Do the Bad Guys Report? Examining whether CSR Performance Influences the Use of Socially Responsible Tax Disclosures

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Abstract: This study explores two possible influences on the decision to voluntarily include socially responsible tax disclosures in corporate social responsibility (CSR) reports: Firms' level of tax avoidance and their performance in another important area of CSR, environmental performance. Using textual analysis and keywords developed for the tax setting, we analyze 2,981 CSR reports from 22 countries, which is the largest sample that has been analyzed in a tax context. We argue that firms use socially responsible tax disclosures to build or repair reputational capital. In line with this assumption, our results suggest that firms employ socially responsible tax disclosures to deflect from poor environmental performance. In this regard, they tend to provide symbolic disclosures, that is, they portray their tax payments as contributions to society rather than asserting a commitment to socially responsible tax behavior. We also find that firms from liberal market economies (United States, Canada, and Australia) use these disclosures to green-wash their tax avoidance activities, though we do not find evidence of this behavior for the other firms.

Keywords: tax disclosure; environmental performance; corporate social responsibility; textual analysis

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I. INTRODUCTION

"We pay taxes to local and national governments around the world that help fund schools, community infrastructure, and public services. (…) We consider UPS's reputation, brand, and corporate responsibility when we evaluate our tax positions."
UPS 2015 Corporate Sustainability Report (UPS 2016, 51)

The view that paying tax is a socially responsible corporate activity is commonly posited by non-governmental entities (GRI 2016a, 2019), intergovernmental organizations (OECD 2011; PRI 2015), and academic research (Avi-Yonah 2009, 2014; Sikka 2010, 2013; Hasseldine and Morris 2013; Dowling 2014). The idea that firms should consider the positive societal impact of their tax payments is in line with stakeholder theory (Freeman 2010), which postulates that firms exist to benefit all stakeholders rather than just shareholders. Nevertheless, firms do not uniformly include tax disclosures when informing their stakeholders about their corporate social responsibility (CSR) performance by means of CSR reports. Davis, Guenther, Krull, and Williams (2016), for instance, examine 40 CSR reports by U.S. firms and find that nearly half of these reports do not contain any tax information at all or only include references to the firm's Form 10-K for information on tax. Similarly, in an international setting, Hardeck and Kirn (2016) show that tax disclosure in CSR reports varies significantly in terms of whether and how much tax information is provided. In this research, we shed light on potential reasons for this cross-sectional variation in tax disclosures. Specifically, we examine the impact of firms' level of tax avoidance and their performance in one of the most salient CSR areas, environmental performance, on decisions related to voluntary tax disclosures in CSR reports. In addition, we analyze whether these decisions vary cross-sectionally among countries with different types of economies.

Firms increasingly publish voluntary CSR reports (KPMG 2013; 2011). One motivation for CSR reporting is that it builds "reputational capital"[1] (Christensen 2016; Zhang, Shan, and Chang 2020; Bebbington, Larrinaga, and Moneva 2008), which can mitigate adverse consequences from negative events (Fombrun, Gardberg, and Barnett 2000; Godfrey 2005). Firms may disclose substantive actions to signal to stakeholders their commitment to socially responsible behavior, engaging in "green-highlighting" (Walker and Wan 2012). Reputational capital benefits may also incentivize firms to engage in "green-washing" by providing superficial or symbolic disclosures that are not necessarily grounded in reality.

As recent empirical work suggests socially responsible tax strategies have reputational benefits (Hardeck and Hertl 2014; Hardeck, Harden, and Upton 2019; Inger and Stekelberg 2020; Davis, Moore, and Rupert 2020), it follows that firms have the opportunity to build reputational capital by disclosing tax information in their CSR reports.[2] In this regard, firms can emphasize their contributions to society through tax payments, which tends to be a symbolic type of disclosure as firms highlight the positive societal impact of their legally required tax payments. Furthermore, firms can disclose policies to ensure that the firm is a socially responsible taxpayer beyond mere compliance. We summarize these two types of disclosures as socially responsible tax disclosures.

It is likely that corporate tax avoidance is closely linked to tax disclosures in CSR reports. Firms that pay relatively high levels of tax could enhance reputational benefits from

[1] Karpoff (2012, 363) defines reputational capital as "the present value of the improvement in net cash flow and lower cost of capital that arises when firm's counterparties trust that the firm will uphold its explicit and implicit contracts and will not act opportunistically to their counterparties' detriment."

