CORPORATE SOCIAL RESPONSIBILITY DISCLOSURE LEVEL, EXTERNAL ASSURANCE AND COST OF EQUITY CAPITAL

by

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Corporate Social Responsibility Disclosure Level, External Assurance and Cost of Equity Capital

Thesis directed by Associate Professors Yonca Ertimur and Alan Jagolinzer

This study contributes to the accounting literature on corporate social responsibility (CSR) reporting by analyzing whether CSR report characteristics, including CSR disclosure level and the external assurance of CSR disclosures, explain variation in cost of equity capital for CSR disclosers. I find that among firms with good CSR performance, those reporting at a high CSR disclosure level have lower cost of equity capital than those reporting at a low CSR disclosure level. Among firms with poor CSR performance, I find the opposite: firms reporting at a high CSR disclosure level have higher cost of equity capital than firms reporting at a low CSR disclosure level. This result is consistent with investors imposing a penalty on firms for "greenwashing". I find that only firms with poor CSR performance benefit from the external assurance of CSR disclosures. Specifically, poor CSR performers that obtain external assurance of their CSR disclosures have lower cost of equity capital than those that do not. This result only holds for poor CSR performers that obtain external assurance of their entire CSR report as opposed to those that obtain external assurance of only specific CSR disclosures within their report. This result is consistent with investors requiring a high degree of credibility to distinguish poor CSR performers disclosing actual improvements in performance from "greenwashers".

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CHAPTER I

INTRODUCTION

Over the last 15 years, accounting studies have examined various aspects of corporate social responsibility (CSR) reporting and their associations with cost of equity capital. Since the emergence of this stream of literature in 2001,[1] CSR reporting has become increasingly common. According to KPMG's International Corporate Responsibility Reporting Survey, among the Fortune Global 250 (hereafter, the G250),[2] the number of firms reporting on CSR increased from 45% in 2002 to 93% in 2013 (KPMG 2002, 2013).

This increased incidence of CSR reporting has kept researchers interested in studying CSR disclosure. While the literature provides evidence that the act of issuing a CSR report results in reduced cost of equity capital (Dhaliwal, Li, Tsang and Yang 2011), few studies examine whether there are CSR report characteristics that result in variation in cost of equity capital among CSR disclosers. I complement those few studies by examining whether two characteristics of CSR reports explain cross-sectional variation in cost of equity capital among CSR disclosers. Specifically, I focus on CSR disclosure level and the external assurance of CSR disclosures.

I focus on my first variable of interest, CSR disclosure level, for three reasons. First, it is well-established in the voluntary financial disclosure setting that disclosure level is negatively associated with cost of equity capital (Botosan 1997). Given the increasing incidence of CSR disclosure, and the substantial proprietary, data collection and compilation costs involved, it is important to understand

[1] See Richardson and Welker (2001), which claims to be the "first empirical examination of social disclosure practices to explicitly examine the cost of equity capital."
[2] The Fortune Global 250 is comprised of the top 250 firms from the Fortune Global 500 ranking.

whether CSR disclosure is associated with a similar cost of capital benefit. It is not clear ex-ante whether the association will carry over to the CSR disclosure setting. Because CSR disclosures are less ex-post verifiable than financial disclosures, some firms may have the incentive and opportunity to disclose untruthfully, and report users might then place less reliance on CSR disclosures. If so, the negative association observed in the financial disclosure setting might not hold in the CSR disclosure setting.

Second, the International Integrated Reporting Council (IIRC) and the Sustainability Accounting Standards Board (SASB) are currently pushing for firms to engage in integrated reporting, which makes it even more important to understand the costs and benefits of CSR reporting. [3] While the IIRC and the SASB push to increase the level of CSR disclosure within mandatory SEC filings, SEC commissioner Gallagher has publicly spoken out against such groups, including the SASB specifically, noting that the SEC must "take exception to efforts by third parties that attempt to prescribe what should be in corporate filings." He continued, "with the exception of financial accounting…the Commission does not and should not delegate to outside, non-governmental bodies the responsibility for setting disclosure requirements," and "groups like SASB have no role in the establishment of mandated disclosure requirements" (Gallagher 2014).

Third, my measure of CSR disclosure level involves a unique attribute: firms' disclosure levels are self-declared. I measure CSR disclosure level for firms whose reports reference the Global Reporting Initiative (GRI) G3/G3.1 Reporting Guidelines.[4] Under these guidelines, firms declare a disclosure level based on published criteria. However, firms are afforded some leniency in declaring their CSR disclosure level and may declare the incorrect disclosure level intentionally or in error. This unique attribute creates an opportunity to examine whether a firm's self-declared disclosure level is informative to report users, a previously unexamined question.

[3] The IIRC is a coalition whose mission is to replace financial statements as we know them with an integrated report, which includes not only financial and operational data, but also CSR data; and the SASB is a group whose mission is to create industry-specific CSR standards upon which firms should report within mandatory SEC filings.

[4] The GRI is a non-profit organization that provides guidance to firms for preparing CSR reports. Its reporting guidelines are the most widely used among firms worldwide (KPMG 2013).

The second characteristic I study is the external assurance of CSR disclosures. I focus on external assurance for three reasons. First, it is a relatively new and increasingly common practice in the CSR disclosure setting, and firms are expending substantial resources to obtain external assurance. Among the G250, the number of firms opting to obtain external assurance of CSR disclosures increased from 29% in 2002 to 59% in 2013 (KPMG 2002, 2013). Despite the increasing number of firms obtaining external assurance of CSR disclosures, and the substantial costs involved, the consequences have not yet been studied in depth.[5] Second, there is little research about the effect of voluntary assurance in general. Studies in the private firm setting document that firms that voluntarily submit to financial statement audits experience lower cost of debt (Blackwell et al. 1998; Lennox and Pittman 2011) and reduced financing frictions (Kausar et al. 2014). However, in these settings, financial statements are required by creditors, so firms obtain voluntary assurance of mandatory disclosures. To my knowledge, the setting in which firms voluntarily obtain external assurance of voluntary disclosures, as is the case with CSR disclosures, has not yet been studied outside the studies mentioned in Footnote 5. Finally, it is not clear what voluntary assurance entails in the CSR disclosure setting, because with some exceptions, the practice is largely unregulated and non-standardized. In many cases, there are no auditing standards that must be followed, and even when auditing standards must be followed, the external assurance procedures and output can take a number of forms.[6] Whether there are consequences of external assurance in an unregulated and non-standardized setting is yet another unexamined question.

[5] Studies focusing on the consequences of external assurance of CSR disclosures include empirical work by Christensen (2013), who studies whether the external assurance of CSR reports reduces a firm's likelihood of committing CSR-related misconduct or the stock price hit after committing CSR-related misconduct; and experimental studies by Coram, Monroe and Woodliff (2009), Hodge, Subramaniam and Stewart (2009) and Pflugrath, Roebuck and Simnett (2011), who examine various report users' perceptions of credibility of CSR disclosures that are externally assured. Most recently, Cho, Michelon, Patten and Roberts (2014) study whether assurance of CSR disclosures affects firm value. I discuss further in the coming paragraphs and in Section II.

[6] If the assurance provider is a professional accountant, the assurance engagement must be conducted following the International Auditing and Assurance Standard Board's ISAE 3000. Other types of assurance providers are not required to follow professional auditing standards.

Using a sample of 804 CSR reports hand-collected from the GRI Sustainability Disclosure Database,[7] I first examine the relation between CSR disclosure level and cost of equity capital. I control for CSR performance and whether a firm provides voluntary financial disclosure, and control for self-selection concerns due to observable covariates using propensity score matching and a lead-lag design. The results show that among firms with good CSR performance, those reporting at a high CSR disclosure level have significantly lower cost of equity capital than those reporting at a low CSR disclosure level, and that an increase in disclosure level is associated with a subsequent reduction in cost of equity capital. Among firms with poor CSR performance, I find that those reporting at a high CSR disclosure level have significantly higher cost of equity capital than those reporting at a low CSR disclosure level. This result is consistent with investors imposing a penalty on poor CSR performers that "greenwash". The results for good CSR performers are consistent with results from parallel studies in the voluntary financial disclosure literature. The results for poor CSR performers, however, are counter to expectations and provide new insight into the consequences of disclosure level when disclosures lack ex-post verifiability.

Next, I shift my focus to the role of external assurance. Again, I control for CSR performance and whether a firm provides voluntary financial disclosure, and control for self-selection concerns due to observable covariates using propensity score matching and a lead-lag design. I find that only poor CSR performers benefit from the external assurance of CSR disclosures. Specifically, among firms with poor CSR performance, those that obtain external assurance of their CSR disclosures have lower cost of equity capital than those that do not. This result only holds for firms that obtain external assurance of their entire CSR report as opposed to those that obtain external assurance of only specific CSR disclosures within their report. These results are consistent with investors requiring a high degree of credibility to distinguish poor CSR performers disclosing actual improvements in performance from "greenwashers".

The portion of my study focusing on CSR disclosure level and cost of equity capital is related to Richardson and Welker (2001); Clarkson, Fang, Li and Richardson (2010); Plumlee, Brown, Hayes and

[7] See database.globalreporting.org

Marshall (2010); and Dhaliwal et al. (2011). Richardson and Welker (2001) is the first study to focus on the association between CSR disclosure level and cost of equity capital. My study differs from Richardson and Welker (2001) in several ways. A number of differences relate to the sample. First, Richardson and Welker's (2001) sample is comprised of Canadian firms from 1990 through 1992, a recessionary period in Canada. Richardson and Welker (2001) argue that the positive and significant association between CSR disclosure level and cost of equity capital they document may be specific to periods of economic downturn, and call for future research spanning a longer time period. Second, the 1990 through 1992 time period preceded the rapid increase of CSR reporting. During the early nineties, only a few "adventuresome" firms were producing environmental reports (Buhr 2007); and almost none were producing CSR reports (KPMG 1999). During the time period in my study, in contrast, the vast majority of firms produce CSR reports. In fact, KPMG's International Survey of Corporate Responsibility Reporting states that "the high rates of (CSR) reporting in all regions suggest it is now standard business practice worldwide" (KPMG 2013). If the nature or perceptions of CSR disclosure, or the types of firms choosing to engage in CSR disclosure, changed between the early nineties, when CSR reports were virtually unheard of, and the 2000s, when CSR reporting is almost standard business practice, the association between disclosure level and cost of equity capital may have changed as well. Third, Richardson and Welker (2001) focus on Canadian firms, while I focus on U.S. firms. As noted in Dhaliwal et al. (2011), U.S. firms are subject to stricter disclosure regulation and higher litigation risk, which may result in greater disclosure credibility. If CSR disclosures of U.S. firms are more credible than CSR disclosures of Canadian firms, the observed positive association between CSR disclosure level and cost of equity capital from Richardson and Welker (2001) may not hold for firms in the U.S.

Other differences relate to the research design. First, because CSR reports were so uncommon from 1990 through 1992, Richardson and Welker (2001) draw their CSR disclosure data from firms' annual reports. I gather my data from reports specifically focusing on CSR, which isolates voluntary CSR disclosures from mandatory annual report disclosures to provide a better measure of CSR disclosure

level. Second, Richardson and Welker (2001) measure CSR disclosure level using an assessment performed by Canadian management accountants and academics. They note that their CSR disclosure level ratings are not based on the judgments of experienced raters and that the ratings are not averaged over several researchers. The GRI G3/G3.1 Reporting Guidelines and the associated CSR disclosure level are widely accepted globally; were developed by diverse working groups comprised of sustainability experts, firm representatives, advocacy organizations and financial market participants; and some version of the Reporting Guidelines has been in place since 2000. Because the GRI G3/G3.1 Reporting Guidelines were prepared by experts to measure disclosure level, and because disclosure level according to the guidelines is relatively objective, disclosure level as defined by the GRI G3/G3.1 Reporting Guidelines may be a superior measure to the assessment utilized in Richardson and Welker (2001). Finally, I improve upon the research design in Richardson and Welker (2001) by controlling for CSR performance. Richardson and Welker (2001) argue that a reporting bias could drive their finding of a positive association between CSR disclosure level and cost of equity capital if firms with poor CSR performance use CSR disclosures as a means of self-promotion. Controlling for CSR performance in my study reduces this potential bias.

My study also differs from Clarkson et al. (2010) and Plumlee et al. (2010), who examine the association between environmental disclosure quality and cost of equity capital. These studies focus specifically on environmental disclosures as opposed to the broader set of CSR disclosures. The vast majority of non-financial reports issued by firms are now labeled CSR or sustainability reports, and contain disclosures on environmental, social and economic issues. The shift took place sometime between 2002 and 2005. In 2002, over 70% of the non-financial reports published by the G250 were classified as Environmental, Health and Safety reports. By 2005, over 70% were classified as CSR or sustainability reports (KPMG 2005). My study focuses on the broader CSR disclosures, reflecting this shift in report content. In addition, the variable of interest in Clarkson et al. (2010) and Plumlee et al. (2010) is environmental disclosure quality, which they calculate using versions of a researcher-generated

index, while the focus of my study is disclosure level or quantity. To the extent that report users value quantity, or level, of disclosures differently than they value quality of the disclosure presentation, the results of Clarkson et al. (2010) and Plumlee et al. (2010) may differ from those of my study. Finally, I rely on a comprehensive sample of firms across all industries and from the 2006-2012 sample period when CSR reporting was more prevalent, resulting in a larger sample and more generalizable results.[8]

Finally, my study differs from Dhaliwal et al. (2011), who find that firms with high ex-ante cost of equity capital are more likely to become first-time CSR disclosers, and that first-time CSR disclosers experience a reduction in cost of equity capital following report issuance. Their study focuses on determinants and consequences of issuing a CSR report, but does not examine report characteristics which contribute to cross-sectional variation in cost of equity capital among disclosers.

The portion of my study focusing on external assurance of CSR disclosures and cost of equity capital is related to a recent study by Cho et al. (2014). Using a sample of 216 U.S. firms in 2010, they fail to find that the external assurance of CSR disclosures is associated with firm value as measured by the Ohlson (1995) market valuation model. My study differs from Cho et al. (2014) in several ways. First, my sample is substantially larger and covers several years, which results in more powerful tests. Second, their model fails to account for selection bias and to include several relevant controls which potentially explain firm value. Finally, Cho et al.'s (2014) specific variable of interest is market value of the firm as opposed to cost of equity capital.

In summary, this study contributes to the literature by being the first since the rapid increase in CSR reporting to examine the association between CSR disclosure level and cost of equity capital, and by being the first to introduce external assurance as a variable of interest in explaining cost of equity capital for CSR disclosers. In a broader context, it contributes to the voluntary disclosure literature by exploring the consequences of disclosure level when disclosures are not necessarily ex-post verifiable or truthful;

[8] Clarkson et al. (2010) and Plumlee et al. (2010), both include five industries in their samples. Clarkson et al.'s (2010) sample covers years 2003 and 2006, and Plumlee et al.'s (2010) sample covers years 2000 through 2005.

and it contributes to the voluntary assurance literature by examining consequences of voluntary assurance of voluntary disclosures, particularly in an unregulated and non-standardized setting. My results are important to current and future CSR disclosers in considering the disclosure level and assurance scope of their CSR reports; and to proponents of increasing CSR disclosures within SEC filings like the IIRC and SASB.

The remainder of this paper is organized as follows. Section II outlines prior related research and develops the hypotheses. Section III describes the data and methodology. Section IV presents empirical evidence on the relations between CSR disclosure level, external assurance and cost of equity capital. Section V concludes.

CHAPTER II

RELATED RESEARCH AND HYPOTHESIS DEVELOPMENT

Disclosure Level

Voluntary disclosure theory supports a negative association between disclosure level and cost of equity capital, and suggests two mechanisms through which the negative association is achieved (Botosan 1997, 2006). First, greater disclosure level may reduce cost of equity capital by reducing investors' estimation risk or uncertainty about the distribution of a security's returns (Klein and Bawa 1976; Barry and Brown 1985; Coles and Loewenstein 1988; Handa and Linn 1993; Coles et al. 1995; Clarkson et al. 1996). Second, greater disclosure level may reduce cost of equity capital by reducing transaction costs, which are often linked to information asymmetry or market illiquidity (Amihud and Mendelson 1986; Diamond and Verrecchia 1991; Verrecchia 2001).

Most of the prior empirical studies on the association between disclosure level and cost of equity capital focus on financial disclosure and support a negative association. Studies showing that financial disclosure level is negatively associated with cost of equity capital include Botosan (1997), Leuz and Verrecchia (2000), Richardson and Welker (2001) and Botosan and Plumlee (2002).

