OSHA, Racial, Retention, Safety, Telecommute, Training, Wage, Wellness, Whistle-blower, Women and Work-Life.

²⁴ The word list used is: By-product, Carbon, Clean, Climate, CO2, Conflict, Conservation, Conserve, Consumption, Development, Dioxide, EHS, Emissions, Energy, Environment, Footprint, GHG, Green, Greenhouse, LEED, Pollution, Recycle, Recycled, Recycling, Renewable, Reuse, Solar, Stewardship, Sustainability, Sustainable, Waste and Water.

PRC_VOL: Standard deviation of share price during the year (from CRSP)

ROA: Net income (*NI*) divided by total assets (*AT*) (from Compustat)

REPORT_TYPE: An ordered variable equal to one if the firm provides no CSR report, two if the firm issues only a web-based report, and three if the firm issues a permanent report. (Hand-collected)

SIZE: The natural log of total assets (*AT*) (from Compustat)

Appendix B: Sample Selection

Firm Level Data

Firms with necessary financial data	462
Less: 3-year loss firms	(14)
Less: Firms missing price volatility data (CRSP)	(25)
<hr/>	
Total number of firm observations	423
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Firm-Year Level Data

Initial number of collected reports	646
Less: Reports unreadable by Diction	(32)
Less: Firm-years missing financial data (Compustat)	(91)
Less: 3-year loss firm-years	(28)
Less: Firm-years missing price volatility data (CRSP)	(20)
<hr/>	
Total number of firm-year observations	475
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Table 1: Descriptive Statistics

Panel A: Firm Level Data

	REPORT_TYPE = 1 (No Report) n = 34 (firms)			REPORT_TYPE = 2 (Web-Based Report) n = 97 (firms)			REPORT_TYPE = 3 (Standalone Report) n = 292 (firms)			Full Sample n = 423 (firms)		
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.
SIZE	9.149	9.101	1.125	9.215	9.102	1.194	9.962	9.737	1.488	9.725	9.553	1.441
CAPX	337.145	152.865	494.469	678.751	165.100	1289.680	1457.760	386.827	3323.100	1189.050	306.494	2860.200
CETR	0.181	0.229	0.159	0.186	0.229	0.239	0.190	0.197	0.173	0.188	0.209	0.189
PRC_VOL	9.454	5.644	14.493	5.436	3.557	6.877	4.044	2.870	4.152	4.798	3.079	6.427
MTB	2.801	2.252	2.196	1.900	2.241	11.906	4.619	2.238	36.082	3.850	2.241	30.524
DTE	0.552	0.188	1.065	0.408	0.227	0.544	0.715	0.296	1.747	0.632	0.256	1.509
ROA	0.072	0.073	0.061	0.079	0.062	0.068	0.062	0.055	0.059	0.067	0.059	0.061
ENERGY	0.147	0.000	0.359	0.093	0.000	0.292	0.065	0.000	0.247	0.078	0.000	0.269
MATERIALS	0.000	0.000	0.000	0.041	0.000	0.200	0.092	0.000	0.290	0.073	0.000	0.261
INDUSTRIAL	0.118	0.000	0.327	0.113	0.000	0.319	0.116	0.000	0.321	0.116	0.000	0.320
CONS_DISC	0.206	0.000	0.410	0.206	0.000	0.407	0.151	0.000	0.358	0.168	0.000	0.374
CONS_STAP	0.000	0.000	0.000	0.041	0.000	0.200	0.089	0.000	0.285	0.071	0.000	0.257
HEALTHCARE	0.029	0.000	0.171	0.124	0.000	0.331	0.099	0.000	0.300	0.099	0.000	0.299
FINANCIAL	0.294	0.000	0.462	0.196	0.000	0.399	0.161	0.000	0.368	0.180	0.000	0.384
IT	0.147	0.000	0.359	0.155	0.000	0.363	0.137	0.000	0.344	0.142	0.000	0.349
TELECOM	0.059	0.000	0.239	0.010	0.000	0.102	0.007	0.000	0.083	0.012	0.000	0.108
UTILITIES	0.000	0.000	0.000	0.021	0.000	0.143	0.082	0.000	0.275	0.061	0.000	0.240

This table contains firm level descriptive statistics for the sample used in the tests of H1. Statistics are presented for the entire sample and partitioned by REPORT_TYPE. REPORT_TYPE is an ordered variable equal to 1 for firms that do not issue a CSR report, equal to 2 if a firm only issues web-based CSR reports and equal to 3 if a firm issues a standalone CSR report. Other variables are as defined in Appendix A.