[2] However, different from other CSR areas such as environmental performance where opinions of what is socially responsible are consistent, the relationship between tax and CSR is contentious (Davis et al. 2016). Highlighting tax payments and efforts to become a socially responsible taxpayer may generate rather than mitigate reputational costs if investors perceive a firm is paying too much tax. Additionally, some stakeholders may believe paying tax reduces wealth generating activities that support other CSR activities (Davis et al. 2016; Porter and Kramer 2006; McGee 2010). Recent studies show consumers (Hardeck and Hertl 2014; Hardeck et al. 2019) and investors (Davis et al. 2020; Emerson, Yang, and Xu 2020) perceive paying tax as socially responsible. These findings suggest that stakeholders believing paying tax is socially irresponsible would be in the minority.

highlighting their tax behavior in their CSR report. Along those lines, firms paying a relatively low level of tax would avoid bringing attention to their tax behavior as prior literature suggests corporate tax avoidance is associated with reputational costs (Graham, Hanlon, Shevlin, and Shroff 2014; Austin and Wilson 2017; Dyreng, Hoopes, and Wilde 2016; Dhaliwal, Goodman, Hoffman, and Schwab 2017). However, tax avoiders may have an incentive to use CSR tax disclosures strategically because firms gain greater benefits from reputational capital when facing challenges to their character (Godfrey, Merrill, and Hansen 2009 2009). Thus, tax avoiders could attempt to repair their reputation through the use of socially responsible tax disclosures; whereas firms that avoid less tax do not feel inclined to disclose tax information.

Reputational capital from socially responsible tax disclosures could also be an effective tool to mitigate the negative consequences from poor performance in another area of CSR. The high salience on environmental issues (Berthelot, Cormier, and Magnan 2003; Marquis, Toffel, and Zhou 2016) and costs of providing inaccurate information in CSR reports (Backof, Negangard, and Winchel 2019) likely mitigate the usefulness of using environmental disclosures to offset poor environmental performance (i.e., "green-washing"). Instead, firms could use socially responsible tax disclosures to generate reputational capital to offset poor environmental performance. For example, following the Deepwater Horizon oil spill disaster in 2010, BP's subsequent CSR reports (BP 2011, 2012) contained new disclosures touting the benefit of tax revenues to local communities and their intent to engage in responsible tax practices.[3]

[3] BP's 2010 Sustainability Report includes a picture of oil spill clean-up on the front page and socially responsible tax disclosures that do not appear in the years before, including "We believe each BP project and each of our operations has the potential to benefit local communities by creating jobs, tax revenues and opportunities for local suppliers" (BP 2011, 39). In the next year, BP's 2011 Sustainability Report includes "We are committed to complying with tax laws in a responsible manner both to shareholders and governments, effectively managing tax risk and engaging in honest and constructive relationships" (BP 2012, 44).

To examine the socially responsible tax disclosures, we capture firms' messages to stakeholders about their view of tax, applying textual analysis to a comprehensive, worldwide sample of 2,981 CSR reports across 22 countries, which to the best of our knowledge is the largest sample of CSR reports to-date analyzed in a tax setting. Our initial sample includes all CSR reports that are part of the GRI Sustainability Disclosure Database published between 2008 and 2017.[4] We focus on multinational, listed firms and require reports to be separate CSR reports with extractable content in English.[5] We employ a self-made Python program to assess tax disclosures in CSR reports. To identify socially responsible tax disclosures, we create a collection of keywords that capture whether firms highlight their tax payments as beneficial to society and emphasize efforts to be a socially responsible taxpayer. We then use logit regressions to examine how firms' level of tax avoidance and their environmental performance affect tax disclosures.

After controlling for country-, firm-, and report-level differences, we find that socially responsible tax disclosures are not influenced by tax avoidance in our global sample. In contrast, environmental performance is negatively associated with the likelihood of firms including such disclosures, suggesting socially responsible tax disclosures are used to generate reputational capital and deflect from irresponsible environmental behavior. Interestingly, in further tests distinguishing firms from the liberal market economies United States, Canada, and Australia and the other countries, we find a positive association between tax avoidance and the likelihood of including socially responsible tax disclosures, suggesting firms from liberal market economies use tax disclosures in CSR reports to green-wash their tax avoidance behavior, whereas other firms do not engage in such a practice. Several

[4] http://database.globalreporting.org/.