There are currently two empirical studies that examine the association between disclosure level and cost of equity capital in the CSR disclosure setting, and they provide somewhat conflicting, although not directly comparable, results. Dhaliwal et al. (2011) show that the decision to engage in CSR reporting is associated with lower cost of equity capital by finding that first-time CSR report issuers experience a

reduction in cost of equity capital following the report's issuance. While the study supports a negative association between the act of disclosing upon CSR and cost of equity capital, it does not examine variation in disclosure level. In the first and only study to examine CSR disclosure level and cost of equity capital, Richardson and Welker (2001) find an unexpected positive association for a sample of Canadian firms from 1990 through 1992. However, as discussed previously, their limited sample and research design choices could drive their unexpected results.

Based on voluntary disclosure theory, parallels to empirical financial literature, and the results of Dhaliwal et al. (2011), and because Richardson and Welker (2001) express concerns about the generalizability of their results, I expect to find a negative association between CSR disclosure level and cost of equity capital, and I formally state my first hypothesis as follows:

H1: CSR disclosure level is negatively associated with cost of equity capital.

Despite the abundant theoretical and empirical financial evidence supporting a negative association, there are reasons to suspect that the negative association may not hold in the CSR disclosure setting. First, the nature of CSR disclosure challenges some of the underlying assumptions of theoretical voluntary disclosure models. Specifically, in most theoretical models, disclosures are ex-post verifiable. That is, the receiver of the disclosure can look back after acting upon the disclosure and determine whether the disclosure was truthful. This ex-post verifiability provides incentives for managers to disclose truthfully and therefore increases investors' willingness to rely upon the disclosures. In the CSR disclosure setting, ex-post verifiability is not entirely clear. CSR report users are generally unable to immediately look back and confirm whether a firm investigated its foreign suppliers for child labor or recycled 14% of its withdrawn water, for example. Also, in most theoretical models, disclosures must be

made truthfully. In the CSR disclosure setting, since disclosures are not always ex-post verifiable, firms may not have incentives to disclose truthfully.[9]

When disclosures are ex-post verifiable and must be made truthfully, Dye (1985) shows that firms voluntarily disclose to distinguish themselves from worse firms. Accordingly, firms with good news (most likely firms with good or improving CSR performance) would voluntarily disclose at a high level to distinguish themselves from firms with bad news, and would experience reduced cost of equity capital. The challenges to the underlying assumptions of voluntary disclosure theory may create opportunities and incentives for firms that might not otherwise disclose (firms with bad news (most likely firms with poor or deteriorating CSR performance)) to also disclose at a high level. Legitimacy theory suggests that firms whose social legitimacy is threatened (i.e. firms with poor or deteriorating CSR performance) may disclose at a high level to (1) inform report users of actual changes (improvements) in performance, or (2) attempt to change perceptions of poor performance or deflect attention from areas of concern by disclosing positive accomplishments (Clarkson et al. 2008; Gray et al. 1995; Lindblom 1994).[10] The relaxation of the assumptions that disclosures must be ex-post verifiable and truthful creates the opportunity for firms with poor or deteriorating performance to disclose untruthfully (i.e. to produce a CSR report that does not convey the truth about poor performance). Going forward, poor CSR performers disclosing at a high level for reason (2) are referred to as "greenwashers". If CSR report users are aware that both good performers and greenwashers have incentives to disclose, possibly untruthfully, at a high level, the theoretical negative association between disclosure level and cost of equity capital may

[9] Although litigation risk provides an incentive to disclose truthfully, it is unclear whether CSR disclosers are likely targets of litigation. In 2011, one third of the G250 issued restatements of their CSR reports, and 35% of those restatements were due to errors or omissions (KPMG 2011, Potter and Soderstrom 2014). Despite the high rate of errors or omissions within CSR reports, there have been surprisingly few cases where firms have been sued over misrepresentations within their CSR reports. The most notable exception is Nike, who was sued by a consumer activist for misrepresenting information about unsafe working conditions in Southeast Asia. The case was settled and never heard by the U.S. Supreme Court (Nike, Inc. v. Mark Kasky 2003). Based on the high incidence of errors and omissions and the low incidence of lawsuits, firms may conclude that litigation risk resulting from untruthful CSR disclosures is sufficiently low.

[10] Appendix A presents examples of disclosures made by poor CSR performers in my sample that may have disclosed at a high level for reasons (1) or (2).

not be observed in the CSR setting, particularly if CSR report users cannot distinguish between firms that are likely to disclose truthfully and those that are not.

If CSR report users are able to distinguish good CSR performers from poor CSR performers, and therefore infer which firms are more or less likely to disclose truthfully, I expect the hypothesized negative association between CSR disclosure level and cost of equity capital will hold for firms that have incentives to disclose truthfully (i.e. good CSR performers).[11,12]

For firms that have incentives to disclose untruthfully (i.e. greenwashers), the expected outcome is less clear. Cheap talk theory suggests that unverifiable (and therefore potentially untruthful) disclosures made in a single round of interaction are not valued (Crawford and Sobel 1982). If this theory applies to CSR disclosures, greenwash may not be valued, in which case there would be no association between CSR disclosure level and cost of equity capital for poor CSR performers. In a model of a repeated cheap talk game, which may be more relevant to CSR disclosures as firms typically issue CSR reports annually or biannually, Sobel (1985) shows that when a discloser can either disclose truthfully or manipulate his information to maximize his payoff, if the receiver of the disclosure ever observes that a disclosure was untruthful, the discloser suffers reputation damage for the remainder of the game. As it relates to CSR disclosure, if CSR report users have ever observed an instance where CSR disclosures do not accurately portray a firm's true CSR performance (i.e. confirmed greenwashing), which is not unlikely given the abundance of third party CSR performance rating data, investors may impose a reputational penalty on the firm, in which case CSR disclosure level could be positively associated with

[11] Report users have access to the reports of many third party CSR rating agencies, which may increase their ability to distinguish between good and poor CSR performers. However, Dhaliwal et al. (2011) note that third party CSR ratings alone are not likely to provide enough information for report users to assess a firm's overall CSR performance. Disclosures are incrementally informative over ratings because they may provide necessary information to assimilate CSR ratings; they allow good CSR performers to demonstrate their confidence in their CSR performance; and they allow poor CSR performers to explain their performance.

[12] Poor CSR performers disclosing at high levels for reason (1) may also have incentives to disclose truthfully since they would be disclosing good news about actual improvements in performance. However, if CSR report users are unable to distinguish between poor CSR performers disclosing at high levels for reason (1) versus greenwashers, they will not be able to infer which poor CSR performers have incentives to disclose truthfully. They will only be able to infer that good CSR performers have incentives to disclose truthfully.

cost of equity capital. While it is not certain which cheap talk model most closely relates to CSR disclosure, the potential for greenwash introduces the possibility that the negative association between disclosure level and cost of equity capital predicted from voluntary disclosure theory may not hold in the CSR disclosure setting.

Another reason the hypothesized negative association may not hold in my study results from my variable of interest. In empirical studies examining voluntary disclosure level in the financial setting (Botosan 1997; Leuz and Verrecchia 2000; Richardson and Welker 2001; and Botosan and Plumlee 2002), the variable of interest is either a researcher-generated measure of disclosure level or a measure of disclosure level assigned by some other third party. In my study, the variable of interest is a firm's own self-declared disclosure level. Though the GRI G3/G3.1 Reporting Guidelines provide published application level criteria that firms use in determining their disclosure level, firms are afforded some leniency. For example, the guidelines permit firms to omit disclosures without a penalty in self-declared disclosure level as long as a reason for the omission is provided. So, firms may omit disclosures on several performance indicators claiming those disclosures are not material, not applicable, or proprietary in nature and still self-declare a disclosure level of A. [13,14] Further, firms' self-declared disclosure levels are not required to be verified by a third party (although some firms opt to have their level checked by the GRI), so firms could declare a certain disclosure level as greenwash or in error.[15] If the leniency afforded to firms in declaring their CSR disclosure level, or the potential for firms to declare a certain disclosure level as greenwash or in error, render the self-declared CSR disclosure level measure less meaningful to report users, the negative association between disclosure level and cost of equity capital expected from

[13] For example, a firm could disclose upon five CSR performance indicators and explain that it is unable to disclose upon five others due to the data being proprietary in nature, and still consider itself to have disclosed upon 10 CSR performance indicators.

[14] In fact, in the GRI's own 2010/2011 CSR report, 47 disclosures were omitted due to being "not material" and six disclosures were omitted due to being "not available." Even with the omission of 53 disclosures, the GRI's 2010/2011 report was self-declared as level A (Cohen 2012).

[15] Appendix A presents an example where a firm may have self-declared its CSR disclosure level as greenwash or in error.

voluntary disclosure theory and documented in empirical financial disclosure literature may not hold in my study.

In summary, based on voluntary disclosure theory and empirical financial literature, I hypothesize that CSR disclosure level will be negatively associated with cost of equity capital. However, challenges to underlying assumptions of voluntary disclosure theory and the leniency afforded to firms in declaring their CSR disclosure level provide tension and support the possibility that the negative association may not hold in my study.

External Assurance

Theoretical research suggests that the choice to voluntarily submit to an audit conveys information about a firm's risk (Melumad and Thoman 1990). According to Melumad and Thoman's (1990) theory, when audits are voluntary, the decision to hire an auditor signals a firm's low-risk type, while avoiding an audit signals a high-risk type. Based on this theory, and assuming a firm's CSR performance is indicative of its risk type, good CSR performers would be more likely to obtain external assurance of their CSR disclosures as a signal of their low-risk type. It is also possible that poor CSR performers that disclose at a high level to inform report users of actual changes (improvements) in performance may seek external assurance to signal that their risk type is lower than the risk type of greenwashers. If signaling a firm's low-risk type reduces investors' estimation risk and/or information asymmetry, it would also be expected to reduce cost of equity capital – specifically for good CSR performers and poor CSR performers who make truthful disclosures about improvements in CSR performance.

Empirical literature on the consequences of external assurance is limited because in the U.S., external assurance is generally mandatory, making it difficult to construct a reference group of unassured firms for use in assessing the consequences of assurance. Therefore, empirical research in this area is generally limited to the private firm setting where firms may voluntarily submit to a financial statement

audit, and results are consistent with the aforementioned theory. Blackwell et al. (1998), Lennox and Pittman (2011), and Kim et al. (2011) all find that private firms that voluntarily opt to obtain external assurance of their financial statements experience lower cost of debt, and Kausar et al. (2014) find that private firms that voluntary opt to obtain external assurance of their financial statements experience reduced financing frictions.

Based on theory and parallels to the private debt market, I expect that firms that opt to obtain external assurance of their CSR disclosures will have lower cost of equity capital than firms that do not, and I formally state my second hypothesis as follows:

> **H2:** Firms that obtain external assurance of their CSR disclosures have lower cost of equity capital than firms that do not obtain external assurance of their CSR disclosures.

There are reasons, however, that the negative association expected based on empirical studies in the voluntary financial assurance setting may not hold in the CSR assurance setting. First, in the aforementioned studies on voluntary assurance in the private debt market setting, financial disclosures (i.e. the financial statements) are mandated by the bank as a requirement to obtain a loan, and firms choose whether to have those financial disclosures audited. So the setting is one where firms voluntarily obtain external assurance of mandatory disclosures. I am not aware of any studies examining cost of capital implications from voluntary assurance of voluntary disclosures, as is the case with CSR disclosures. In such a setting, because both disclosures and assurance are voluntary, it may be the case that only forthcoming and transparent firms that already have low cost of equity capital opt to disclose and obtain external assurance. In this hypothetical setting, after controlling for self-selection, a negative association might not exist. Therefore, in the CSR disclosure setting, whether a negative association between external assurance and cost of equity capital exists is an open question.

Second, unlike external assurance procedures and output for financial statements, which are highly regulated and result in a standard audit opinion, external assurance procedures and output for CSR

disclosures vary from engagement to engagement depending on the type of assurance provider, the standards followed by the assurance provider (if any), the level of assurance provided and the scope of the engagement. According to the GRI G3/G3.1 Reporting Guidelines, assurance providers for CSR disclosures should be competent individuals or groups external to the organization, and they may or may not elect to follow professional standards for assurance. The external assurance process should result in published conclusions on the quality of the report (GRI 2006). These guidelines leave substantial room for interpretation, resulting in a wide range of external assurance procedures and output for the firms in my sample. Specifically, types of assurance providers range from Big 4 accounting firms to boutique CSR consulting firms to groups of MBA students. While professional accountants are required to follow the International Auditing and Assurance Standard Board's ISAE 3000: Assurance Engagements Other Than Audits or Reviews of Historical Financial Information, other types of assurance providers are not required to follow any standards. Many providers opt to follow AccountAbility's AA1000AS standard, some opt to follow other lesser known standards, and some follow no standards at all. Among assurance providers who follow ISAE 3000, the level of assurance provided may be limited or reasonable. Among assurance providers who follow AA1000AS, the type of assurance provided may be Type 1 (only assures that the report was prepared according to the principles of Inclusivity, Materiality and Responsiveness) or Type 2 (which also evaluates the reliability of specified data); and the level of assurance provided may be high or moderate. Finally, firms may specify their desired assurance scope. Some firms opt to obtain external assurance only of greenhouse gas emissions; some of specified sections only; and others opt to obtain external assurance of their entire CSR report. Given the broad range of external assurance options for CSR disclosures, and that some combinations of assurance options may be perceived as more or less credible than other combinations of assurance options, it would not be surprising if investors fail to associate external assurance of CSR disclosures as a whole with reduced information risk or information asymmetry. If that is the case, the observed negative association between external assurance and cost of equity capital in the voluntary financial assurance setting may not hold in the voluntary CSR assurance setting.

Finally, several recent studies introduce the possibility that CSR assurance lacks credibility. On one hand, experimental studies by Hodge et al. (2009), Coram et al. (2009) and Pflugrath et al. (2011) show that CSR report users, financial report users and financial analysts, respectively, perceive CSR reports to be more credible if they have been externally assured. Anecdotal and empirical evidence, however, suggest that the new form of assurance service lacks credibility. Through interviews with Big 4 CSR assurance practitioners, O'Dwyer (2011) finds that traditional financial statement audit procedures do not translate well to CSR reports. He also notes that because assurance procedures tend to be developed through years of trial and error, CSR assurance may be too new to have developed effective procedures. Christensen (2013) suggests that because CSR assurance engagements are not subject to peer review or regulator inspection, the reputation risk for an assurance provider that performs a low quality assurance engagement is low. Cho et al. (2014) find that external assurance of CSR disclosures is not associated with increased firm value, which implies the practice may lack credibility. If CSR assurance providers perform low quality audits, firms that obtain external assurance of their CSR disclosures may not have lower cost of equity capital than firms that do not.

In summary, based on theory and parallels to the private debt market, I hypothesize that the choice to obtain external assurance of CSR disclosures will be associated with lower cost of equity capital. However, the unexamined setting of voluntary assurance of voluntary disclosures, the variation in CSR assurance procedures and output, and the questionable credibility of CSR assurance provide tension and support the possibility that a negative association may not hold.

CHAPTER III

DATA AND RESEARCH METHODOLOGY

Description of Data

To test my hypotheses, I collect CSR report data from the GRI's Sustainability Disclosure Database. The GRI is a non-profit organization that provides guidance to firms for preparing CSR reports, and its reporting guidelines are the most widely used among firms worldwide (KPMG 2013). The Sustainability Disclosure Database is a repository of CSR reports prepared under the GRI's reporting guidelines.

Under the third generation of reporting guidelines, which were issued in 2006 and remained in place through 2014, firms declare a CSR disclosure level of A, B, C or Undeclared based on published criteria. To declare a disclosure level of C, a firm must provide a subset of the GRI's standard company profile and sustainability strategy disclosures and must report on at least ten performance indicators (Table 1 lists a sample of performance indicators from each sustainability sub-area). To declare a disclosure level of B, a firm must meet all of the requirements of level C; provide additional company profile and sustainability strategy disclosures; report on management's approach to addressing sustainability topics; and report on at least twenty performance indicators. To declare a disclosure level of A, a firm must meet all of the requirements of levels C and B, and report on all of the core performance

TABLE 1

Sample of Performance Indicators

Examples of Economic Performance Indicators
Financial implications and other risks and opportunities for the organization's activities due to climate change.
Coverage of the organization's defined benefit plan obligations.
Procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation.
Examples of Environmental Performance Indicators
Percentage of materials used that are recycled input materials.
Total water withdrawal by source.
Total number and volume of significant spills.
Examples of Social Performance Indicators
Return to work and retention rates after parental leave, by gender.
Operations and significant suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor.
Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.