Table 1: Descriptive Statistics*Panel B: Firm-Year Data*

(n= 475 firm-years)

	Mean	Median	Std. Dev.
<i>ASSURED</i>	0.183	0.000	0.387
<i>GRI</i>	0.749	1.000	0.434
<i>HIST_NUM_REPORTS</i>	3.467	3.000	2.468
<i>OPTIMISM</i>	0.012	0.009	0.012
<i>EMBELLISHMENT</i>	0.399	0.380	0.165
<i>CULT_VALUES</i>	0.013	0.013	0.006
<i>CERTAINTY</i>	0.299	0.262	0.221
<i>ENV_IMPACT</i>	0.023	0.020	0.014
<i>NUMERICAL</i>	0.060	0.056	0.026
<i>SIZE</i>	9.965	9.769	1.391
<i>CAPX</i>	1448.260	474.000	3371.000
<i>CETR</i>	0.210	0.207	0.163
<i>PRC_VOL</i>	4.932	3.114	7.257
<i>MTB</i>	4.434	2.293	36.534
<i>DTE</i>	0.579	0.277	1.175
<i>ROA</i>	0.064	0.059	0.059
<i>ENERGY</i>	0.063	0.000	0.244
<i>MATERIALS</i>	0.093	0.000	0.290
<i>INDUSTRIAL</i>	0.139	0.000	0.346
<i>CONS_DISC</i>	0.126	0.000	0.333
<i>CONS_STAP</i>	0.103	0.000	0.304
<i>HEALTHCARE</i>	0.109	0.000	0.313
<i>FINANCIAL</i>	0.133	0.000	0.340
<i>IT</i>	0.128	0.000	0.335
<i>TELECOM</i>	0.008	0.000	0.091
<i>UTILITIES</i>	0.097	0.000	0.296

This table contains firm-year descriptive statistics for the sample of standalone reports used in the tests of H2 (2010-2012). *ASSURED* is an indicator variable equal to one if a firm receives independent assurance of its CSR report that year and zero otherwise. Other variables are as defined in Appendix A.

Table 2: Determinants of Report Type
Results of Ordered Probit Model

Variable	Pred. Sign	Estimate	Std. Error	z	Pr> z
Cutoff 1		0.874	0.657		
Cutoff 2		1.979	0.659		
<i>SIZE</i>	+	0.276	0.071	3.87	<0.001
<i>CAPX</i>	+	0.000	0.000	2.09	0.019
<i>PRC_VOL</i>	-	-0.038	0.011	-3.56	0.000
<i>CETR</i>	?	-0.114	0.355	-0.32	0.749
<i>MTB</i>		0.004	0.007	0.55	0.584
<i>DTE</i>		0.000	0.063	0.01	0.995
<i>ROA</i>		0.102	1.253	0.08	0.935
<i>ENERGY</i>		-0.745	0.285	-2.61	0.009
<i>MATERIALS</i>		0.781	0.333	2.34	0.019
<i>INDUSTRIAL</i>		0.058	0.241	0.24	0.811
<i>CONS_STAP</i>		0.700	0.346	2.02	0.043
<i>HEALTHCARE</i>		0.121	0.255	0.47	0.636
<i>FINANCIAL</i>		-0.642	0.247	-2.6	0.009
<i>IT</i>		-0.042	0.225	-0.19	0.850
<i>TELECOM</i>		-2.346	0.709	-3.31	0.001
<i>UTILITIES</i>		0.495	0.415	1.19	0.234
n (firms)		423			
Pseudo R ²		0.1444			

This table presents the results of an ordered probit regression of Equation (1). The dependent variable, *REPORT_TYPE*, is an ordered variable equal to one for firms that do not issue a CSR report, equal to two if a firm only issues web-based CSR reports and equal to three if a firm issues a standalone CSR report. Other variables are defined in Appendix A. One-tailed significance is reported for hypothesized relationships (two-tailed otherwise)