[5] We require separate CSR reports to avoid confounding financial tax disclosures with CSR-related tax disclosures. Therefore, we exclude CSR information that is part of a financial report such as a financial (annual) report with a CSR chapter or an integrated report. We focus on English reports due to textual analysis constraints. In particular, it is impossible to translate the keyword dictionary for 22 countries without losing appropriate context. In addition, English is the common language for corporate reporting.

robustness tests such as modifications of key words to measure socially responsible tax disclosures or exclusions of CSR reports with financial content support our findings.

We further explore the use of socially responsible tax disclosures by separately examining disclosures that portray firms' tax payments as a contribution to society and disclosures that describe a firm's policy and plans to be a socially responsible taxpayer. We argue that the former is a more symbolic disclosure because listing a firm's tax payment as a contribution to society does not require an actual strategy to engage in socially responsible tax practices and can be made ex-post to manage their reputation. We find our results are attributed to the symbolic contribution disclosures, supporting our conclusion that firms use socially responsible tax disclosures to green-wash and deflect from CSR performance.

We contribute to prior literature in several ways. First, we provide an extensive, worldwide picture of firms' discussions of tax and CSR within CSR reports, complementing prior studies that use hand-collected data (e.g., Davis et al. 2016). While prior literature on the association between tax and CSR employ aggregated measures of tax performance and CSR (e.g., Hoi, Wu, and Zhang 2013; Inger and Vansant 2019; Lanis and Richardson 2018; Watson 2015), we take the literature in a new direction by including firm provided CSR tax disclosures in our analysis. To our knowledge, our study is the first to examine the use of tax disclosures in CSR reports in the context of generating reputational capital, building upon the view that paying tax is socially responsible (Avi-Yonah 2009**,** 2014; Sikka 2010, 2013; Hasseldine and Morris 2013; Dowling 2014).

Second, we add to the controversial discussion about whether CSR reporting is driven by green-washing motives (Clarkson, Li, Richardson, and Vasvari 2008). We find that firms from liberal market economies use socially responsible tax disclosures to offset reputational costs arising from corporate tax avoidance, whereas other firms do not appear to engage in this behavior. While prior studies find evidence that firms use CSR reporting to offset poor performance within the same CSR area (Brown and Deegan 1998; Cho and Patten 2007; Cho,

Roberts, and Patten 2010), we provide evidence that firms' CSR reporting decisions are also impacted by CSR performance in *other areas*.

Third, we advance an emerging methodology in the tax and accounting arena (Loughran and McDonald 2016; Law and Mills 2015): textual analysis. Specifically, we develop and test a comprehensive set of targeted tax search terms and keywords to extract tax-related content from CSR reports and to identify socially responsible tax disclosures. Our methodology also answers a call in Tausczik and Pennebaker (2010) for expansion of textual analysis techniques to specific research programs. Future research can use our search terms and keyword collection to identify tax-related text in other contexts.

Finally, our results have practical implications related to CSR reporting. Socially responsible tax disclosures in CSR reports appear to be symbolic, on average, and driven by reputational concerns. Regulators and organizations dedicated to CSR reporting should consider the strategic use of these disclosures in their standard development process. Moreover, these findings should be of interest for the readers of CSR reports.

The rest of the paper is organized as follows: Section 2 discusses prior literature and develops our hypotheses. Next, we describe the sample selection (Section 3), and the research design (Section 4). Section 5 presents the results.

II. PRIOR LITERATURE AND HYPOTHESES

CSR and Reputational Capital

A large body of literature includes empirical examples of CSR *performance* creating insurance-like protection by mitigating negative consequences (Godfrey et al. 2009; Lins, Servaes, and Tamayo 2017; Hong, Kubik, Liskovich, and Scheinkman 2019; Col and Patel 2019). Surveys of corporate executives (KPMG 2013, 2011) suggest managers also use CSR *reporting* to build reputational capital. Recent studies provide empirical evidence of this reputational capital benefit from CSR *reporting.* Christensen (2016) finds firms engaging in

CSR reporting suffer less negative stock price reactions to high-profile misconduct than firms not reporting on CSR activities. Zhang et al. (2020) show that restating firms that engage in CSR reporting experience smaller losses in firm value than restating firms that do not provide CSR reports. These studies demonstrate that firms can gain reputational capital from CSR reporting.