This table provides examples of core performance indicators for each sustainability sub-area from the Global Reporting Initiave's G3.1 Reporting Guidelines (GRI 2006). There are a total of 7 core performance indicators in the Economic sub-area, 17 in the Environmental sub-area and 31 in the Social sub-area. There are also additional performance indicators classified as non-core in each sub-area upon which a firm may choose to report.

indicators, or provide a reason for omission.[16] If a firm reports on some of the standard disclosures, but does not meet the disclosure level of C, its disclosure level is Undeclared. In addition, a firm may add a "+" to its disclosure level if any part of its CSR report is externally assured. Figure 1 illustrates the disclosure level criteria, and Appendix B further describes the disclosures required for each level.

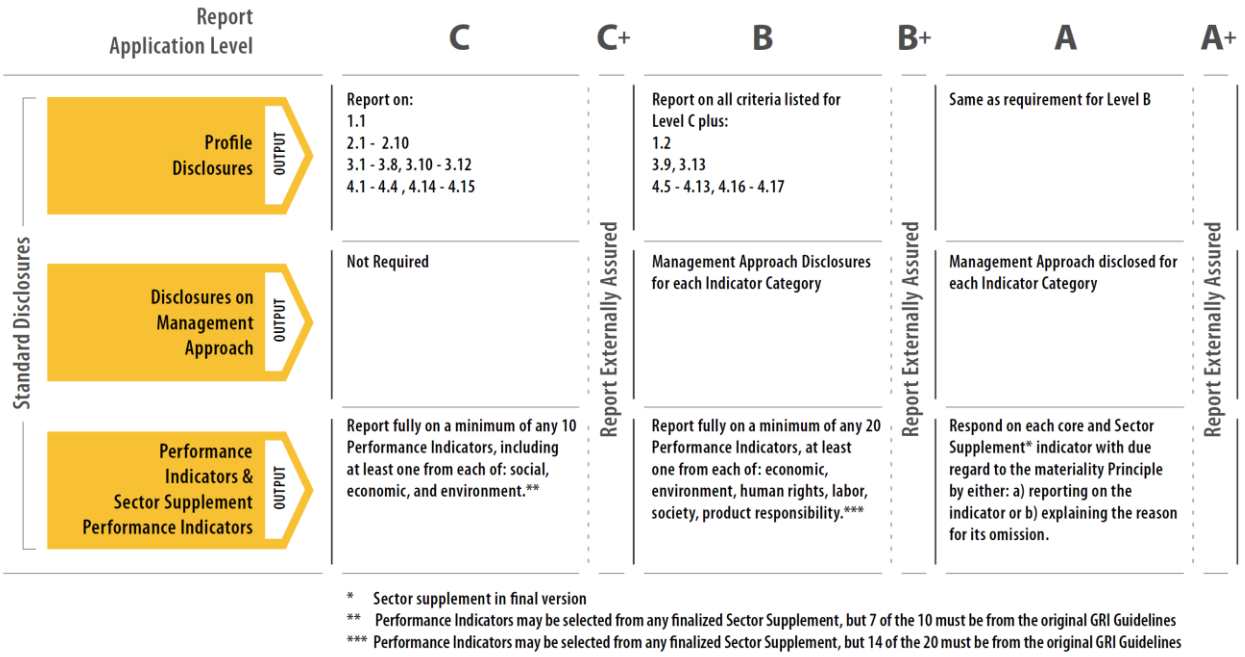
The GRI's Sustainability Disclosure Database includes reports prepared with reference to GRI guidelines from organizations worldwide, including public firms, private firms, government institutions, subsidiaries and municipalities. I filter the database to include only reports of U.S. firms prepared under the G3 or G3.1 guidelines. I only include U.S. reports because the KLD STATS database, from which I collect CSR performance data, only covers U.S. firms. I only use reports prepared under the G3 or G3.1 guidelines because those are the only versions which include a measure of disclosure level. Filtering the database to include U.S. G3/G3.1 reports generates a population of 1170 reports. During hand-collection of assurance scope data, I located an additional 121 reports. After dropping reports of non-public firms, I begin with a full sample of 957 G3/G3.1 reports from public U.S. firms. I lose 77 reports due to being unable to merge their identifying data with one of the control variable databases and 76 reports due to missing control variable data. As outlined in Table 2, my final sample is comprised of 804 reports from 247 firms.

Panel A of Table 3 details the disclosure level and assurance scope of the 804 reports in my sample. The most common disclosure level is B with 306 reports (38%); followed by Undeclared with 221 reports (27%); C with 165 reports (21%) and A with 112 reports (14%). 178 of the reports are externally assured (22%). Assurance is most common among A-level reports (38%) and is less common for B-level (28%), C-level (16%) and Undeclared reports (10%). Among assured A-level reports, the most common assurance scope is the entire report. Among all other assured reports, the most common assurance scope is specific sections only.

[16] There are a total of 7 core performance indicators in the Economic sub-area, 17 in the Environmental sub-area and 31 in the Social sub-area. There are also additional performance indicators classified as non-core in each sub-area upon which a firm may choose to report.

FIGURE 1

GRI Application Level Criteria



This figure was copied from the Global Reporting Initiave's G3.1 Reporting Guidelines (GRI 2006) and lists the requirements for each disclosure level. Appendix B briefly describes the nature of each group of disclosures.

TABLE 2

Sample

GRI 3.0/3.1 U.S. reports from GRI Disclosure Database	1170
Additional reports found during hand collection	121
Initial sample of U.S. GRI 3.0/3.1 reports	1291
Private firms/municipalities/subsidiaries etc.	(334)
Sample of public U.S. GRI 3.0/3.1 reports	957
Unmerged w/ Compustat, KLD, CRSP or IBES Databases	(77)
Missing control variables	(76)
Final sample - number of reports	804
Final sample - number of firms	247

This table presents the derivation of my final sample. I began with the population of GRI G3/G3.1 reports from U.S. firms collected from the GRI Sustainability Disclosure Database. I located additional reports during hand collection of assurance scope data; dropped reports from non-public firms; dropped reports for which I was unable to merge identifying data with Compustat, KLD, CRSP and/or IBES; and dropped reports for which control variables were missing. My final sample is 804 reports from 247 firms.

TABLE 3

Report Distribution

Panel A: Entire Sample

					Assurance Scope		
CSR Disclosure Level	**Total**		***ASSURANCE*=1**	***ASSURANCE*=0**	***GHG_ ONLY*=1**	***SPECIFIC_ SECTIONS*=1**	***ENTIRE_ REPORT*=1**
A	112	14%	43	69	13	8	22
B	306	38%	87	219	16	60	11
C	165	21%	27	138	7	15	5
UNDECLARED	221	27%	21	200	1	18	2
	804	100%	178	626	37	101	40
			22%	78%			

Panel B: Entire Sample Partitioned by CSR Performance

***GOOD_CSR_PERF*=1**					**Assurance Scope**		
CSR Disclosure Level	**Total**		***ASSURANCE*=1**	***ASSURANCE*=0**	***GHG_ ONLY*=1**	***SPECIFIC_ SECTIONS*=1**	***ENTIRE_ REPORT*=1**
A	106	14%	42	64	12	8	22
B	278	38%	83	195	14	59	10
C	146	20%	24	122	6	14	4
UNDECLARED	206	28%	21	185	1	18	2
	736	100%	170	566	33	99	38
			23%	77%			

(continued on next page)

CSR Disclosure Level	**Total**		***ASSURANCE*=1**	***ASSURANCE*=0**	***GHG_ ONLY*=1**	***SPECIFIC_ SECTIONS*=1**	***ENTIRE_ REPORT*=1**
A	6	9%	1	5	1	0	0
B	28	41%	4	24	2	1	1
C	19	28%	3	16	1	1	1
UNDECLARED	15	22%	0	15	0	0	0
	68	100%	8	60	4	2	2
			12%	88%			

This table presents the distribution of my sample based on disclosure level and assurance scope for the entire sample (Panel A), and partitioned on whether a firm is a good CSR performer (Panel B). I classify a firm as a good CSR performer if its CSR ratio ((CSR strengths – CSR concerns) / (CSR strengths + CSR concerns)) is greater than or equal to the industry-year median CSR ratio, and as a poor CSR performer otherwise.

I perform some supplemental tests based on a firm's CSR performance. I measure CSR performance using the following ratio: (CSR strengths – CSR concerns) / (CSR strengths + CSR concerns), where CSR strengths and concerns are the total number of strengths and concerns from the KLD STATS database. The database rates CSR performance for the largest 3,000 U.S. firms along the dimensions of Community, Corporate Governance, Diversity, Employee Relations, Environment, Human Rights and Product. To be classified as a good CSR performer, a firm's CSR performance ratio must be greater than or equal to the industry-year median CSR performance ratio. Otherwise, a firm is classified as a poor CSR performer.[17]

In Panel B of Table 3, I partition my sample by CSR performance and present the disclosure level and assurance scope distributions for firms that are good CSR performers and poor CSR performers. It appears that good CSR performers are more likely to prepare CSR reports under the GRI guidelines than poor CSR performers, as the vast majority (92%) of the firms in my sample are good CSR performers. For both good and poor CSR performers, the most common disclosure level is B and the least common disclosure level is A. Poor CSR performers appear to be less likely to obtain external assurance as 140 (23%) of the reports prepared by good CSR performers are externally assured, compared to only 8 (12%) of the reports prepared by poor CSR performers.

Table 4 presents the industry distribution of the report issuers based on industry classifications from Barth et al. (1998). Utilities and Computers are the most highly represented industries, each representing about 13% of the sample. Other and Agriculture are the least represented, each comprising 1% or less of the sample. Table 4 also presents the industry distribution of the Compustat population for

[17] I calculate industry-year median CSR performance ratios from the entire KLD database population as opposed to only within my sample. This results in an unbalanced sample where far fewer firms are classified as poor CSR performers (68) than good CSR performers (736). This unbalanced sample hints at the presence of a selection bias where good CSR performers are more likely to disclose upon CSR via a GRI report. Also, good CSR performers are more likely to disclose at a high level and obtain external assurance than poor CSR performers. Despite the resulting unbalanced sample, I chose to measure CSR performance relative to the KLD population as opposed to within sample in order to preserve the true variation in performance. I control for self-selection bias due to observable covariates using propensity score matching and also employ a lead-lag design, both of which I discuss in the Research Methodology section. See the Limitations of Inferences section for caveats on interpreting results based on the small sample of poor CSR performers.

TABLE 4

Industry Distribution

Industry	n	%	Compustat Population
Utilities	102	12.69%	3.60%
Computers	102	12.69%	10.12%
Durable Manufacturers	94	11.69%	12.77%
Chemicals	72	8.96%	1.74%
Financial Institutions	62	7.71%	11.70%
Food	61	7.59%	1.62%
Pharmaceuticals	58	7.21%	5.57%
Retail	52	6.47%	5.74%
Textiles, Printing and Publishing	47	5.85%	2.37%
Extractive Industries	38	4.73%	5.55%
Transportation	34	4.23%	4.62%
Mining and Construction	34	4.23%	7.44%
Services	22	2.74%	5.72%
Insurance and Real Estate	15	1.87%	19.98%
Other	7	0.87%	1.13%
Agricultural Crop Production	4	0.50%	0.33%

This table presents the distribution of my sample by industry, where industry classifications are based on Barth et al. (1998). The table also presents the industry distribution of the Compustat population for reference in determining differences between the report issuers in my sample and the overall population of firms.

comparison. Compared to the Compustat population, Utilities, Chemicals and Food are the most overrepresented industries in my sample, while Insurance and Real Estate is the most underrepresented.

Research Methodology – Tests of CSR Disclosure Level

To test H1, I examine the association between CSR disclosure level and cost of equity capital using the following ordinary least squares regression:

$$\begin{aligned} COSTOFCAP_{i,t} = {} & \beta_0 + \beta_1 A_{i,t} + \beta_2 B_{i,t} + \beta_3 C_{i,t} + \beta_4 CSR\_STRENGTHS_{i,t} + \beta_5 CSR\_CONCERNS_{i,t} \\ & + \beta_6 CIG_{i,t} + \beta_7 SIZE_{i,t} + \beta_8 MTB_{i,t} + \beta_9 BETA_{i,t} + \beta_{10} LEVERAGE_{i,t} \\ & + \beta_{11} LT\_GROWTH_{i,t} + \beta_{12} LN\_DISPERSION_{i,t} + \Sigma INDUSTRY_{i,t} + \Sigma YEAR_{i,t} + \varepsilon_{i,t}, \end{aligned} \quad (1)$$

where the variables of interest, $A_{i,t}$, $B_{i,t}$, and $C_{i,t}$, are indicator variables equal to 1 if firm *i* self-declares disclosure level A, B, or C, respectively, in year *t*, and 0 otherwise. The reference group is the set of reports prepared at the Undeclared disclosure level.

I estimate the dependent variable, *COSTOFCAP*, using the Easton's (2004) price-earnings-growth ratio (r_{PEG}) measure. Botosan et al. (2011) assess the validity of twelve commonly used proxies for cost of equity capital and find that only two proxies, Easton's (2004) price-earnings-growth ratio (r_{PEG}) and Botosan and Plumlee's (2002) target price ratio (r_{DIV}), demonstrate the expected relation with future realized returns and firm-specific risk. The authors recommend researchers employ either of those proxies when requiring an estimate for cost of equity capital. I use r_{PEG} as my proxy for cost of equity capital over r_{DIV} because the less onerous data requirements result in losing fewer observations due to missing data items. I calculate the cost of equity capital proxy using the following equation:

$$COSTOFCAP_{i,t} = r_{PEG} = \sqrt{((f\_eps_2 - f\_eps_1)/p_0)},$$

where f_eps_2 and f_eps_1 are the median consensus analyst forecasts of earnings per share for years *t+2* and *t+1* collected from IBES, and p_0 is the price at *t* collected from the CRSP monthly detail file. I use

the final earnings per share forecast made before year-end. So, for example, for t = 12/31/2008, f_eps_2 is the median consensus forecast of earnings per share for 12/31/2010 and f_eps_1 is the median consensus forecast of earnings per share for 12/31/2009, and the forecast date is the final one before 12/31/2008.

I include several controls in my regression. First, I control for CSR performance using $CSR\_STRENGTHS_{i,t}$ and $CSR\_CONCERNS_{i,t}$, which are firm i's total number of CSR strengths and concerns for year t. I collect CSR strengths and concerns from the KLD STATS database and adjust the raw numbers by industry-year medians to generate comparable measures. Firms with better performance are more likely to disclose (Dye 1985), so firms with better CSR performance may be more likely to report at a higher disclosure level. Alternatively, as noted as a concern in Richardson and Welker (2001), there is a possibility that poor CSR performers may report at a high disclosure level as a form of self-promotion (i.e. "greenwashing"). Controlling for CSR performance reduces biases associated with either of these possibilities. Following Plumlee et al. (2010), I control for CSR strengths and concerns separately as opposed to combining them to generate a single measure of overall CSR performance. Plumlee et al. (2010) find that KLD environmental strengths and concerns are differentially correlated with environmental disclosure measures and highlight the importance of separating performance into strengths and concerns and controlling for both.

Given the well-documented result that voluntary financial disclosure level is associated with cost of equity capital (Botosan 1997), I control for a firm's voluntary financial disclosure using the proxy $CIG_{i,t}$. Following the search methodology used in Chuk et al. (2013), I hand collect company-issued guidance data to generate $CIG_{i,t}$, an indicator variable equal to 1 if firm i issued a management forecast during year t, and 0 otherwise.[18]

I include the remaining controls following Dhaliwal et al. (2011). Because expected returns are negatively associated with firm size and positively associated with the book-to-market ratio (Fama and

[18] Following Chuk et al. (2013), I searched company-issued press releases for variants of the words forecast, guidance, outlook, expect and anticipate in reference to the words earnings, profit, loss, income, sales, EBITDA, revenue or cash flow.