Table 3: Determinants of Content - Optimism

Results of OLS Model

Variable	Pred. Sign	Estimate	Std Error	t Value	Pr > t
Intercept		0.0233	0.0051	4.60	<0.001
<i>ASSURED</i>	-	-0.0028	0.0014	-2.04	0.021
<i>HIST_NUM_REPORTS</i>		-0.0005	0.0002	-2.32	0.021
<i>GRI</i>		-0.0098	0.0012	-8.21	<0.001
<i>SIZE</i>		0.0002	0.0005	0.37	0.712
<i>CAPX</i>		0.0000	0.0000	-0.66	0.512
<i>CETR</i>		0.0004	0.0032	0.11	0.909
<i>PRC_VOL</i>		0.0000	0.0001	-0.41	0.679
<i>MTB</i>		0.0000	0.0000	-0.19	0.847
<i>DTE</i>		-0.0008	0.0005	-1.49	0.138
<i>ROA</i>		-0.0244	0.0098	-2.50	0.013
<i>ENERGY</i>		0.0012	0.0027	0.44	0.657
<i>MATERIALS</i>		-0.0044	0.0022	-2.02	0.044
<i>INDUSTRIAL</i>		-0.0023	0.0020	-1.19	0.235
<i>CONS_STAP</i>		-0.0003	0.0021	-0.14	0.891
<i>HEALTHCARE</i>		0.0046	0.0021	2.21	0.027
<i>FINANCIAL</i>		-0.0027	0.0024	-1.15	0.251
<i>IT</i>		0.0005	0.0020	0.26	0.793
<i>TELECOM</i>		-0.0076	0.0066	-1.16	0.248
<i>UTILITIES</i>		-0.0072	0.0023	-3.15	0.002
n (reports)		475			
Adj R ²		0.2081			

This table presents the results of an OLS regression of Equation (2). The dependent variable, *OPTIMISM*, is defined as the number of positive words in the report minus the number of negative words, scaled by the total number of words in the report. Other variables are as defined in Appendix A. One-tailed significance is reported for hypothesized relationships (two-tailed otherwise).

Table 4: Determinants of Content - Embellishment

Results of OLS Model

Variable	Pred. Sign	Estimate	Std Error	t Value	Pr > t
Intercept		0.4189	0.0745	5.62	<0.001
<i>ASSURED</i>	-	-0.0564	0.0199	-2.84	0.002
<i>HIST_NUM_REPORTS</i>		-0.0047	0.0033	-1.44	0.151
<i>GRI</i>		-0.0457	0.0176	-2.60	0.009
<i>SIZE</i>		0.0052	0.0080	0.66	0.511
<i>CAPX</i>		0.0000	0.0000	-1.33	0.183
<i>CETR</i>		0.0349	0.0472	0.74	0.460
<i>PRC_VOL</i>		-0.0011	0.0010	-1.10	0.272
<i>MTB</i>		0.0000	0.0002	0.02	0.983
<i>DTE</i>		0.0013	0.0077	0.17	0.863
<i>ROA</i>		-0.1433	0.1437	-1.00	0.319
<i>ENERGY</i>		0.1174	0.0399	2.94	0.003
<i>MATERIALS</i>		-0.0551	0.0319	-1.73	0.084
<i>INDUSTRIAL</i>		0.0139	0.0287	0.49	0.628
<i>CONS_STAP</i>		0.0147	0.0308	0.48	0.634
<i>HEALTHCARE</i>		-0.0339	0.0304	-1.12	0.265
<i>FINANCIAL</i>		0.0264	0.0348	0.76	0.448
<i>IT</i>		0.0014	0.0295	0.05	0.962
<i>TELECOM</i>		0.0465	0.0972	0.48	0.633
<i>UTILITIES</i>		-0.0458	0.0337	-1.36	0.175
n (reports)		475			
Adj R ²		0.0809			

This table presents the results of an OLS regression of Equation (3). The dependent variable, *EMBELLISH*, is equal to each report's "embellishment" score, as calculated by Diction. Other variables are as defined in Appendix A. One-tailed significance is reported for hypothesized relationships (two-tailed otherwise).

Table 5: Determinants of Content – Cultural Values

Results of OLS Model

Variable	Pred. Sign	Estimate	Std Error	t Value	Pr > t
Intercept		0.0102	0.0028	3.59	<0.001
<i>ASSURED</i>	-	-0.0014	0.0008	-1.90	0.029
<i>HIST_NUM_REPORTS</i>		-0.0001	0.0001	-1.11	0.268
<i>GRI</i>		0.0002	0.0007	0.35	0.726
<i>SIZE</i>		0.0000	0.0003	0.03	0.977
<i>CAPX</i>		0.0000	0.0000	-1.24	0.217
<i>CETR</i>		0.0013	0.0018	0.73	0.464
<i>PRC_VOL</i>		-0.0001	0.0000	-1.30	0.195
<i>MTB</i>		0.0000	0.0000	0.33	0.743
<i>DTE</i>		-0.0003	0.0003	-0.85	0.394
<i>ROA</i>		0.0021	0.0055	0.38	0.704
<i>ENERGY</i>		0.0069	0.0015	4.56	<0.001
<i>MATERIALS</i>		0.0029	0.0012	2.37	0.018
<i>INDUSTRIAL</i>		0.0052	0.0011	4.77	<0.001
<i>CONS_STAP</i>		0.0047	0.0012	3.99	<0.001
<i>HEALTHCARE</i>		0.0078	0.0012	6.77	<0.001
<i>FINANCIAL</i>		0.0040	0.0013	3.01	0.003
<i>IT</i>		0.0036	0.0011	3.24	0.001
<i>TELECOM</i>		0.0088	0.0037	2.38	0.018
<i>UTILITIES</i>		0.0011	0.0013	0.89	0.376
n (reports)		475			
Adj R ²		0.1190			