Godfrey et al. (2009) highlight the importance of considering *when* shareholders gain from CSR initiatives instead of solely focusing on *how*. According to their study, CSR provides greater benefits (i.e., returns) when the firm experiences a reputation challenging event. For example, Chakravarthy et al. (2014) find the announcement of community-oriented actions are value increasing in the period after a serious restatement (i.e., irregularity), whereas these activities are value destroying for non-restating firms. Thus, firms should be more likely to use CSR reporting to provide good news about the firm when facing reputational challenges. Prior literature provides evidence consistent with this argument. Specifically, firms use environmental disclosures to portray a commitment to the environment when actual environmental performance is poor (e.g. Brown and Deegan 1998; Cho and Patten 2007; Cho et al. 2010).

However, as with all types of voluntary disclosure, there are potential costs to CSR reporting including disclosures of proprietary or competitive information and the costs of acquiring, summarizing, interpreting, and disseminating performance metrics. Also, there are costs to disclosing inaccurate CSR information including litigation[6] surrounding CSR reports and restatements of such reports (Backof et al. 2019). The variance in the existence, content, type, and quantity of CSR disclosures by firms suggests firms weigh the potential benefits

[6] In re BP PLC, Sec. Litig., No. 4:12-cv-1256 (S.D. Tex. Sept. 30, 2013); Campbell v. Chiquita Brands Int'l, No. 15-cv-02860 (C.D. Cal. Apr. 17, 2015); In re Massey Energy Sec. Litig., 883 F. Supp. 2d 597 (S.D. W. Va. 2012); Nike v. Kasky, 539 U.S. 654 (2003).

(including reputational capital) against the costs to make the decision about disclosing CSR information.

We consider two ways in which firms use their CSR reporting to build reputational capital. First, firms use CSR reporting to convey their CSR performance. In conveying this performance, they seek to build reputational capital by engaging in "green-highlighting". Green-highlighting involves disclosing substantive actions to signal to stakeholders a commitment to CSR and present an image of socially responsible behavior (Walker and Wan 2012). Green-highlighting does not suggest any disingenuous or false disclosure, but rather represents an advertisement of legitimate good behavior.

In contrast, firms may instead build reputational capital by engaging in "green-washing". Green-washing entails posing as good corporate citizens with disclosures about symbolic or superficial "good" behavior in order to influence stakeholders, without the associated substantive good behavior. "Green-washing" occurs when companies strategically engage in symbolic communications of CSR issues without substantial action to address such issues (Walker and Wan 2012).[7] Prior work has largely focused on green-washing of a company's environmental performance (Brown and Deegan 1998; Cho and Patten 2007; Cho et al. 2010; Roulet and Touboul 2015; Walker and Wan 2012), but the concept can be applied to other types of CSR activity as well.

Socially Responsible Tax Disclosures and Reputational Capital

Prior literature supports the view that paying tax is an important aspect of corporate citizenship (Avi-Yonah 2009, 2014; Sikka 2010, 2013; Hasseldine and Morris 2013; Dowling 2014). This view is echoed by the OECD (2011), which expresses the importance of corporate tax payments to government programs that improve social welfare. Further, the UN Global Compact (PRI 2015, 5) highlights firms' tax payments as a "vital investment in the local

[7] According to Walker and Wan (2012), the key difference between the two terms is that with green-highlighting, the "use of symbolic action is backed by substantive actions" (232).

infrastructure, employee-base and communities in which they operate". Recent guidance from the GRI suggests that taxes "are central to the fiscal policy and macroeconomic stability of countries" (GRI 2019, 4). The idea that corporate taxes are an important contribution to society suggests paying tax is a socially responsible activity and has the potential to build reputational capital. Godfrey et al. (2009) distinguish "institutional CSR" activities, that is, those aimed at firm's secondary stakeholders or society at large, from CSR activities targeting primary stakeholders (i.e., trading partners). They find that "institutional CSR" provides an insurance-like benefit to protect reputation, whereas CSR activities targeting primary stakeholders do not. Since paying tax generally benefits society at large, it would reflect "institutional CSR" and related disclosures should be useful to offset unacceptable behavior.