French 1992), I control for *SIZE*, which I calculate as the natural log of total assets, and *MTB*, which I calculate as the market value of common equity over the book value of common equity. I use *BETA*, which I calculate using CRSP daily returns data and value-weighted market returns, to control for systematic risk; and *LEVERAGE*, which I calculate as total debt scaled by total assets, to control for the possibility that cost of equity capital increases as leverage increases (Fama and French 1992). Long-term growth rate is positively associated with expected returns and therefore negatively associated with cost of equity capital (Botosan et al. 2011), so I control for *LT_GROWTH*, which I calculate as the two-years ahead median consensus forecast of earnings per share from IBES, minus the one-year ahead median consensus forecast of earnings per share from IBES, scaled by the one-year ahead median consensus forecast of earnings per share from IBES. Gebhardt et al. (2001) find that analyst forecast dispersion is positively associated with cost of equity capital, so I control for *LN_DISPERSION*, which I calculate as the natural log of the standard deviation of IBES earnings per share forecasts divided by the IBES median consensus earnings per share forecast. Finally, I include industry and year indicators to control for potential industry and year effects. Each control variable is measured for firm *i* at the end of year *t*, where year *t* is the year covered by the CSR report.

In Equation (1) and all subsequent equations, I cluster standard errors at the firm level to reflect the possibility that residuals are correlated across firms.

Based on the theory that good CSR performers may have greater incentives to disclose truthfully than some poor CSR performers, I perform a supplemental test to determine whether the association between CSR disclosure level and cost of equity capital differs between good and poor CSR performers. In this supplemental test, I add *GOOD_CSR_PERF*, an indicator variable equal to 1 if a firm's CSR performance ratio is greater than or equal to the industry-year median CSR performance ratio, and 0 otherwise, and interaction terms between *A*, *B* and *C* and *GOOD_CSR_PERF* to Equation (1).

Given the U.S.'s already rich disclosure environment, it may be difficult to detect differences in cost of equity capital based on only small differences in CSR disclosure level (Leuz and Verrecchia 2000). For example, it may be difficult to detect a difference in cost of equity capital attributable to CSR disclosure level between a firm reporting upon 20 performance indicators and self-declaring a B and a firm reporting upon 15 performance indicators and self-declaring a C. To overcome this potential difficulty, I drop all reports with self-declared disclosure levels of B and C to compare only A-level reports and Undeclared reports. Because A is the highest level and Undeclared is the lowest level, a comparison of those two levels, as opposed to A versus B or B versus C for example, would be most likely to yield measurable results. To test H1, I estimate Equation (1) modified to exclude the controls for levels B and C using the sample of only A-level and Undeclared reports. As an extension of my supplemental test examining whether the association differs between good and poor CSR performers, I also estimate Equation (1) excluding the controls for levels B and C, and including a control for *GOOD_CSR_PERF* and an interaction term *GOOD_CSR_PERF*A*.

An important research design issue thus far is the lack of control for self-selection bias. If, for example, firms with low ex-ante cost of equity capital are more or less likely to report at a higher CSR disclosure level, estimating Equation (1) without addressing the selection issue would produce biased results. I attempt to address self-selection concerns using two alternative methods: propensity score matching and a lead-lag methodology.

For the propensity score matching method, to increase the power of the tests, I first drop all B- and C-level reports from my sample and include only A-level and Undeclared reports. Then I estimate a logistic regression to calculate a firm's propensity to disclose at A-level (as opposed to Undeclared) while controlling for previously documented determinants of CSR disclosure as well as other potential determinants of CSR disclosure level based on observations made during data collection. The majority of the determinants in my logistic regression are based on those used by Dhaliwal et al. (2011) and/or Christensen (2013), both of which estimate determinant models for the issuance of a CSR report:

advertising, good CSR performance, number of operating segments, Tobin's Q, litigation payout, recent CSR misconduct, ROA, size, leverage, raised capital, whether the firm is global, cost of equity capital, liquidity and whether the firm issues a management forecast. For the sake of brevity, I describe each of these variables and provide the rationale for inclusion in the logistic regression and calculation methodology in Appendix C. In addition to the variables based on Dhaliwal et al. (2011) and/or Christensen (2013), I control for other variables that, based on observations made during data collection, I believe may contribute to a firm's decision to disclose at a high level. I control for *FIRM_AGE*, the number of years a firm has been included in the Compustat database, as more established firms have a longer history of CSR performance that the public may already be aware of, and therefore may have a lesser need to provide CSR disclosures. I control for *INTANGIBLES*, a firm's intangible assets, which proxy for a firm's proprietary information, as firms with more proprietary information may be less likely to disclose at the highest level. I also control for *YEARS_OF_REPORTING*, the number of years a firm has been issuing CSR reports under the GRI G3/G3.1 Reporting Guidelines, as firms tend to increase their disclosure level over time. I control for *REPUTATION*, an indicator variable equal to 1 if a firm is included on Fortune's Most Admired Companies list for year *t*, and 0 otherwise, as firms with a good reputation may disclose at a high level to maintain that good reputation, or alternatively, firms with a poor reputation may disclose at a high level to boost their reputation. Finally, I add controls for *CSR_STRENGTHS* and *CSR_CONCERNS*, because CSR strengths and concerns separately could provide different disclosure level incentives incremental to the combined CSR performance ratio measure. The logistic regression I estimate using only the sample of A-level and Undeclared reports is as follows:

$$\begin{aligned}\text{logit}\,(A) = {} & \beta_0 + \beta_1 ADVERTISING_{i,t} + \beta_2 GOOD\_CSR\_PERF_{i,t} + + \beta_3 OP\_SEGMENTS_{i,t} \\ & + \beta_4 TOBINS\_Q_{i,t} + \beta_5 LITIGATION\_PAYOUT_{i,t} + \beta_6 RECENT\_MISCONDUCT_{i,t} \\ & + \beta_7 ROA_{i,t} + \beta_8 SIZE_{i,t} + \beta_9 LEVERAGE_{i,t} + \beta_{10} RAISED\_CAPITAL_{i,t} + \beta_{11} GLOBAL_{i,t} \\ & + \beta_{12} COSTOFCAP_{i,t} + \beta_{13} LIQUIDITY_{i,t} + \beta_{14} CIG_{i,t} + \beta_{15} FIRM\_AGE_{i,t}\end{aligned}$$

$$+ \beta_{16}INTANGIBLESi_{,t} + \beta_{17}YEARS\_OF\_REPORTING_{i,t} + \beta_{18}REPUTATION_{i,t}$$
$$+ \beta_{19}CSR\_STRENGTHS_{i,t} + \beta_{20}CSR\_CONCERNS_{i,t} + \Sigma INDUSTRY_{i,t} + \Sigma YEAR_{i,t} + \varepsilon_{i,t}. \quad (2)$$

I construct the propensity score matched sample using caliper matching. In comparison to a 1:1 propensity score match, caliper matching includes all untreated observations with a propensity score within the caliper width as matches to the treated observations. I use a caliper width of .015, which is sufficiently small so that covariate balance is more or less maintained and sufficiently large so that I avoid losing power due to small sample size. Using the propensity score matched sample, I re-estimate Equation (1) to determine if after controlling for self-selection bias due to observable covariates, firms declaring the highest CSR disclosure level have lower cost of equity capital than firms declaring the lowest CSR disclosure level.

As an alternative method to address self-selection concerns, I employ a lead-lag methodology similar to the one used in Dhaliwal et al. (2011) to determine whether changes in CSR disclosure level result in subsequent changes in cost of equity capital. I begin with the entire sample of 804 reports, and exclude reports for which I am unable to discern whether the CSR disclosure level increased from the prior year. I then estimate the following ordinary least squares regression:

$$\Delta COSTOFCAP_{i,t+1} = \beta_0 + \beta_1 INCREASE\_IN\_DISC\_LEVEL_{i,t} + \beta_2 \Delta CSR\_STRENGTHS_{i,t}$$
$$+ \beta_3 \Delta CSR\_CONCERNS_{i,t} + \beta_4 \Delta SIZE_{i,t} + \beta_5 \Delta MTB_{i,t} + \beta_6 \Delta BETA_{i,t}$$
$$+ \beta_7 \Delta LEVERAGE_{i,t} + \beta_8 \Delta LT\_GROWTH_{i,t} + \beta_9 \Delta LN\_DISPERSION_{i,t}$$
$$+ \Sigma INDUSTRY_{i,t} + \Sigma YEAR_{i,t} + \varepsilon_{i,t}. \quad (3)$$

Again, because the U.S. disclosure environment is already so rich, it is unlikely that my tests would be able to detect changes in cost of equity capital attributable to small changes in CSR disclosure level. It is more likely that only large increases in CSR disclosure level would result in a subsequent

measurable reduction in cost of equity capital. Therefore, I re-estimate Equation (3) including indicator variables equal to 1 if the increase in disclosure level is a one level increase, a two-level increase or a three-level increase, and 0 otherwise.[19]

Research Methodology – Tests of the External Assurance of CSR Disclosures

To test H2, whether the external assurance of CSR disclosures is associated with cost of equity capital, I estimate the following ordinary least squares regression, where the variable of interest, *ASSURANCE*, is an indicator variable equal to 1 if a report is externally assured, and 0 otherwise:

$$\begin{aligned} COSTOFCAP_{i,t} = {} & \beta_0 + \beta_1 ASSURANCE_{i,t} + \beta_2 CSR\_STRENGTHS_{i,t} + \beta_3 CSR\_CONCERNS_{i,t} \\ & + \beta_4 CIG_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 MTB_{i,t} + \beta_7 BETA_{i,t} + \beta_8 LEVERAGE_{i,t} \\ & + \beta_9 LT\_GROWTH_{i,t} + \beta_{10} LN\_DISPERSION_{i,t} + \Sigma INDUSTRY_{i,t} + \Sigma YEAR_{i,t} + \varepsilon_{i,t}. \end{aligned} \quad (4)$$

Based on the theory that good CSR performers may have greater incentives to obtain external assurance than some poor CSR performers, I perform a supplemental test to determine whether the association between the external assurance of CSR disclosures and cost of equity capital differs between good and poor CSR performers. In my supplemental test, I add *GOOD_CSR_PERF* to Equation (4), in addition to an interaction term between *ASSURANCE* and *GOOD_CSR_PERF*.

I perform an additional supplemental test to determine whether various assurance scopes of CSR disclosures are associated with cost of equity capital. For this test, I replace *ASSURANCE* with assurance scope indicator variables *GHG_ONLY*, *SPECIFIC_SECTIONS* and *ENTIRE_REPORT* in Equation (4).
I also estimate the equation including an indicator variable for *GOOD_CSR_PERF* and interaction terms between *GHG_ONLY*, *SPECIFIC_SECTIONS* and *ENTIRE_REPORT* and *GOOD_CSR_PERF* to determine whether the associations between the various assurance scopes and cost of equity capital vary between good and poor CSR performers.

[19] I am unable to test for differential effects depending on whether a firm is a good CSR performer versus a poor CSR performer because there are no observations where a poor CSR performer increases disclosure level.

As was the case with Equation (1) for CSR disclosure level, estimating Equation (4) without addressing self-selection issues could potentially produce biased results. Therefore, I again attempt to address self-selection concerns using propensity score matching and a lead-lag methodology.

The logistic regression I estimate to determine a firm's propensity to obtain external assurance contains the same controls as Equation (2), except I add controls for the various CSR disclosure levels. Because the descriptive statistics in Table 3 indicate that reports are more likely to be externally assured the higher the disclosure level, I include indicator variables *A*, *B* and *C* in Equation (2).

I again construct the propensity score matched sample using caliper matching with caliper width equal to 0.15, and I re-estimate each of the previous equations to determine if after controlling for self-selection due to observable covariates, firms that obtain external assurance of their CSR disclosures have lower cost of equity capital than firms that do not.

Finally, as an alternative method to address self-selection, I again employ a lead-lag methodology similar to the one used in Dhaliwal et al. (2011) to determine whether changes in external assurance result in subsequent changes in cost of equity capital. I begin with the entire sample of 804 reports and exclude firms for which I am unable to discern whether a firm initiated or dropped external assurance since the prior year. I then estimate the following ordinary least squares regression:[20]

$$\begin{aligned}\Delta COSTOFCAP_{i,t+1} = {} & \beta_0 + \beta_1 INITIATE\_ASSURANCE_{i,t} + \beta_2 DROP\_ASSURANCE_{i,t} \\ & + \beta_3 \Delta CSR\_STRENGTHS_{i,t} + \beta_4 \Delta CSR\_CONCERNS_{i,t} + \beta_5 \Delta SIZE_{i,t} + \beta_6 \Delta MTB_{i,t} \\ & + \beta_7 \Delta BETA_{i,t} + \beta_8 \Delta LEVERAGE_{i,t} + \beta_9 \Delta LT\_GROWTH_{i,t} \\ & + \beta_{10} \Delta LN\_DISPERSION_{i,t} + \Sigma INDUSTRY_{i,t} + \Sigma YEAR_{i,t} + \varepsilon_{i,t}. \end{aligned} \quad (5)$$

[20] I am unable to test for differential effects depending on whether a firm is a good CSR performer versus a poor CSR performer because there are no observations where a poor CSR performer either initiates or drops assurance.

CHAPTER IV

EMPIRICAL RESULTS

Table 5 Panel A provides descriptive statistics for the final sample of 804 reports.[21] Mean cost of equity capital is 11.1% and is not significantly different among good and poor CSR performers. 14% of the reports in my sample are level A, 38% are level B, 21% are level C and 27% are Undeclared. 22% of the reports are externally assured, and good CSR performers are more likely to obtain external assurance than poor CSR performers. Firms in my sample have roughly seven more CSR strengths than the median for their industry-year and roughly two more CSR concerns than the median for their industry-year. Good CSR performers have more CSR strengths and fewer CSR concerns than poor CSR performers. Good CSR performers are also more likely to increase CSR disclosure level and initiate external assurance than poor CSR performers.

For comparative purposes, Table 5 Panel B presents the means of select variables in my sample alongside the means of the database populations between 2006 and 2012 for the same variables.[22] The firms in my sample are significantly larger and have lower beta and analyst forecast dispersion than the general population of firms. In addition, the firms in my sample have significantly higher industry-year-adjusted CSR strengths and concerns than the general population of firms.

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[21] The sample is comprised of 804 reports, except for change variables (i.e. *INCREASE_DISC_LEVEL*, *INITIATE_ASSURANCE*), for which the sample is comprised of 460 reports. The smaller sample for change variables results from being unable to calculate changes for observations where 1) it is the firm's first GRI report 2) the previous report was not in the immediately previous year or was not a GRI report 3) the previous report was dropped for having missing data items.

[22] The database population mean for *COSTOFCAP* is calculated from the population of the merged IBES and CRSP databases; for *CSR_STRENGTHS* and *CSR_CONCERNS* from the KLD database population; for *SIZE*, *MTB* and *LEVERAGE* from the Compustat population; for *BETA* from the CRSP database population; and for *LT_GROWTH* and *LN_DISPERSION* from the IBES database population. All means are over 2006 through 2012 to coincide with my sample period.