This table presents the results of an OLS regression of Equation (4). The dependent variable, *CULT_VALUES*, is defined as the number of corporate culture terms in the report scaled by the total number of words in the report. Other variables are as defined in Appendix A. One-tailed significance is reported for hypothesized relationships (two-tailed otherwise).

Table 6: Determinants of Content - Certainty

Results of OLS Model

Variable	Pred. Sign	Estimate	Std Error	t Value	Pr > t
Intercept		-0.1649	0.0900	-1.83	0.068
<i>ASSURED</i>	+	0.1319	0.0240	5.49	<0.001
<i>HIST_NUM_REPORTS</i>		0.0147	0.0040	3.70	<0.001
<i>GRI</i>		0.1372	0.0212	6.47	<0.001
<i>SIZE</i>		0.0285	0.0096	2.96	0.003
<i>CAPX</i>		0.0000	0.0000	0.21	0.830
<i>CETR</i>		-0.1075	0.0570	-1.89	0.060
<i>PRC_VOL</i>		-0.0011	0.0012	-0.85	0.393
<i>MTB</i>		0.0001	0.0002	0.54	0.586
<i>DTE</i>		-0.0056	0.0093	-0.60	0.546
<i>ROA</i>		0.1235	0.1736	0.71	0.477
<i>ENERGY</i>		0.0114	0.0481	0.24	0.813
<i>MATERIALS</i>		0.0329	0.0385	0.85	0.394
<i>INDUSTRIAL</i>		0.0510	0.0347	1.47	0.143
<i>CONS_STAP</i>		0.0789	0.0372	2.12	0.034
<i>HEALTHCARE</i>		-0.0129	0.0367	-0.35	0.727
<i>FINANCIAL</i>		-0.0022	0.0421	-0.05	0.959
<i>IT</i>		-0.0393	0.0356	-1.10	0.271
<i>TELECOM</i>		0.0674	0.1174	0.57	0.566
<i>UTILITIES</i>		0.1101	0.0407	2.70	0.007
n (reports)		475			
Adj R ²		0.2573			

This table presents the results of an OLS regression of Equation (5). The dependent variable, *CERTAINTY*, is defined as the number of certain words in the report minus the number of uncertain words, scaled by the total number of words in the report. Our word lists are found in Appendix C. Other variables are as defined in Appendix A. One-tailed significance is reported for hypothesized relationships (two-tailed otherwise).

Table 7: Determinants of Content - Environmental Information

Results of OLS Model

Variable	Pred. Sign	Estimate	Std Error	t Value	Pr > t
Intercept		0.0259	0.0063	4.11	<0.001
<i>ASSURED</i>	+	0.0035	0.0017	2.06	0.020
<i>HIST_NUM_REPORTS</i>		-0.0002	0.0003	-0.73	0.467
<i>GRI</i>		0.0006	0.0015	0.42	0.675
<i>SIZE</i>		0.0001	0.0007	0.16	0.877
<i>CAPX</i>		0.0000	0.0000	0.39	0.699
<i>CETR</i>		-0.0027	0.0040	-0.67	0.505
<i>PRC_VOL</i>		0.0000	0.0001	-0.16	0.875
<i>MTB</i>		0.0000	0.0000	-0.23	0.817
<i>DTE</i>		-0.0012	0.0007	-1.90	0.058
<i>ROA</i>		-0.0260	0.0122	-2.14	0.033
<i>ENERGY</i>		-0.0062	0.0034	-1.84	0.066
<i>MATERIALS</i>		-0.0009	0.0027	-0.33	0.741
<i>INDUSTRIAL</i>		0.0008	0.0024	0.34	0.735
<i>CONS_STAP</i>		-0.0042	0.0026	-1.61	0.109
<i>HEALTHCARE</i>		-0.0029	0.0026	-1.13	0.259
<i>FINANCIAL</i>		-0.0069	0.0030	-2.34	0.020
<i>IT</i>		0.0002	0.0025	0.07	0.948
<i>TELECOM</i>		-0.0108	0.0082	-1.32	0.188
<i>UTILITIES</i>		0.0030	0.0029	1.06	0.287
n (reports)		475			
Adj R ²		0.0433			

This table presents the results of an OLS regression of Equation (6). The dependent variable, *ENV_IMPACT*, is defined as the number of environmental and sustainability-related terms in the report scaled by the total number of words in the report. Other variables are as defined in Appendix A. One-tailed significance is reported for hypothesized relationships (two-tailed otherwise).