In fact, recent experimental work shows firms with socially responsible tax strategies can gain reputational benefits with both consumers and investors. In two experiments, Hardeck and Hertl (2014) and Hardeck et al. (2019) show that firms aiming to pay their "fair share" of tax and not engaging in aggressive tax planning benefit from more positive CSR perceptions and reputational gains among consumers. Similarly, Davis et al. (2020) provide experimental evidence that investors view firms with higher effective tax rates as more socially responsible. Emerson et al. (2020) find comparable results for nonprofessional investors in a Chinese setting. Consistent with these experimental findings on the relationship between tax avoidance and CSR perceptions, prior archival literature shows that tax avoidance is associated with reputational costs (Graham et al. 2014; Austin and Wilson 2017; Dyreng et al. 2016; Dhaliwal et al. 2017). While disclosures about socially responsible tax behavior in a CSR report have the potential to create reputational capital, as with other CSR disclosures, they are not costless – especially in the case of green-washing. As previously mentioned, inaccurate CSR information (Backof et al. 2019) can lead to negative consequences.

Hypotheses

We explore two possible determinants of the decision to disclose socially responsible tax behavior (Figure 1). First, we posit firms' tax avoidance behavior (performance) influences whether they choose to include socially responsible tax disclosures in their CSR reports. We expect that firms will include socially responsible tax disclosures in CSR reports if the expected gains of reputational capital exceed the costs of disclosure, a scenario that likely depends on the firm's tax avoidance activities. On the one hand, low tax-avoiding firms could use green-highlighting to advertise substantive socially responsible tax behavior to maximize reputational benefits, while high tax avoiders might refrain from discussing an area of "poor" CSR performance. This prediction implies the benefits (costs) of disclosing socially responsible tax information are greater (lower) for low tax avoiders, and therefore low tax avoiders are more likely to include such disclosures in CSR reports.

[Insert Figure 1 about here]

On the other hand, Godfrey et al. (2009) argue that firms have greater incentives to engage in CSR reporting when encountering a reputational challenge. High tax avoiders facing reputational costs (Graham, Hanlon, Shevlin, and Shroff 2014; Austin and Wilson 2017; Dyreng, Hoopes, and Wilde 2016; Dhaliwal, Goodman, Hoffman, and Schwab 2017) may be more likely to green-wash their tax behavior by disclosing symbolic tax behavior that lacks substance. This prediction implies the net benefits of disclosing socially responsible tax information are greater for high tax avoiders, and therefore this group is more likely to include socially responsible tax disclosures in its CSR reports. This is consistent with Lanis and Richardson (2013) who find that tax aggressive firms in Australia have more CSR disclosures in their annual report than non-tax aggressive firms.

In summary, there are arguments in support of both a positive and a negative association between tax avoidance and socially responsible tax disclosures. A positive (negative) association suggests firms use socially responsible tax disclosures as a green-

washing (green-highlighting) tool. The extent of tax disclosures in required financial reports reduces the need (and possibly the benefits) for low tax avoiders to provide disclosures of their tax performance in order to gain reputational benefits ("green-highlighting"). At the same time, these required tax disclosures in financial reports highlight the "socially irresponsible" behavior of high tax avoiders, thereby increasing the incentives for high tax avoiders to use CSR disclosures to counter the reputational costs of tax avoidance (green-washing). Further, the wealth of evidence regarding green-washing of environmental performance (Gatti, Seele, and Rademacher 2019) suggests the practice is not likely restricted to only one area of CSR, but could also be used in the area of taxes. As such we predict firms will engage in green-washing behavior surrounding their tax disclosures in CSR reports.

H1: Tax avoidance is positively associated with socially responsible tax disclosures in CSR reports.