TABLE 5

Summary Statistics and Correlation

Panel A: Mean Comparison

	Full Sample (n=804)		*GOOD_CSR_PERF*=1 (n=736)		*GOOD_CSR_PERF*=0 (n=68)			
Variable	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**t-value (difference)**	
COSTOFCAP	0.111	0.087	0.111	0.088	0.120	0.075	-0.816	
A	0.139	0.346	0.144	0.351	0.088	0.286	1.277	
B	0.381	0.486	0.378	0.485	0.412	0.496	-0.552	
C	0.205	0.404	0.198	0.399	0.279	0.452	-1.583	*
UNDECLARED	0.275	0.447	0.280	0.449	0.221	0.418	1.043	
ASSURANCE	0.221	0.415	0.231	0.422	0.118	0.325	2.150	**
GHG_ONLY	0.046	0.210	0.045	0.207	0.059	0.237	-0.527	
SPECIFIC_SECTIONS	0.126	0.332	0.135	0.341	0.029	0.170	2.533	***
ENTIRE_REPORT	0.050	0.218	0.052	0.221	0.029	0.170	0.836	
CSR_STRENGTHS	6.963	4.866	7.442	4.728	1.779	2.957	9.700	***
CSR_CONCERNS	2.123	3.225	2.002	3.240	3.426	2.754	-3.509	***
CIG	0.761	0.427	0.765	0.424	0.721	0.452	0.814	
SIZE	9.877	1.512	9.899	1.524	9.640	1.362	1.352	*
MTB	3.766	28.136	3.921	29.400	2.082	1.414	0.516	
BETA	1.049	0.458	1.046	0.444	1.083	0.595	-0.637	
LEVERAGE	0.254	0.148	0.249	0.147	0.306	0.148	-3.058	***
LT_GROWTH	0.136	0.825	0.136	0.857	0.131	0.322	0.048	
LN_DISPERSION	-3.206	1.235	-3.224	1.249	-3.014	1.059	-0.134	

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	Full Sample (n=460)		*GOOD_CSR_PERF* =1 (n=436)		*GOOD_CSR_PERF* =0 (n=24)		
Variable	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**t-value (difference)**
INCREASE_DISC_LEVEL	0.157	0.364	0.165	0.372	0.000	0.000	2.174 **
ONE_LEVEL_INCREASE	0.104	0.306	0.110	0.313	0.000	0.000	1.719 *
TWO_LEVEL_INCREASE	0.041	0.199	0.044	0.204	0.000	0.000	1.043
THREE_LEVEL_INCREASE	0.011	0.104	0.011	0.107	0.000	0.000	0.527
INITIATE_ASSURANCE	0.065	0.247	0.069	0.253	0.000	0.000	1.329 *
DROP_ASSURANCE	0.007	0.081	0.007	0.083	0.000	0.000	0.407

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Panel B: Comparison of Selected Variables to Database Population

Variable	GRI Sample	Database Population	t-value (difference)	
COC	0.111	0.221	-0.76	
CSR_STRENGTHS	6.963	0.777	67.87	***
CSR_CONCERNS	2.123	0.246	29.45	***
SIZE	9.877	5.493	41.28	***
MTB	3.766	1.153	0.19	
BETA	1.049	1.117	-1.70	**
LEVERAGE	0.254	0.171	-0.80	
LT_GROWTH	0.136	0.168	-0.25	
LN_DISPERSION	-3.206	-2.598	-12.19	***

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Panel C: Correlations

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1. COSTOFCAP		0.04	0.00	-0.02	-0.01	**-0.06**	0.05	**0.20**
2. A	0.04		N/A	N/A	N/A	**0.16**	**0.26**	**0.18**
3. B	-0.03	N/A		N/A	N/A	**0.12**	**0.09**	**-0.07**
4. C	0.05	N/A	N/A		N/A	**-0.07**	**-0.21**	**-0.15**
5. UNDECLARED	-0.04	N/A	N/A	N/A		**-0.19**	**-0.11**	**0.08**
6. ASSURANCE	-0.02	**0.16**	**0.12**	**-0.07**	**-0.19**		**0.18**	0.04
7. CSR_STRENGTHS	-0.02	**0.23**	**0.10**	**-0.21**	**-0.11**	**0.21**		**0.30**
8. CSR_CONCERNS	**0.12**	**0.15**	-0.05	**-0.13**	0.06	0.05	**0.26**	
9. CIG	**-0.34**	-0.02	**0.07**	0.01	**-0.07**	-0.02	0.00	**-0.13**
10. SIZE	0.03	**0.17**	0.02	**-0.21**	0.04	**0.07**	**0.49**	**0.54**
11. MTB	**-0.30**	0.00	-0.04	0.00	0.05	**0.09**	**0.17**	-0.02
12. BETA	**0.58**	0.04	-0.03	**0.09**	**-0.07**	0.02	**-0.12**	-0.04
13. LEVERAGE	-0.02	**0.09**	0.05	-0.03	**-0.10**	**-0.07**	**-0.12**	0.04
14. LT_GROWTH	**0.69**	-0.01	-0.02	**0.08**	-0.05	0.03	**-0.08**	0.02
15. LN_DISPERSION	**0.45**	**0.09**	**-0.10**	0.01	0.03	-0.01	**-0.15**	**0.08**

	9	*10*	*11*	*12*	*13*	*14*	*15*
1. COSTOFCAP	**-0.28**	**0.17**	-0.02	**0.43**	**0.14**	**-0.23**	**0.37**
2. A	-0.02	**0.15**	-0.01	0.02	**0.12**	-0.04	**0.08**
3. B	**0.07**	0.04	-0.02	-0.02	0.02	0.01	**-0.09**
4. C	0.01	**-0.18**	-0.02	**0.07**	-0.03	0.02	0.00
5. UNDECLARED	**-0.07**	0.01	0.05	**-0.06**	**-0.10**	-0.01	0.04
6. ASSURANCE	-0.02	0.05	-0.03	0.04	**-0.07**	0.04	-0.01
7. CSR_STRENGTHS	0.01	**0.48**	0.05	**-0.13**	**-0.09**	-0.05	**-0.14**
8. CSR_CONCERNS	**-0.17**	**0.56**	0.02	-0.02	0.05	**-0.08**	**0.10**
9. CIG		**-0.19**	0.04	**-0.32**	-0.05	-0.01	**-0.26**
10. SIZE	**-0.16**		0.00	-0.03	0.02	**-0.07**	-0.06
11. MTB	**0.27**	**-0.19**		-0.04	-0.02	0.00	-0.01
12. BETA	**-0.31**	**-0.13**	**-0.29**		**-0.08**	**0.06**	**0.50**
13. LEVERAGE	-0.03	-0.04	**-0.07**	**-0.16**		**-0.12**	0.04
14. LT_GROWTH	**-0.18**	**-0.14**	0.01	**0.41**	**-0.12**		**0.07**
15. LN_DISPERSION	**-0.27**	**-0.08**	**-0.34**	**0.51**	-0.03	**0.29**	

This table presents descriptive statistics and correlations for the regression variables. Panel A presents descriptive statistics of regression variables for the entire sample and also for good and poor CSR performers. The sample is comprised of 804 reports, except for change variables (i.e. *INCREASE_DISC_LEVEL, INITIATE_ASSURANCE*), for which the entire sample is comprised of 460 reports. The smaller sample for change variables results from being

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unable to calculate changes for observations where 1) it is the firm's first GRI report, 2) the previous report was not in the immediately previous year or was not a GRI report or 3) the previous report was dropped for having missing data items. Panel B presents the means of select variables alongside the means of the database populations from which the variables were collected. Panel C presents Pearson (above the diagonal) and Spearman (below the diagonal) correlations for the regression variables. Correlations significant at least at the 10% level are presented in bold.

Variable definitions:
COSTOFCAP: implied cost of equity capital estimated using Easton (2004) PEG ratio;
A, *B*, *C*, and *UNDECLARED*: indicator variables equal to 1 if self-declared CSR disclosure level is A, B, C or Undeclared, respectively, and 0 otherwise;
ASSURANCE: indicator variable equal to 1 if any portion of the CSR report is externally assured, and 0 otherwise;
GHG_ONLY, SPECIFIC_SECTIONS and *ENTIRE_REPORT:* indicator variables equal to 1 if the assurance scope is greenhouse gas emissions only, specific sections only, or entire report, respectively, and 0 otherwise;
CSR_STRENGTHS and *CSR_CONCERNS*: industry-year adjusted CSR strengths and concerns obtained from the KLD Research & Analytics database;
CIG: indicator variable equal to 1 if the reporting firm issued a management forecast, and 0 otherwise;
SIZE: the natural log of total assets;
MTB: the ratio of market value of common equity to book value of common equity;
BETA: market model beta calculated using CRSP daily returns;
LEVERAGE: leverage ratio, defined as total debt divided by total assets;
LT_GROWTH: long-term growth rate measured as the difference between the median two-year-ahead analyst consensus EPS forecast and the median one-year-ahead analyst forecast divided by the median one-year-ahead analyst consensus EPS forecast;
LN_DISPERSION: the natural log of analyst forecast dispersion, where analyst forecast dispersion is the standard deviation of analyst EPS forecasts divided by the median consensus EPS forecast;
INCREASE_DISC_LEVEL: indicator variable equal to 1 if a report's disclosure level is higher than the previous year's report's disclosure level, and 0 otherwise;
ONE_LEVEL_INCREASE: indicator variable equal to 1 if a report's disclosure level is one level higher than the previous year's report's disclosure level, and 0 otherwise;
TWO_LEVEL_INCREASE: indicator variable equal to 1 if a report's disclosure level is two levels higher than the previous year's report's disclosure level, and 0 otherwise;
THREE_LEVEL_INCREASE: indicator variable equal to 1 if a report's disclosure level is three levels higher than the previous year's report's disclosure level, and 0 otherwise;
INITIATE_ASSURANCE: indicator variable equal to 1 if a report is externally assured in the current year and not externally assured in the prior year, and 0 otherwise; and
DROP_ASSURANCE: indicator variable equal to 1 if a report is not externally assured in the current year and is externally assured in the prior year, and 0 otherwise.

Table 5 Panel C presents the correlations between all regression variables. Before controlling for the effects of any other variables, cost of equity capital is not significantly correlated with CSR disclosure level, and while the Pearson correlation between external assurance and cost of equity capital is negative and statistically significant, the Spearman correlation is not.

Results of Tests of Disclosure Level

Table 6 Panel A presents the results of estimating Equation (1) (and various modifications of Equation (1)) before addressing self-selection concerns. Using the full, unmatched sample, and without interacting CSR disclosure level with CSR performance, I fail to find a significant association between CSR disclosure level and cost of equity capital, and am therefore unable to support H1. When I control for CSR performance and interact CSR disclosure level with CSR performance, I still fail to find an association between CSR disclosure level and cost of equity capital for good CSR performers. However, I do find a positive coefficient on *A*, which suggests that poor CSR performers that self-declare CSR disclosure level A actually have 4.68% higher cost of equity capital than the reference group of poor CSR performers that produce Undeclared reports. In supplementary F-tests presented below the regression results, I find that poor CSR performers that self-declare CSR disclosure level A also have higher cost of equity capital than poor CSR performers that self-declare level B (by 4.67%). Overall, results of the first two regressions in Table 6 Panel A suggest that good CSR performers do not experience a cost of equity capital benefit for disclosing at a high level, and that poor CSR performers actually experience higher cost of equity capital for disclosing at a high level. These results are counter to H1 and are consistent with investors imposing a penalty on poor CSR performers for greenwashing.

Table 6 Panel A next presents the results of estimating Equation (1) where I drop all but A-level and Undeclared reports. Again, before addressing self-selection concerns and without controlling for CSR performance or interacting CSR disclosure level with CSR performance, I fail to find a significant association between CSR disclosure level and cost of equity capital. When I control for a firm's CSR

TABLE 6

Regressions of Cost of Equity Capital on CSR Disclosure Level

Panel A: Unmatched Sample

Dependent Variable=$COSTOFCAP_{i,t}$		Equation (1)					
Variable	**Expected Sign**	**Coefficient**	**t-statistic**		**Coefficient**	**t-statistic**	
Constant	?	-0.0065	-0.16		-0.0136	-0.28	
A	-	-0.0073	-0.85		0.0468	1.76	*
B	-	-0.0011	-0.17		-0.0001	-0.01	
C	-	0.0000	0.01		0.0171	0.88	
GOOD_CSR_PERF	-				0.0088	0.53	
*GOOD_CSR_PERF*A*	?				-0.0577	-1.90	*
*GOOD_CSR_PERF*B*	?				-0.0009	-0.06	
*GOOD_CSR_PERF*C*	?				-0.0188	-0.94	
CSR_STRENGTHS	+	0.0012	1.28		0.0013	1.47	
CSR_CONCERNS	+	0.0024	1.81	*	0.0025	1.67	*
CIG	-	-0.0159	-2.31	**	-0.0154	-2.24	**
SIZE	+	0.0048	1.39		0.0044	1.30	
BETA	+	0.0631	4.34	***	0.0631	4.22	***
MTB	-	0.0000	-1.12		0.0000	-1.12	
LEVERAGE	+	0.1159	4.17	***	0.1180	4.18	***
LT_GROWTH	-	-0.0243	-1.53		-0.0243	-1.53	
LN_DISPERSION	+	0.0127	3.91	***	0.0127	3.86	***
Industry effects		Yes			Yes		

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Year effects	Yes		Yes		
Adjusted R-squared	0.3827		0.3825		
Observations	804		804		

F-Tests	**F(1, 246)**	**Prob > F**	**F(1, 246)**	**Prob > F**	
A+*GOOD_CSR_PERF*A*=*B*+*GOOD_CSR_PERF*B*			0.67	0.41	
A+*GOOD_CSR_PERF*A*=*C*+*GOOD_CSR_PERF*C*			0.78	0.38	
A+*GOOD_CSR_PERF*A*=0			1.39	0.24	
B+*GOOD_CSR_PERF*B*=*C*+*GOOD_CSR_PERF*C*			0.01	0.92	
B+*GOOD_CSR_PERF*B*=0			0.02	0.88	
C+*GOOD_CSR_PERF*C*=0			0.07	0.78	
A=*B*	0.32	0.57	4.47	0.04	**
A=*C*	0.61	0.43	1.48	0.22	
A=0	0.73	0.39	3.09	0.08	*
B=*C*	0.04	0.85	1.26	0.26	
B=0	0.03	0.87	0.00	0.99	
C=0	0.00	0.99	0.77	0.38	

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Dependent Variable=$COSTOFCAP_{i,t}$

		Equation (1)				
Variable	**Expected Sign**	**Coefficient**	**t-statistic**		**Coefficient**	**t-statistic**	
Constant	?	-0.0533	-0.66		-0.0710	-0.90	
A	-	-0.0097	-1.38		0.0487	2.09	**
GOOD_CSR_PERF	-				0.0115	0.71	
*GOOD_CSR_PERF*A*	?				-0.0629	-2.64	***
CSR_STRENGTHS	+	0.0004	0.37		0.0007	0.54	
CSR_CONCERNS	+	0.0022	1.15		0.0021	1.10	
CIG	-	-0.0128	-0.12		-0.0113	-1.10	
SIZE	+	0.0054	0.79		0.0054	0.79	
BETA	+	0.0591	3.90	***	0.0608	4.09	***
MTB	-	0.0000	-0.46		0.0000	-0.36	
LEVERAGE	+	0.1920	3.90	***	0.2000	3.93	***
LT_GROWTH	-	-0.0075	-4.46	***	-0.0074	-4.85	***
LN_DISPERSION	+	0.0088	3.22	***	0.0088	3.22	***
Industry effects		Yes			Yes		
Year effects		Yes			Yes		
Adjusted R-squared		0.4441			0.4485		
Observations		333			333		
F-Tests		**F(1, 122)**	**Prob > F**		**F(1, 122)**	**Prob > F**	
A+*GOOD_CSR_PERF***A*=0					4.12	0.04	**
A=0		1.90	0.17		4.36	0.04	**

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Panel B: Propensity Score Matched Sample

Dependent Variable=$COSTOFCAP_{i,t}$		Equation (1)					
Variable	**Expected Sign**	**Coefficient**	**t-statistic**		**Coefficient**	**t-statistic**	
Constant	?	0.0302	0.36		-0.0479	-0.49	
A	-	-0.0113	-1.38		0.0814	4.12	***
GOOD_CSR_PERF	-				0.0661	2.71	***
*GOOD_CSR_PERF*A*	?				-0.1010	-4.41	***
CSR_STRENGTHS	+	0.0000	-0.01		0.0000	-0.04	
CSR_CONCERNS	+	0.0085	1.93	*	0.0086	1.92	*
CIG	-	-0.0142	-0.94		-0.0159	-1.11	
SIZE	+	-0.0073	-0.94		-0.0076	-1.00	
BETA	+	0.0326	1.68	*	0.0419	2.20	**
MTB	-	0.0012	3.45	***	0.0013	3.77	***
LEVERAGE	+	0.2810	2.80	***	0.2900	2.85	***
LT_GROWTH	-	-0.0029	-0.46		-0.0047	-0.78	
LN_DISPERSION	+	0.0101	1.66		0.0080	1.31	
Industry effects		Yes			Yes		
Year effects		Yes			Yes		
Adjusted R-squared		0.4853			0.4955		
Observations		206			206		
F-Tests		**F(1, 93)**	**Prob > F**		**F(1, 93)**	**Prob > F**	
A+*GOOD_CSR_PERF*A*=0					5.45	0.02	*
A=0		1.89	0.17		16.94	0.00	***

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Panel C: Changes in CSR Disclosure Level

Dependent Variable=Δ*COSTOFCAP*$_{i,t+1}$	**Equation (3)**				
Variable	**Coefficient**	**t-statistic**	**Coefficient**	**t-statistic**	
Constant	0.1475	1.54	0.1441	1.50	
INCR_DISC_LEVEL	0.0454	0.52			
ONE_LEVEL_INCREASE			0.0880	0.85	
TWO_LEVEL_INCREASE			0.0406	0.25	
THREE_LEVEL_INCREASE			-0.2880	-1.77	*
ΔCSR_STRENGTHS	-0.0047	-0.49	-0.0050	-0.52	
ΔCSR_CONCERNS	-0.0020	-0.12	-0.0032	-0.19	
ΔSIZE	-2.2168	-0.98	-2.2726	-1.01	
ΔBETA	-0.0826	-0.76	-0.0734	-0.68	
ΔMTB	0.0021	1.00	0.0020	1.00	
ΔLEVERAGE	-0.0865	-0.15	-0.1072	-0.18	
ΔLT_GROWTH	0.0293	0.47	0.0306	0.49	
ΔLN_DISPERSION	0.0115	0.33	0.0076	0.22	
Industry effects	Yes		Yes		
Year effects	Yes		Yes		
Adjusted R-squared	0.0209		0.0200		
Observations	460		460		

This table presents the results of regressing cost of equity capital on CSR disclosure level and control variables. Panel A presents the results of estimating Equation (1), both using the full sample and the sample of only A-level and Undeclared reports. Panel B presents the results of estimating Equation (1) using the propensity score matched sample generated based on the logistic regression of Equation (2) presented in Appendix D. Panel C presents the results of estimating Equation (3). Relevant F-tests are presented below each regression. All variables are defined in Table 5. *, **, *** indicate significance at the .10, .05 and .01 level. Coefficients and t-statistics are based on standard errors clustered at the firm level.

performance and interact CSR disclosure level with CSR performance, I again find that poor CSR performers that self-declare level A actually have higher cost of equity capital than the reference group of poor CSR performers that prepare Undeclared reports (by 4.87%). Again, this result is consistent with investors imposing a penalty on poor CSR performers for greenwashing. I also find, however, that good CSR performers that self-declare level A have lower cost of equity capital than good CSR performers that prepare Undeclared reports (by 1.42%), which suggests that for good CSR performers, CSR disclosure level is negatively associated with cost of equity capital. Collectively, the results from Table 6 Panel A suggest that the association between CSR disclosure level and cost of equity capital differs depending on whether a firm is a good or poor CSR performer. In support of H1, good CSR performers that disclose at a high level have lower cost of equity capital than good CSR performers that disclose at a low level. Counter to H1, poor CSR performers that disclose at a high level have higher cost of equity capital than poor CSR performers that disclose at a low level, which is consistent with investors imposing a penalty on poor CSR performers for greenwashing. It is important to note, however, that self-selection issues have not yet been addressed.