Table 8: Determinants of Content - Numerical Terms

Results of OLS Model

Variable	Pred. Sign	Estimate	Std Error	t Value	Pr > t
Intercept		0.0307	0.0116	2.65	0.008
<i>ASSURED</i>	+	0.0054	0.0031	1.74	0.042
<i>HIST_NUM_REPORTS</i>		0.0017	0.0005	3.30	0.001
<i>GRI</i>		-0.0007	0.0027	-0.25	0.802
<i>SIZE</i>		0.0020	0.0012	1.62	0.106
<i>CAPX</i>		0.0000	0.0000	0.34	0.736
<i>CETR</i>		-0.0056	0.0073	-0.76	0.449
<i>PRC_VOL</i>		0.0000	0.0002	-0.27	0.789
<i>MTB</i>		0.0000	0.0000	-0.18	0.856
<i>DTE</i>		-0.0002	0.0012	-0.20	0.845
<i>ROA</i>		0.0186	0.0223	0.83	0.406
<i>ENERGY</i>		0.0031	0.0062	0.50	0.620
<i>MATERIALS</i>		0.0165	0.0050	3.34	0.001
<i>INDUSTRIAL</i>		0.0025	0.0045	0.56	0.575
<i>CONS_STAP</i>		0.0016	0.0048	0.33	0.742
<i>HEALTHCARE</i>		0.0031	0.0047	0.65	0.518
<i>FINANCIAL</i>		-0.0059	0.0054	-1.08	0.279
<i>IT</i>		0.0054	0.0046	1.18	0.240
<i>TELECOM</i>		0.0040	0.0151	0.27	0.791
<i>UTILITIES</i>		0.0103	0.0052	1.97	0.049
n (reports)		475			
Adj R ²		0.0767			

This table presents the results of an OLS regression of Equation (7). The dependent variable, *NUMERICAL*, is defined as the number of numerical terms in the report scaled by the total number of words in the report. Other variables are as defined in Appendix A. One-tailed significance is reported for hypothesized relationships (two-tailed otherwise).

Table 9: Determinants of Assurance
Results of Probit Model

Variable	Pred. Sign	Estimate	MFX	Std. Error	z	Pr> z
Intercept		-2.143		0.749	-2.86	0.004
<i>HIST_NUM_REPORTS</i>	+	0.061	0.015	0.030	2.08	0.019
<i>GRI</i>	+	0.514	0.110	0.197	2.61	0.005
<i>CAPX</i>	+	0.000	0.000	0.000	1.90	0.029
<i>CETR</i>	?	1.052	0.256	0.427	2.46	0.014
<i>SIZE</i>		0.007	0.002	0.079	0.09	0.925
<i>ROA</i>		1.501	0.366	1.561	0.96	0.336
<i>DTE</i>		0.126	0.031	0.067	1.88	0.061
<i>MTB</i>		0.004	0.001	0.004	0.96	0.339
<i>PRC_VOL</i>		-0.004	-0.001	0.011	-0.37	0.711
<i>ENERGY</i>		-0.313	-0.066	0.426	-0.73	0.463
<i>MATERIALS</i>		0.384	0.108	0.289	1.33	0.184
<i>INDUSTRIAL</i>		0.054	0.013	0.282	0.19	0.847
<i>CONS_STAP</i>		-0.110	-0.026	0.296	-0.37	0.710
<i>HEALTHCARE</i>		-0.121	-0.028	0.312	-0.39	0.698
<i>FINANCIAL</i>		-0.067	-0.016	0.357	-0.19	0.851
<i>IT</i>		0.169	0.044	0.281	0.60	0.548
<i>TELECOM</i>		-0.411	-0.081	0.921	-0.45	0.656
<i>UTILITIES</i>		-0.148	-0.034	0.356	-0.42	0.677
n (firm-years)		475				
Pseudo R ²		0.1103				

This table presents the results of a probit regression of Equation (5). The dependent variable, *ASSURED*, is an indicator variable equal to one if a firm receives independent assurance of its CSR report that year and zero otherwise. One-tailed significance is reported for hypothesized relationships (two-tailed otherwise).