If managers view socially responsible tax disclosures as reputation-building, they will also be likely to use these disclosures to mitigate reputational challenges arising from poor performance in other areas of CSR. That is, firms could use tax disclosures to deflect from other CSR areas where performance is poor. In this paper, we focus on tradeoffs between tax disclosures and poor environmental performance, a highly salient area of CSR (Berthelot et al. 2003; Marquis et al. 2016). In contrast to studies finding environmental green-washing (Brown and Deegan 1998; Cho and Patten 2007; Cho et al. 2010), in an international setting, Marquis et al. (2016) demonstrate firms are *less* likely to engage in selective environmental CSR disclosures when environmental performance is poor. The high salience on environmental issues stemming from poor performance heightens the reputational costs of selective environmental disclosures. Additionally, the costs of misreporting could deter managers from making disclosures about symbolic or superficial environmental performance to green-wash poor environmental performance. As an alternative strategy, firms can use disclosures about one area of CSR, such as socially responsible tax disclosures, to deflect

from another area – in this case unacceptable environmental performance -- in order to build or repair reputational capital. In other words, firms can use socially responsible tax disclosures as either an alternative or a supplement to environmental green-washing. Therefore, the second determinant of socially responsible tax disclosures that we explore is a firm's environmental performance.

Two recent studies support the idea of strategic trade-offs between the CSR areas of tax and the environment. However, different from our study that examines disclosures of socially *responsible* tax behavior, they shed light on environmental disclosure or performance to mitigate adverse consequences of socially *irresponsible* tax behavior. For example, E. Fallan and L. Fallan (2019) show that firms in Norway voluntarily disclose environmental information in order to offset the negative effects of "poor" tax performance (i.e., tax aggressiveness). Inger and Stekelberg (2020) find tax avoidance derived from renewable energy tax credits imposes a value premium on firms other sources of tax avoidance. Apparently, investing in renewable energy and thus supporting a good environmental cause (partly) offsets decreases in reputational capital due to tax avoidance.

In summary, we posit that the benefits of reputational capital derived from socially responsible tax disclosures are higher when another aspect of CSR performance is poor. Thus, we predict managers make strategic trade-offs surrounding tax disclosures in CSR reports based on their environmental performance.[8]

H2: Environmental performance is negatively associated with socially responsible tax disclosures in CSR reports.

We expect the relationship between socially responsible tax disclosures in CSR reports and tax avoidance (H1) and environmental performance (H2), respectively, to vary across

[8] We are agnostic as to whether the tax disclosures used to deflect from poor environmental performance represent green-highlighting based on substantive socially responsible tax behavior or green-washing using disclosures of only symbolic or superficial tax behavior.

countries. The *Varieties of Capitalism* framework (Hall and Soskice 2001) identifies two main types of economies: liberal and coordinated market economies. In liberal market economies (e.g., Australia, Canada, and United States), firms tend to use hierarchies and competitive market arrangements to coordinate their business activities. In coordinated economies (e.g., Germany, Japan, and Sweden), non-market relationships are more relevant to coordinate firms' activities with other actors. Consequently, coordination is based on collaborative instead of competitive relationships. Chen and Bouvain (2009) posit that these institutional differences have an impact on firms' engagement in CSR. Similarly, Matten and Moon (2008) argue that the nature of economic systems influence firms' engagement in CSR. According to Campbell (2006), corporations tend to engage more in CSR as they are increasingly regulated by the state or collective industrial self-regulators. By contrast, it is often assumed that firms in liberal market economies will be more likely to practice green-washing (Roulet and Touboul 2015). Lim and Tsutsui (2012) argue that in more liberal economic systems with more competitive and individualist societies, firms are more likely to use symbolic instead of substantial CSR actions. In this regard, scholars (Prechel and Morris 2010; Jones and Nisbet 2011) emphasize that liberal economic systems induce firms to anticipate criticism and build reputational capital with impression management tactics, which is facilitated by less institutionalized environments (Julian and Ofori-Dankwa 2013). We expect that if firms from liberal market economies are more likely to build reputational capital by green-washing they are also more likely to use socially responsible tax disclosures to build reputational capital and deflect from poor performance in other areas.

We put forth the following hypotheses:

H3a: The association between tax avoidance and socially responsible tax disclosures in CSR reports is more positive for liberal market economies.

H3b: The association between environmental performance and socially responsible tax disclosures in CSR reports is more negative for liberal market economies.