To control for self-selection bias due to observable covariates, I first estimate a logistic regression to calculate a firm's propensity to disclose at A-level (as opposed to Undeclared) while controlling for previously documented determinants of CSR disclosure as well as some other potential determinants of CSR disclosure level based on observations made during data collection. Appendix D presents the results of estimating the logistic equation (Equation (2)).[23] The results of estimating Equation (2) provide some insight into potential determinants of CSR disclosure level. The positive coefficients on *OP_SEGMENTS* and *YEARS_OF_REPORTING* suggest that operationally complex firms are more likely to report at a high CSR disclosure level and that the longer a firm has been reporting under the GRI G3/G3.1 guidelines, the more likely that firm is to report at a high CSR disclosure level. The negative coefficient on *TOBINS_Q* provides support for the argument that firms in expansionary periods are financially

[23] The reduced sample size of 285 (as opposed to 333 A and Undeclared reports) results from certain industries being dropped because the industry indicator predicts failure perfectly (i.e. no reports for that industry are A-level).

constrained and have fewer resources to commit to CSR disclosure (Dhaliwal et al. 2011), and therefore are less likely to report at a high CSR disclosure level. The negative coefficient on *COSTOFCAP* suggests that firms with high cost of equity capital are less likely to report at a high CSR disclosure level, and the negative coefficient on *REPUTATION* suggests that firms that have poor reputations attempt to improve their reputations by reporting at a high CSR disclosure level.

I use the propensity scores generated from estimating Equation (2) to create a propensity score matched sample of firms that disclose at either the A or Undeclared level. Appendix E Panel A presents a comparison of means to assess covariate balance following propensity score matching. Before propensity score matching, the population means for firms issuing A-level reports and firms issuing Undeclared reports are significantly different for the majority of the variables. After propensity score matching, the population means for firms issuing A-level reports and firms issuing Undeclared reports are not statistically different for any but two variables, indicating that overall, covariate balance appears to be achieved in the matched sample.

Table 6 Panel B presents the results of estimating Equation (1) using the propensity score matched sample of A-level and Undeclared reports. As was the case with the unmatched sample, after addressing self-selection concerns due to observable covariates, but without interacting CSR disclosure level with CSR performance, I fail to find an association between CSR disclosure level and cost of equity capital. When I include a control for a firm's CSR performance and interact CSR performance with disclosure level, I again find that poor CSR performers that report at the highest CSR disclosure level have higher cost of equity capital than poor CSR performers that report at the lowest CSR disclosure level (by 8.14%), which is consistent with investors imposing a penalty on poor CSR performers for greenwashing. I also find that good CSR performers that self-declare level A have lower cost of equity capital than good CSR performers that report at the Undeclared level (by 1.96%), indicating that good CSR performers that report at a high CSR disclosure level have lower cost of equity capital than good CSR performers that report at a low CSR disclosure level. Overall, consistent with the results of Table 6

Panel A, the results of Table 6 Panel B suggest that CSR disclosure level is associated with cost of equity capital, but the direction of the association depends on whether a firm is a good or poor CSR performer.

Table 6 Panel C presents the results of estimating Equation (3), where I employ a lead-lag methodology to test whether a change in CSR disclosure level in year *t* is associated with a change in cost of equity capital in year *t+1*. Perhaps not surprisingly, when estimating Equation (3) using a single indicator variable to represent increases in CSR disclosure level of any magnitude, I fail to find a significant association. As noted earlier, the already rich disclosure environment in the U.S. makes it unlikely that a small change in CSR disclosure level would have a detectable impact on cost of equity capital. Therefore, it is not unreasonable to expect that only large changes in CSR disclosure level would have a measurable impact on future change in cost of equity capital. The results of estimating Equation (3) with separate indicator variables representing the magnitudes of increases support this expectation. The coefficient on *THREE_LEVEL_INCREASE* is negative and statistically significant, indicating that a large increase in CSR disclosure level is associated with a subsequent reduction in cost of equity capital.[24]

To summarize the results of the CSR disclosure level tests, counter to H1, I find that among poor CSR performers, CSR disclosure level is actually positively associated with cost of equity capital. That is, poor CSR performers that self-declare a CSR disclosure level of A have 4-8% higher cost of equity capital than poor CSR performers that prepare Undeclared CSR reports. This result is consistent (in direction, not necessarily magnitude) with Dhaliwal et al. (2011), who find that poor CSR performers that initiate CSR disclosure have a 2.79% increase in cost of equity capital following the issuance of their first report, and is consistent with investors imposing a penalty on poor CSR performers for greenwashing. [25] In support of H1, I find that among good CSR performers, CSR disclosure level is negatively associated with cost of equity capital. That is, good CSR performers that report at a high CSR disclosure level have

[24] The coefficient on *THREE_LEVEL_INCREASE* of -0.2880 is difficult to interpret since the dependent variable, change in cost of equity capital, is a scaled change. For the median firm, the coefficient of -0.2880 represents approximately a 3% reduction in cost of equity capital.

[25] See Limitations of Inferences section for a discussion of the magnitude of the results for poor CSR performers.

1-2% lower cost of equity capital than good CSR performers that report at a low CSR disclosure level, and a large increase in CSR disclosure level is associated with a subsequent reduction in cost of equity capital.[26] This result is also consistent with Dhaliwal et al. (2011), who find that good CSR performers that initiate CSR disclosure have a 1.83% decrease in cost of equity capital following the issuance of their first report. The results for good CSR performers are consistent with results from parallel studies in the voluntary financial disclosure literature. The results for poor CSR performers, however, are counter to expectations and provide new insight into the consequences of disclosure level when disclosures lack ex-post verifiability.

Results of Tests of External Assurance

Table 7 Panel A presents the results of estimating Equation (4) (and various modifications of Equation (4)) before addressing self-selection concerns. The negative coefficient on *ASSURANCE* suggests that firms that obtain external assurance on CSR disclosures have 1.78% lower cost of equity capital than firms that do not. When I include a control for a firm's CSR performance and interact CSR performance with external assurance, it appears that the association is driven by good CSR performers. Specifically, F-tests presented below the regression results show that only good CSR performers that obtain external assurance of their CSR disclosures have lower cost of equity capital than good CSR performers that do not (by 1.76%). This result supports H2, but suggests that the association only holds for good CSR performers.

Using the same unmatched sample, I perform a supplemental test to determine whether the various scopes of external assurance are associated with cost of equity capital. The results suggest that firms that obtain external assurance of greenhouse gas only, specific sections only and entire report have lower cost of equity capital than firms that do not obtain external assurance by 1.39%, 1.90% and 1.84%, respectively. When I include a control for a firm's CSR performance and interact CSR performance with

[26] This result only applies to good CSR performers. There are no poor CSR performers in my sample that increase CSR disclosure level.

TABLE 7

Regressions of Cost of Equity Capital on the External Assurance of CSR Disclosures

Panel A: Unmatched Sample

Dependent Variable=$COSTOFCAP_{i,t}$

		Equation (4)			
Variable	**Expected Sign**	**Coefficient**	**t-statistic**	**Coefficient**	**t-statistic**
Constant	?	-0.0046	-0.12	-0.0033	-0.08
ASSURANCE	?	-0.0178	-2.74 ***	-0.0204	-1.23
GOOD_CSR_PERF	-			-0.0016	-0.16
*GOOD_CSR_PERF*ASSURANCE*	?			0.0028	0.16
CSR_STRENGTHS	+	0.0014	1.45	0.0014	1.61
CSR_CONCERNS	+	0.0024	1.88 *	0.0024	1.66 *
CIG	-	-0.0165	-2.44 **	-0.0165	-2.44 **
SIZE	+	0.0044	1.39	0.0044	1.39
BETA	+	0.0645	4.25 ***	0.0644	4.15 ***
MTB	-	0.0000	-1.33	0.0000	-1.32
LEVERAGE	+	0.1109	4.10 ***	0.1108	4.08 ***
LT_GROWTH	-	-0.0239	-1.52	-0.0239	-1.52
LN_DISPERSION	+	0.0124	4.18 ***	0.0124	4.16 ***
Industry effects		Yes		Yes	
Year effects		Yes		Yes	
Adjusted R-squared		0.3903		0.3887	
Observations		804		804	

(continued on next page)

F-Tests	F(1, 246)	Prob > F	F(1, 246)	Prob > F
ASSURANCE +*GOOD_CSR_PERF***ASSURANCE* =0			6.67	0.01 ***
ASSURANCE = 0	7.49	0.01 ***	1.51	0.22

(continued on next page)

Dependent Variable=$COSTOFCAP_{i,t}$

Variable	Expected Sign	Equation (4) Coefficient	t-statistic	Coefficient	t-statistic
Constant	?	-0.0044	-0.11	-0.0040	-0.09
GHG_ONLY	?	-0.0139	-1.88 *	-0.0071	-0.50
SPECIFIC_SECTIONS	?	-0.0190	-1.90 *	-0.0062	-0.24
ENTIRE_REPORT	?	-0.0184	-1.94 *	-0.0587	-1.66 *
GOOD_CSR_PERF	-			-0.0015	-0.15
*GOOD_CSR_PERF*GHG_ONLY*	?			-0.0074	-0.46
*GOOD_CSR_PERF*SPECIFIC_SECTIONS*	?			-0.0130	-0.48
*GOOD_CSR_PERF*ENTIRE_REPORT*	?			0.0427	1.26
CSR_STRENGTHS	+	0.0014	1.40	0.0015	1.56
CSR_CONCERNS	+	0.0024	1.88 *	0.0023	1.62
CIG	-	-0.0165	-2.42 **	-0.0165	-2.39 **
SIZE	+	0.0043	1.40	0.0044	1.40
BETA	+	0.0645	4.15 ***	0.0650	4.06 ***
MTB	-	0.0000	-1.31	0.0000	-1.28
LEVERAGE	+	0.1112	4.09 ***	0.1115	4.07 ***
LT_GROWTH	-	-0.0283	-1.51	-0.0239	-1.51
LN_DISPERSION	+	0.0123	4.27 ***	0.0123	4.22 ***
Industry effects		Yes		Yes	
Year effects		Yes		Yes	
Adjusted R-squared		0.3888		0.3863	
Observations		804		804	

(continued on next page)

F-Tests	F(1, 246)	Prob > F	F(1, 246)	Prob > F
*ENTIRE_REPORT+GOOD_CSR_PERF*ENTIRE_REPORT= SPECIFIC_SECTIONS+GOOD_CSR_PERF*SPECIFIC_SECTIONS*			0.05	0.82
*ENTIRE_REPORT+GOOD_CSR_PERF*ENTIRE_REPORT= GHG_ONLY+GOOD_CSR_PERF*GHG_ONLY*			0.02	0.90
*ENTIRE_REPORT+GOOD_CSR_PERF*ENTIRE_REPORT*= 0			3.24	0.07 *
*SPECIFIC_SECTIONS+GOOD_CSR_PERF*SPECIFIC_SECTIONS= GHG_ONLY+GOOD_CSR_PERF*GHG_ONLY*			0.17	0.68
*SPECIFIC_SECTIONS+GOOD_CSR_PERF*SPECIFIC_SECTIONS* =0			3.43	0.07 *
*GHG_ONLY+GOOD_CSR_PERF*GHG_ONLY*= 0			3.26	0.07 *
ENTIRE_REPORT=SPECIFIC_SECTIONS	0.00	0.97	1.56	0.21
ENTIRE_REPORT=GHG_ONLY	0.15	0.70	1.93	0.17
ENTIRE_REPORT= 0	3.78	0.05 *	2.76	0.10 *
SPECIFIC_SECTIONS=GHG_ONLY	0.22	0.64	0	0.97
SPECIFIC_SECTIONS= 0	3.62	0.06 *	0.06	0.81
GHG_ONLY= 0	3.54	0.06 *	0.25	0.62

(continued on next page)

Panel B: Propensity Score Matched Sample

Dependent Variable=$COSTOFCAP_{i,t}$

		Equation (4)			
Variable	**Expected Sign**	**Coefficient**	**t-statistic**	**Coefficient**	**t-statistic**
Constant	?	0.0006	0.02	0.0185	0.77
ASSURANCE	?	-0.0021	-0.58	-0.0229	-1.75 *
GOOD_CSR_PERF	-			-0.0208	-2.29 **
*GOOD_CSR_PERF*ASSURANCE*	?			0.0220	1.69 *
CSR_STRENGTHS	+	0.0001	0.21	0.0000	0.54
CSR_CONCERNS	+	-0.0001	-0.09	-0.0003	-0.33
CIG	-	-0.0184	-2.97 ***	-0.0178	-2.92 ***
SIZE	+	0.0039	1.63	0.0039	1.66 *
BETA	+	0.0450	8.19 ***	0.0449	8.17 ***
MTB	-	0.0000	0.69	0.0000	0.88
LEVERAGE	+	0.0736	4.27 ***	0.0720	4.11 ***
LT_GROWTH	-	0.0051	1.20	0.0053	1.25
LN_DISPERSION	+	0.0040	2.06 **	0.0041	2.09 **
Industry effects		Yes		Yes	
Year effects		Yes		Yes	
Adjusted R-squared		0.5175		0.5207	
Observations		734		734	

F-Tests	**F(1, 237)**	**Prob > F**	**F(1, 237)**	**Prob > F**
ASSURANCE+*GOOD_CSR_PERF*ASSURANCE*=0			0.06	0.80
ASSURANCE= 0	0.34	0.56	3.07	0.08 *

(continued on next page)

Dependent Variable=*COSTOFCAP* $_{i,t}$

Variable	Expected Sign	Equation (4) Coefficient	t-statistic	Coefficient	t-statistic
Constant	?	0.0006	0.02	0.0183	0.75
GHG_ONLY	?	-0.0007	-0.15	-0.0122	-0.84
SPECIFIC_SECTIONS	?	-0.0028	-0.55	-0.0130	-0.65
ENTIRE_REPORT	?	-0.0014	-0.21	-0.0520	-2.48 **
GOOD_CSR_PERF	-			-0.0210	-2.33 **
*GOOD_CSR_PERF*GHG_ONLY*	?			0.0120	0.82
*GOOD_CSR_PERF*SPECIFIC_SECTIONS*	?			0.0109	0.57
*GOOD_CSR_PERF*ENTIRE_REPORT*	?			0.0541	2.62 ***
CSR_STRENGTHS	+	0.0001	0.26	0.0003	0.63
CSR_CONCERNS	+	-0.0001	-0.14	-0.0005	-0.51
CIG	-	-0.0183	-2.88 ***	-0.0174	-2.78 ***
SIZE	+	0.0038	1.60	0.0038	1.61
BETA	+	0.0450	8.11 ***	0.0461	8.32 ***
MTB	-	0.0000	0.77	0.0000	0.91
LEVERAGE	+	0.0744	4.22 ***	0.0748	4.23 ***
LT_GROWTH	-	0.0051	1.20	0.0052	1.25
LN_DISPERSION	+	0.0040	2.02 **	0.0040	2.02 **
Industry effects		Yes		Yes	
Year effects		Yes		Yes	
Adjusted R-squared		0.5163		0.5218	
Observations		734		734	

(continued on next page)

F-Tests	F(1, 237)	Prob > F	F(1, 237)	Prob > F
*ENTIRE_REPORT+GOOD_CSR_PERF*ENTIRE_REPORT= SPECIFIC_SECTIONS+GOOD_CSR_PERF*SPECIFIC_SECTIONS*			0.28	0.60
*ENTIRE_REPORT+GOOD_CSR_PERF*ENTIRE_REPORT= GHG_ONLY+GOOD_CSR_PERF*GHG_ONLY*			0.10	0.75
*ENTIRE_REPORT+GOOD_CSR_PERF*ENTIRE_REPORT*= 0			0.12	0.73
*SPECIFIC_SECTIONS+GOOD_CSR_PERF*SPECIFIC_SECTIONS= GHG_ONLY+GOOD_CSR_PERF*GHG_ONLY*			0.08	0.78
*SPECIFIC_SECTIONS+GOOD_CSR_PERF*SPECIFIC_SECTIONS* =0			0.18	0.67
*GHG_ONLY+GOOD_CSR_PERF*GHG_ONLY*= 0			0.00	0.96
ENTIRE_REPORT=SPECIFIC_SECTIONS	0.03	0.86	2.24	0.14
ENTIRE_REPORT=GHG_ONLY	0.01	0.93	2.83	0.09 *
ENTIRE_REPORT= 0	0.04	0.83	6.14	0.01 **
SPECIFIC_SECTIONS=GHG_ONLY	0.11	0.74	0.00	0.97
SPECIFIC_SECTIONS= 0	0.30	0.58	0.43	0.51
GHG_ONLY= 0	0.02	0.88	0.71	0.40

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Panel C: Lead-Lag Methodology

Dependent Variable=Δ*COSTOFCAP*$_{i,t+1}$	**Equation (5)**	
Variable	**Coefficient**	**t-statistic**
Constant	0.1359	1.39
INITIATE_ASSURANCE	-0.0726	-0.99
DROP_ASSURANCE	-0.0479	-0.80
ΔCSR_STRENGTHS	-0.0044	-0.45
ΔCSR_CONCERNS	-0.0015	-0.08
ΔSIZE	-2.1674	-0.94
ΔBETA	-0.0802	-0.72
ΔMTB	0.0019	0.93
ΔLEVERAGE	-0.0571	-0.10
ΔLT_GROWTH	0.0294	0.47
ΔLN_DISPERSION	0.0112	0.32
Industry effects	Yes	
Year effects	Yes	
Adjusted R-squared	0.0188	
Observations	460	

This table presents the results of regressing cost of equity capital on external assurance of CSR disclosure and control variables. Panel A presents the results of estimating Equation (4) using the full unmatched sample. Panel B presents the results of estimating Equation (4) using the propensity score matched sample generated based on the logistic regression of Equation (2) presented in Appendix D. Panel C presents the results of estimating Equation (5). Relevant F-tests are presented below each regression. All variables are defined in Table 5. *, **, *** indicate significance at the .10, .05 and .01 level. Coefficients and t-statistics are based on standard errors clustered at the firm level.

each scope of external assurance, I find that among poor CSR performers, only those that obtain external assurance of their entire CSR report have lower cost of equity capital than those that do not obtain external assurance (by 5.87%). Results of F-tests show that good CSR performers that obtain external assurance of greenhouse gas only, specific sections only and entire report have lower cost of equity capital than good CSR performers that do not obtain external assurance by 1.45%, 1.92% and 1.60%, respectively. Recall, however, that these results may be biased due to lack of control for self-selection concerns.

To address self-selection concerns, I estimate a logistic regression to calculate a firm's propensity to obtain external assurance of its CSR disclosures while controlling for potential determinants of the choice to obtain external assurance of CSR disclosures. Appendix D presents the results of estimating the logistic equation (Equation (2)).[27] The results of estimating Equation (2) provide some insight into potential determinants of a firm's choice to obtain external assurance over its CSR disclosures. The negative coefficients on *A*, *B* and *C* empirically support the observation that reports with higher disclosure level are more likely to be externally assured. The positive coefficients on *TOBINS_Q* and *RAISED_CAPITAL* suggest that growth firms and firms raising capital need to increase the credibility of their disclosures in order to attract investors, and the positive coefficient on *SIZE* suggests that larger firms are easier able to expend resources to purchase external assurance of CSR disclosures. The negative coefficient on *COSTOFCAP* indicates that firms with higher cost of equity capital are less likely to obtain external assurance of CSR disclosures. The positive coefficients on *YEARS_OF_REPORTING* and *CSR_STRENGTHS* indicate that the longer a firm has been reporting under the GRI G3/G3.1 Reporting Guidelines, and the more CSR strengths a firm has, the more likely it is to obtain external assurance. Finally, the negative coefficients on *FIRM_AGE*, *INTANGIBLES* and *REPUTATION* suggest

[27] The reduced sample size of 793 (as opposed to the full sample of 804 reports) results from certain industries being dropped because the industry indicator predicts failure perfectly (i.e. no reports for that industry are externally assured).

that older firms, firms with more proprietary information and firms that already have a positive reputation are less likely to obtain external assurance of their CSR disclosures.

I use the propensity scores generated from estimating Equation (2) to create a matched sample of firms based on propensity to obtain external assurance of CSR disclosures. Appendix E Panel B presents a comparison of means to assess covariate balance following propensity score matching. Before propensity score matching, the population means for firms obtaining external assurance and firms not obtaining external assurance are significantly different for the majority of the variables. After propensity score matching, the population means are not statistically different for any variables, indicating that covariate balance appears to be achieved in the matched sample.

Table 7 Panel B presents the results of estimating Equation (4) using the propensity score matched sample. After controlling for self-selection bias due to observable covariates, but without interacting external assurance with CSR performance, I fail to find an association between the external assurance of CSR disclosures and cost of equity capital. When I include a control for a firm's CSR performance and interact CSR performance with external assurance, the coefficient on *ASSURANCE* is negative and statistically significant, indicating that poor CSR performers that obtain external assurance on their CSR disclosures have 2.29% lower cost of equity capital than poor CSR performers that do not obtain external assurance on their CSR disclosures. This result is consistent with investors requiring external assurance to distinguish poor CSR performers disclosing actual improvements in performance from greenwashers. Controlling for self-selection bias due to observable covariates, I no longer find that good CSR performers that obtain external assurance of CSR disclosures have lower cost of equity capital than good CSR performers that do not. This suggests that there is a selection bias in that firms with good CSR performance and low cost of equity capital are more likely to obtain external assurance of their CSR disclosures. The benefits obtained by good CSR performers that obtain external assurance of their CSR disclosures therefore continue to be undetermined, providing an avenue for future research.

Table 7 Panel B next presents the results of estimating Equation (4) using the propensity score matched sample and including indicator variables for each of the various external assurance scopes. Controlling for self-selection bias due to observable covariates, but without interacting CSR disclosure level with CSR performance, I fail to find an association between any scope of external assurance of CSR disclosures and cost of equity capital. When I include a control for a firm's CSR performance and interact CSR performance with the various scopes external assurance, I find that poor CSR performers that obtain external assurance of their entire report have 5.20% lower cost of equity capital than poor CSR performers that do not obtain external assurance. F-tests show that among poor CSR performers that do obtain external assurance, those that obtain external assurance of their entire report have 3.98% lower cost of equity capital than those that obtain external assurance of only their greenhouse gas disclosures. These results are consistent with investors requiring a high degree of credibility to distinguish poor CSR performers disclosing actual improvements in performance from greenwashers. I do not find that good CSR performers that obtain external assurance of any scope have lower cost of equity capital than good CSR performers that do not obtain external assurance. This again suggests that there may be a selection bias where firms with good CSR performance and low cost of equity capital are more likely to obtain external assurance (of any scope) of their CSR disclosures, but those firms do not obtain a cost of equity capital benefit over good CSR performers that do not obtain external assurance.

Finally, in an additional test that addresses self-selection, I employ a lead-lag methodology to test whether the initiation or discontinuation of external assurance of CSR disclosures in year *t* is associated with a change in cost of equity capital in year *t+1* using Equation (5). Because there are no poor CSR performers in my sample that either initiate or drop external assurance, these results only apply to good CSR performers. And because earlier tests suggest that good CSR performers that obtain external assurance of their CSR disclosures do not experience lower cost of equity capital, I do not expect to find significant results. However, I include the test in Table 7 Panel C for the sake of completeness. As

expected, I do not find that good CSR performers that either initiate or drop external assurance of their CSR disclosures experience a subsequent change in cost of equity capital.

To summarize the results of the tests examining the association between the external assurance of CSR disclosures and cost of equity capital, I find that among poor CSR performers, those that obtain external assurance of their CSR disclosures have 2-5% lower cost of equity capital than those that do not. This result only holds for poor CSR performers that obtain external assurance of their entire CSR reports as opposed to only greenhouse gas emissions or other specific sections within their reports. These results are consistent with investors requiring a high degree of credibility to distinguish poor CSR performers disclosing actual improvements in performance from greenwashers. It appears that good CSR performers with low cost of equity capital are more likely to obtain external assurance of their CSR disclosures, but that after controlling for selection bias due to observable covariates, they do not experience lower cost of equity capital compared to good CSR performers that do not obtain external assurance.

Limitations of Inferences

Certain research design choices in my study must be discussed as they may limit the inferences that can be drawn from my results. First, in order to preserve the true variation in CSR performance, I compared a firm's CSR performance to the industry-year median of the entire KLD population as opposed to the industry-year median of just my sample of GRI disclosers. As a result, my sample contains very few poor CSR performers (only 68), and even fewer poor CSR performers that disclose at an A-level (6) or obtain external assurance (8). Because of the small sample sizes, and because poor CSR performers that prepare GRI reports might be fundamentally different than poor CSR performers that do not prepare GRI reports, caution must be used when generalizing results to poor CSR performers as a whole.

Second, in order to control for selection bias caused by observable covariates, I employ propensity score matching in my main tests. However, propensity score matching only controls for

selection bias caused by observed or observable covariates. It is possible, therefore, that unobserved covariates that affect whether a firm discloses at A-level or obtains external assurance, are not accounted for in the matching procedure. In such a case, coefficients can potentially be biased. The high magnitudes of some cost of equity capital effects in my study (particularly those for poor CSR performers) raise this concern. The most likely explanation is that selection based on a firm's unobservable CSR risk is not fully accounted for. Though I attempt to control for a firm's CSR risk by matching on and controlling for a firm's CSR strengths and concerns, which Plumlee et al. (2010) argue may proxy for a firm's CSR risk, I cannot rule out that CSR strengths and concerns are noisy proxies and that firms self-select into self-declaring level A or obtaining external assurance based on unobserved CSR risk.

CHAPTER V

CONCLUSION

In this study, I examine variation in CSR disclosure level and the external assurance of CSR disclosures and their associations with cost of equity capital. I find that among firms with good CSR performance, those reporting at a high CSR disclosure level have lower cost of equity capital than those reporting at a low CSR disclosure level. I also find that an increase in disclosure level is associated with a subsequent reduction in cost of equity capital for good CSR performers. Among firms with poor CSR performance, I find the opposite: firms reporting at a high CSR disclosure level have higher cost of equity capital than firms reporting at a low CSR disclosure level. This result is consistent with investors imposing a penalty on firms for greenwashing.

In my tests of external assurance, I find that only poor CSR performers benefit from the external assurance of CSR disclosures. Specifically, among firms with poor CSR performance, those that obtain external assurance of their CSR disclosures have lower cost of equity capital than those that do not. This result only holds for firms that obtain external assurance of their entire CSR report as opposed to those that obtain external assurance of only specific CSR disclosures within their report. These results are consistent with investors requiring a high degree of credibility to distinguish poor CSR performers disclosing actual improvements in performance from greenwashers.

My study contributes to the literature by complementing and improving upon prior studies focusing on CSR disclosure and cost of equity capital, and by being the first to introduce external assurance as a variable of interest in explaining cost of equity capital for CSR disclosers. It also contributes to the voluntary disclosure literature by exploring the consequences of disclosure level when disclosures are not necessarily ex-post verifiable or truthful; and it contributes to the voluntary assurance

literature by examining consequences of voluntary assurance of voluntary disclosures, particularly in an unregulated and non-standardized setting.

My study introduces potential avenues for future research examining the incentives for poor CSR performers to report at a high CSR disclosure level and for good CSR performers to obtain external assurance of their CSR disclosures. My results suggest that poor CSR performers experience higher cost of equity capital if they report at the highest CSR disclosure level. However, given that some poor CSR performers still opt to report at the highest CSR disclosure level, there must be some other benefit driving the decision. My results also suggest that good CSR performers with low cost of equity capital are more likely to obtain external assurance of their CSR disclosures, but that they do not experience a subsequent reduction in cost of equity capital as a result of obtaining external assurance. Therefore, there must be some other benefit that drives good CSR performers to obtain external assurance. These possibilities invite future research into additional benefits of reporting at a high CSR disclosure level and obtaining external assurance of CSR disclosures.

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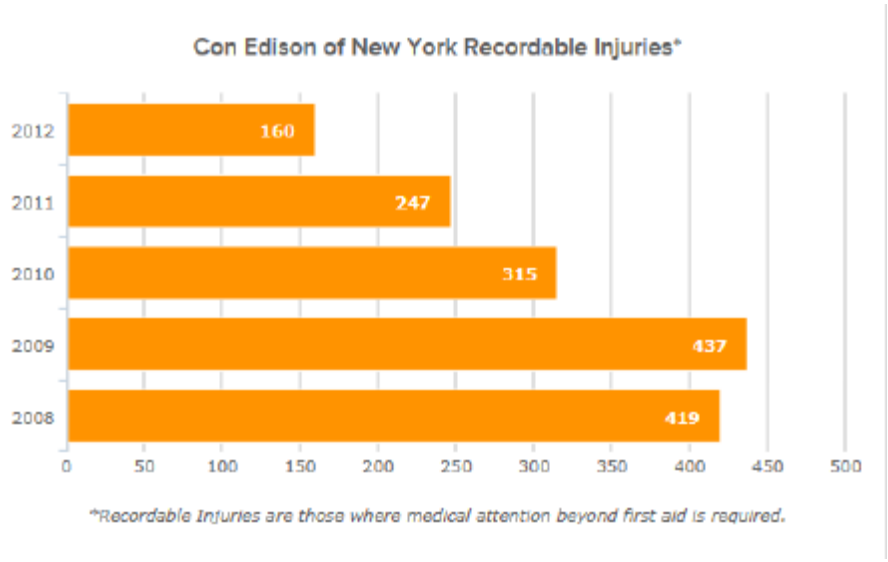
APPENDIX A

Examples of Disclosures by Poor CSR Performers

Example 1: This is an excerpt from Con Edison's 2012 CSR report for the year ended December 31, 2012.[28] KLD issued Con Edison a concern under the category "Health and Safety Concern" within Employee Relations. This is a partial disclosure for core performance indicator LA7: Rates of injury, occupational disease, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender.



This could be an example of a poor CSR performer disclosing at a high level to communicate actual improvements in performance. While 160 injuries in 2012 may still result in Con Edison's classification as a poor CSR performer, it may still disclose at a high level to communicate a trend of improvement.

(continued on next page)

[28] See http://www.conedison.com/ehs/2012-sustainability-report/working-safely/safety-performance/index.html#gsc.tab=0

Example 2: This is an excerpt from Southern Company's ongoing CSR report.[29] KLD issued Southern Company concerns under the categories "Substantial Emissisions" and "Climate Change". This is a partial disclosure for performance indicator EN18: Initiatives to reduce greenhouse gas emissions and reductions achieved.

power. We're researching carbon dioxide capture and storage to address associated climate change issues.

Carbon Capture and Storage

Carbon dioxide is a byproduct of combustion. Southern Company is researching—with the federal government and other partners—how to capture and store carbon dioxide emitted from power plants to keep it out of the atmosphere. (See also DOE Carbon Sequestration Atlas .)