III. SAMPLE SELECTION

When creating our sample, we rely on the comprehensive GRI Report List as provided by the GRI Sustainability Disclosure Database in 2018 (GRI 2018a).[9] Reports included can be stand-alone CSR reports, financial reports that include a CSR chapter, or fully integrated reports. Adherence to the GRI Standards is not a requirement for companies to register their reports on the website. Appendix A1 gives a graphic overview of how we created the sample based on the database. Table 1 presents our sample attrition.

[Insert Table 1 about here]

We start with the complete list of reports published between 2008[10] and 2017 and filter for large, multinational, listed enterprises (9,578 reports). We require reports to be PDFs with extractable text in English. To gather the sample we create a Python program that downloads the PDF reports and extracts the text. After an additional manual search, our sample consists of 5,806 reports. Appendix A2 explains in detail how we gather and test reports with CSR information and how we extract and process the text.

We require firm-years to have ESG pillar scores from Refinitiv.[11] We focus on stand-alone CSR reports, which is necessary to distinguish CSR-related tax reporting from (mandatory) financial tax reporting according to U.S. GAAP (ASC 740), IFRS (IAS 12), or any local GAAP. We drop observations with three consecutive years of negative pre-tax income (to calculate our tax avoidance measure) and observations missing the required financial variables from COMPUSTAT NA or COMPUSTAT Global. Appendices A3-A5

[9] The GRI has developed the most popular CSR reporting standard with 89 percent of the largest 250 firms voluntarily reporting according to the GRI Standards in 2017 (KPMG 2017). Organizations self-register their reports on the GRI website to gain additional exposure for their report and highlight their CSR performance. When registering the report, organizations provide additional information about the company, their report, and often a link to the report. In October 2018, the database included nearly 50,000 reports.

[10] CSR reporting was less standardized before 2008 and firms often published several nonfinancial reports such as an environmental and a social report. Since we rely on the publication year 2008, a CSR report from the year 2007 would be included if it is published in 2008 or later.

[11] Refinitiv (2020) offers one of the most comprehensive ESG databases and covers over 70% of global market capitalization across more than 450 different ESG metrics.

provide the details behind each of these steps. Lastly, we drop observations from countries with less than 5 distinct firms. Our final sample consists of 2,981 CSR reports by 816 firms.[12]

IV. RESEARCH DESIGN

Model

We estimate the following logit model for socially responsible tax disclosures (SRTD):

$$SRTD_{it} = level\ of\ tax\ avoidance_{i,t} + environmental\ performance\ score_{i,t} + report\text{-}level\ controls_{i,t} + firm\text{-}level\ controls_{i,t} + country\text{-}level\ controls_{t} + year\ fixed\ effects + \varepsilon_{it.}$$

Socially Responsible Tax Disclosures Variable (SRTD)

We begin by first identifying reports that discuss taxes. We examine the reports for keywords that signal a tax-related context (i.e., inclusion words). Given that some inclusion words such as "tax" can be used in multiple ways that are unrelated to actual tax reporting (e.g., taxi, earnings before interest and taxes, pre-tax income), we create a list of 24 exclusion words or phrases. Our search method thus ignores the occurrence of an inclusion word if it corresponds to an exclusion word. To create our word lists, we employ a multi-step approach as outlined in Appendix B1. The process is similar to Chen, Schuchard, and Stomberg (2019), who created search strings to identify relevant tax media coverage in Factiva. Then, we extract the context of each relevant hit, that is, a text window of a fixed set of characters to the left and right of the inclusion word.[13] As is common in textual analysis (Pennington, Socher, and Manning 2014), we extract a text window of all words within 50 characters to the left and right.[14]

[12] Since CSR reporting is generally voluntary and less regulated, reports cover different time periods. If the report title includes a year (two years), we assign the report to the (second) year mentioned. For the remaining cases, we assume that the reporting year is one year prior to the publication year, which is consistent with our manual inspection of reports.

[13] Figures and tables were included as long as the text was extractable by PDFMiner.

[14] In general, textual analysis relies on windows of 10-20 words, which is similar to 40-100 characters. Our manual inspections of text windows confirmed that +/-50 characters is an appropriate choice.