The National Carbon Capture Center

- **The National Carbon Capture Center** is a focal point of U.S. Department of Energy's efforts to develop advanced technologies to reduce greenhouse gas emissions from coal-based power generation. The center, managed and operated by Southern Company in Alabama, works with scientists and technology developers from government, industry and universities who are creating the next generation of carbon capture technologies.

- **Kemper County Energy Facility**, in Mississippi, is designed to capture 65 percent of carbon dioxide to be sold for enhanced oil recovery. Kemper is the only integrated gasification combined cycle (IGCC) plant being constructed in the U.S. that is designed to capture and store carbon dioxide emissions the day it begins commercial operations. In addition, IGCC is designed to have fewer nitrous oxide, sulfur dioxide and mercury emissions than traditional pulverized coal technology. (See TRIG™ sidebar)

(continued on next page)

[29] See http://www.southerncompany.com/what-doing/corporate-responsibility/energy-innovation/greenhouse-gases.cshtml

This could be an example of a firm with poor CSR performance disclosing at a high level in order to communicate expected improvements in performance. While Southern Company may have high greenhouse gas emissions or a significant impact on climate change, it may still have the incentive to disclose at a high level to communicate actual or expected improvements in performance.

Example 3: These are excerpts from DuPont's 2013 CSR report for the year ended December 31, 2012.[30] KLD issued DuPont a concern under the category "Substantial Emissions." The report is self-declared level A, which requires reporting upon all core performance indicators.

We are pleased to support the Global Reporting Initiative (GRI) as a comprehensive, Internationally-recognized format for reporting data on economic, environmental and social performance. Our GRI report is intended to supplement the 2013 Sustainability Progress Report, which provides an overview of the progress towards achieving our sustainability goals. To develop the GRI report, we utilized the GRI G3 guidelines and data and information up until December 31, 2012. The report is illustrated in a question and answer style format to make it easier for the reader. At the end of the report is the GRI Index for a quick reference to a particular section. This report applies a self-declared GRI Application Level A.

However, DuPont failed to report on core performance indicator EN19: Emissions of ozone-depleting substances by weight. An excerpt of DuPont's GRI index is below:

EN17	Other relevant indirect greenhouse gas emissions by weight.	36	Full
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.	37	Full
EN20	NOx, SOx, and other significant air emissions by type and weight.	38	Full
EN21	Total water discharge by quality and destination.	39	Partial
EN22	Total weight of waste by type and disposal method.	39	Partial
EN23	Total number and volume of significant spills.	39	Partial

This could be an example of a firm either greenwashing its disclosure level by self-declaring a higher disclosure level than it should, or an example of greenwashing its performance by deflecting attention from areas of concern by disclosing positive accomplishments.

[30] See http://www.dupont.com/content/dam/assets/corporate-functions/our-approach/sustainability/documents/DuPont%202013%20Global%20Reporting%20Initiative%20Report_Final.pdf

APPENDIX B

Application Level Criteria for each CSR Disclosure Level

Disclosure Indicator	Description	C	B	A
1.1	CEO statement on the relevance of CSR to the organization	X	X	X
1.2	Description of key CSR impacts, risks and opportunities		X	X
2.1-2.10	Organizational profile (name, brands, locations, segments, etc.)	X	X	X
3.1-3.8	Report period, scope, boundaries and limitations	X	X	X
3.9	Data measurement techniques, bases of calculations and assumptions		X	X
3.10-3.12	Changes or restatements from prior reports and GRI content index	X	X	X
3.13	Policy and practice regarding external assurance of CSR disclosures		X	X
4.1-4.4	Governance structure and mechanisms for stakeholders to provide input	X	X	X
4.5-4.13	Governance policies to avoid conflicts of interest and commitments to external CSR initiatives		X	X
4.14-4.15	List of stakeholders and basis for identifying stakeholders	X	X	X
4.16-4.17	Approach to stakeholder engagement and issues raised by stakeholders		X	X
Disclosures on Management Approach	Management's approach to addressing aspects of each category (Economic, Environmental, Social)		X	X
Report upon 10 Performance Indicators		X	X	X
Report upon 20 Performance Indicators			X	X
Report upon All Core Performance Indicators				X

This appendix describes the nature of the disclosures required to meet each disclosure level according to the GRI G3/G3.1 Reporting Guidelines.

APPENDIX C

Control Variables for CSR Disclosure Determinants Model Following Dhaliwal et al. (2011) and/or Christensen (2013)

Variable	Rationale for Including as a Control	Source	Calculation
ADVERTISING	Firms may use CSR disclosure as a form of advertising.	Christensen (2013)	Advertising expense scaled by total assets
GOOD_CSR_PERF	Firms with good CSR performance have greater incentives to disclose. Or, firms with poor CSR performance may use CSR reporting as a form of self-promotion.	Dye (1985); Richardson and Welker (2001)	Indicator variable equal to 1 if the firm's CSR performance ratio ((CSR strengths - CSR concerns)/(CSR strengths + CSR concerns)) is greater than or equal to the industry-year median, and 0 otherwise
OP_SEGMENTS	Firms with greater organizational complexity may be at higher risk of committing CSR misconduct and therefore may face more pressure to report upon CSR.	Christensen (2013)	Count of unique business segment identifiers from Compustat Historical Segments
TOBINS_Q	Firms in expansionary periods are financially constrained and have fewer resources to commit to CSR disclosure. Or, growth firms need to make higher levels of disclosure to reduce information asymmetry to attract investors.	Dhaliwal et al. (2011)	Market value of common equity plus the book value of debt, scaled by total assets, where the book value of debt is and common equity minus balance sheet deferred taxes
LITIGATION_PAYOUT	The presence of a litigation settlement in a given year proxies for litigation risk, and litigation risk may provide an incentive to disclose.	Christensen (2013)	Indicator variable equal to 1 if the firm had a cash outflow for a litigation settlement.
RECENT_MISCONDUCT	Firms that have recently committed CSR misconduct may use disclosure to attempt to repair their reputation.	Christensen (2013)	Indicator variable equal to 1 if the firm was involved in high profile CSR-related misconduct in the previous three years, and 0 otherwise

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Variable	Rationale for Including as a Control	Source	Calculation
ROA	Firms with more resources are better able to produce CSR reports.	Dhaliwal et al. (2011)	Income before extraordinary items scaled by total assets
SIZE	Size captures factors which may motivate CSR reporting, including public pressure or financial resources.	Dhaliwal et al. (2011)	Natural log of total assets
LEVERAGE	Debt servicing plays a monitoring role. Debt holders demand greater disclosure.	Dhaliwal et al. (2011)	Total debt scaled by total assets
RAISED_CAPITAL	Firms raising capital have a higher propensity to disclose.	Dhaliwal et al. (2011)	Sum of proceeds from issuing stock less purchases of stock plus sum of proceeds from issuing debt less reductions of long-term debt
GLOBAL	Firms with greater global business presence face more pressure to report upon CSR.	Dhaliwal et al. (2011)	Indicator variable equal to 1 if the firm reports non-zero foreign income, and 0 otherwise
COSTOFCAP	Firms with high ex-ante cost of equity capital are more likely to initiate CSR reporting.	Dhaliwal et al. (2011)	r_{PEG} as calculated by Easton (2004)
LIQUIDITY	Managers have incentives to increase liquidity of their firm's stock in order to issue equities or sell shares from treasury. Improving transparency increases liquidity	Dhaliwal et al. (2011)	The ratio of shares traded in the year to shares outstanding at year-end
CIG	CSR disclosure level could be correlated with general financial disclosure policies.	Dhaliwal et al. (2011)	Indicator variable equal to 1 if the firm issued a management forecast, and 0 otherwise

This appendix describes the variables used in the logistic regressions to calculate firms' propensities to disclose at A-level and to obtain external assurance that are based on prior studies by Dhaliwal et al. (2011) and/or Christensen (2013).

APPENDIX D

Logistic Regressions: Determinants of CSR Disclosure Level and the External Assurance of CSR Disclosures

	CSR Disclosure Level			External Assurance		
Variable	**Coefficient**	**z-statistic**		**Coefficient**	**z-statistic**	
Constant	-7.9538	-1.60		-8.5698	-3.36	***
A				1.7366	3.08	***
B				1.6253	4.11	***
C				0.8311	1.79	*
ADVERTISING	-15.0211	-0.83		1.2144	0.22	
GOOD_CSR_PERF	0.2857	0.29		0.0017	0.00	
OP_SEGMENTS	0.3202	2.13	**	0.0242	0.35	
TOBINS_Q	-1.0613	-1.76	*	0.7068	2.70	***
LITIGATION_PAYOUT	0.4343	0.81		0.4177	1.42	
RECENT_MISCONDUCT	0.0273	0.04		-0.3228	-0.81	
ROA	2.8842	0.61		-0.6253	-0.20	
SIZE	0.1655	0.28		0.4942	2.26	**
LEVERAGE	-0.0231	-0.01		-1.6901	-1.34	
RAISED_CAPITAL	4.1809	1.20		5.3261	2.57	***
GLOBAL	-0.7265	-0.90		-1.0377	-1.86	*
COSTOFCAP	-5.5382	-2.22	**	-7.1512	-2.50	**
LIQUIDITY	-0.0603	-0.52		0.0566	0.61	
CIG	0.1203	0.16		-0.4123	-1.00	
FIRM_AGE	0.0011	0.05		-0.0283	-2.88	***
INTANGIBLES	0.0000	-0.97		0.0000	-1.70	*
YEARS_OF_REPORTING	1.0820	3.21	***	0.3077	2.11	**
REPUTATION	-2.2999	-2.99	***	-0.8657	-2.24	**
CSR_STRENGTHS	0.0302	0.51		0.0857	2.40	**
CSR_CONCERNS	0.1714	1.24		0.0574	0.87	
Industry effects	Yes			Yes		
Year effects	Yes			Yes		
Pseudo R-squared	0.4701			0.2540		
Observations	285			793		

This appendix presents the results of the estimating logistic regressions of a firm's likelihood of producing an A-

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level CSR report as opposed to an Undeclared report, and of obtaining external assurance of CSR disclosures, on determinants of CSR disclosure and control variables using Equation (2). Propensity scores calculated from this equation create the propensity score matched samples used in Panel B of Tables 6 and 7. Variables are defined in Appendix C if based on Dhaliwal et al. (2011) and/or Christensen (2013), or below otherwise. *, **, *** indicate significance at the .10, .05 and .01 level. Coefficients and z-statistics are based on standard errors clustered at the firm level.

Variable definitions:
A, *B* and *C*: indicator variables equal to 1 if self-declared CSR disclosure level is A, B or C, respectively, and 0 otherwise;
CSR_STRENGTHS and *CSR_CONCERNS*: industry-year adjusted CSR strengths and concerns obtained from the KLD Research & Analytics database;
FIRM_AGE: the number of years a firm has been included in the Compustat database as of year *t*;
INTANGIBLES: intangible assets;
YEARS_OF_REPORTING: the number of years a firm has produced a GRI G3/G3.1 CSR report at year *t*; and
REPUTATION: indicator variable equal to 1 if the firm is included in Fortune's Most Admired Companies list, and 0 otherwise.

APPENDIX E

Panel A: Covariate Balance of Determinants of CSR Disclosure Level

	Prior to Matching				After Matching			
Variable	**A-level Report Mean**	**Undeclared Report Mean**	**t-value (difference)**		**A-level Report Mean**	**Undeclared Report Mean**	**t-value (difference)**	
A	1.00	0.00	-		1.00	0.00	-	
ADVERTISING	0.01	0.02	-3.26	***	0.01	0.00	1.73	*
GOOD_CSR_PERF	0.95	0.93	0.51		0.93	0.95	-0.55	
OP_SEGMENTS	6.79	4.47	7.25	***	5.74	5.7087	0.07	
TOBINS_Q	1.56	1.83	-2.83	***	1.62	1.57	0.45	
LITIGATION_PAYOUT	0.21	0.13	2.09	**	0.26	0.22	0.51	
RECENT_MISCONDUCT	0.38	0.24	2.67	***	0.30	0.24	0.80	
ROA	0.06	0.07	-1.77	**	0.07	0.06	0.70	
SIZE	10.44	9.90	3.45	***	10.03	9.93	0.50	
LEVERAGE	0.30	0.23	3.87	***	0.27	0.29	-0.74	
RAISED_CAPITAL	-0.01	-0.03	2.16	**	-0.02	-0.01	-0.18	
GLOBAL	0.86	0.70	3.24	***	0.81	0.73	1.12	
COSTOFCAP	0.12	0.11	1.18		0.12	0.11	0.85	
LIQUIDITY	2.96	2.92	0.15		3.16	2.65	1.16	
CIG	0.74	0.71	0.59		0.72	0.75	-0.30	
FIRM_AGE	51.03	43.22	3.96	***	48.42	52.09	-1.31	
INTANGIBLES	12255.20	6659.94	2.61	***	6415.30	6993.60	-0.29	
YEARS_OF_REPORTING	4.02	2.33	9.30	***	3.86	3.94	-0.28	
REPUTATION	0.56	0.55	0.18		0.51	0.30	2.52	**

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	Prior to Matching				After Matching		
Variable	**A-level Report Mean**	**Undeclared Report Mean**	**t-value (difference)**		**A-level Report Mean**	**Undeclared Report Mean**	**t-value (difference)**
CSR_STRENGTHS	10.11	6.11	7.12	***	8.93	7.84	1.25
CSR_CONCERNS	3.53	2.52	2.39	***	2.64	1.83	1.42
Observations	112	221			69	137	

Panel B: Covariate Balance of Determinants of the External Assurance of CSR Disclosures

	Prior to Matching				After Matching		
Variable	**Assured Report Mean**	**Unassured Report Mean**	**t-value (difference)**		**Assured Report Mean**	**Unassured Report Mean**	**t-value (difference)**
ASSUR	1.00	0.00	-		1.00	0.00	-
A	0.24	0.11	4.52	***	0.23	0.24	-0.36
B	0.49	0.35	3.39	***	0.47	0.46	0.15
C	0.15	0.22	-2.01	**	0.17	0.17	-0.07
ADVERTISING	0.02	0.01	1.42	*	0.02	0.01	0.81
GOOD_CSR_PERF	0.96	0.90	2.16	**	0.95	0.95	-0.08
OP_SEGMENTS	4.93	4.58	1.52	*	4.92	4.77	0.47
TOBINS_Q	1.88	1.66	3.20	***	1.79	1.68	1.28

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	Prior to Matching				After Matching			
Variable	**Assured Report Mean**	**Unassured Report Mean**	**t-value (difference)**		**Assured Report Mean**	**Unassured Report Mean**	**t-value (difference)**	
LITIGATION_PAYOUT	0.20	0.17	1.07		0.20	0.26	-1.22	
RECENT_MISCONDUCT	0.26	0.23	0.70		0.25	0.29	-0.76	
ROA	0.08	0.06	2.50	***	0.07	0.06	1.48	
SIZE	10.03	9.83	1.54	*	10.07	10.21	-0.85	
LEVERAGE	0.23	2.60	-2.10	**	0.24	0.23	0.71	
RAISED_CAPITAL	-0.01	-0.02	1.69	*	-0.01	-0.01	0.33	
GLOBAL	0.74	0.70	0.96		0.73	0.72	0.23	
COSTOFCAP	0.10	0.11	-1.74	**	0.10	0.10	0.83	
LIQUIDITY	2.95	2.89	0.35		2.97	2.93	0.17	
CIG	0.74	0.77	-0.70		0.72	0.77	-0.86	
FIRM_AGE	42.19	43.83	-1.06		42.94	44.74	-0.90	
INTANGIBLES	8570.42	8529.81	0.02		9314.10	11774.00	-1.13	
YEARS_OF_REPORTING	3.44	2.56	6.56	***	3.35	3.43	-0.40	
REPUTATION	0.49	0.50	-0.17		0.51	0.46	0.82	
CSR_STRENGTHS	8.63	6.49	5.25	***	8.45	8.99	-0.99	
CSR_CONCERNS	2.36	2.06	1.11		2.33	2.13	0.57	
	178	626			159	575		

This appendix presents a comparison of means for variables used in the logistic regression of Equation (2) to determine the propensity for a firm to produce an A-level CSR report as opposed to an Undeclared report (Panel A) and to obtain external assurance of its CSR disclosures (Panel B). Comparisons of means are presented both before and after propensity score matching to provide evidence of covariate balance. *, **, *** indicate significance at the .10, .05 and .01 level.