In the next step, we aim to identify CSR reports that include socially responsible tax disclosures. Tax windows comprise a wide array of discussions. We define socially responsible tax disclosures as those (1) describing the positive impact of tax payments on society (PORTRAYAL) and (2) firm-level policies to ensure that the firm is a socially responsible taxpayer (POLICIES).[15] In the first category, firms could emphasize the positive impact of taxes on society, local communities, or the economy or portray the firm's role as a taxpayer or the firm's tax payments as part of its CSR activities (PORTRAYAL). An example of this type of view is Commonwealth Bank of Australia's 2017 CSR report: "Our global tax expense was more than $3.9 billion, and goes back into the community in many forms including schools, hospitals, roads and social welfare payments" (Commonwealth Bank 2017, 42).

The second category includes policies to ensure that a firm is a socially responsible taxpayer beyond mere compliance (POLICIES). Policies can comprise renouncing the use of aggressive forms of tax avoidance (e.g., avoiding tax havens), being more transparent or co-operative with tax authorities than required by the law, the intent to pay a "fair share" of taxes, or supporting non-governmental organizations in the tax arena. As an example of such a disclosure, SSE's 2016 CSR report states, "Paying a fair share of tax – Since 2014, SSE has remained the only FTSE 100 company with the Fair Tax Mark, an independent stamp of approval for businesses that proactively demonstrate they pay the right amount of tax, in the right place, at the right time" (SSE 2016, 13).

We create a tax-specific custom dictionary to identify instances of socially responsible tax disclosures within our sample of tax related text windows. In a rigorous iterative process, we manually generate and validate a set of 33 keywords reflecting PORTRAYAL or POLICIES (see Appendix B2 for details on that process), similar to the method used by

[15] Purely financial information that replicates information from annual reports neither provides additional (voluntary) transparency nor a commitment to taxes as being socially responsible.

Tausczik and Pennebaker (2010) to create the Linguistic Inquiry and Word Count (LIWC) program. The use of custom dictionaries is a common method in accounting research (e.g., Chen et al. 2019; Kuhnen and Niessen 2012). We employ our socially responsible tax disclosure variable SRTD equal to one if at least one keyword for PORTRAYAL or POLICIES was mentioned in the report and zero otherwise. We rely on a binary variable rather than a continuous score given the positive skewness and the high number of zeros.

Tax Avoidance

As noted by Kanagaretnam, Lee, Lim, and Lobo (2018), the data constraints of an international setting prevent the use of many popular tax avoidance measures used in U.S.-only settings. Therefore, we adopt the measure used in Atwood, Drake, J. N. Myers, and M. S. Myers (2012) and Kanagaretnam et al. (2018), both of which use international samples and take into account differing statutory tax rates between countries and over time. TAXAVOID is the difference between the tax on pre-tax income before exceptional items computed at the home-country statutory tax rate and the current tax expense. The difference is then divided by pre-tax income. We calculate the measure using a rolling three-year window, and we drop firms with a cumulative loss over the last three years following Atwood et al. (2012).

Environmental Performance

We measure firms' environmental performance by means of the "pillar score" ENSCORE as provided by Refinitiv. The score determines a company's relative performance, commitment, and effectiveness across three main themes based on publicly-reported data: emission, innovation, and resource use (Refinitiv 2020). Examining information provided by the firm itself (annual reports, CSR reports, website, and stock exchange filings) and NGOs, as well as news sources, Refinitiv captures multiple different firm-level environmental measures. To account for industry differences in materiality, subsets of these datapoints are selected for each industry and the themes' weighting is adjusted on an industry basis. The

final scores are based on relative performance within a firm's industry. They are presented in percentile rank scores ranging from 0 to 100.

Liberal Market Economies

To classify countries as liberal market economies, we follow the *Varieties of Capitalism* framework by Hall and Soskice (2001). We deviate from their classification of the United Kingdom as liberal market economy for our research for two reasons. Matten and Moon (2008) theorize that European firms' CSR practices reflect wider policy arrangements but they are more implicit insofar as few specific corporate claims are made. Consequently, the United Kingdom should be closer to continental European countries (i.e., non-liberal market economies) in terms of their CSR activities and disclosure. More specific to our research, the United Kingdom is characterized by high public scrutiny when it comes to corporate tax avoidance. For instance, Dyreng et al. (2006) illustrate a setting where high public scrutiny pushes firms to correct their inaccurate reporting on tax haven subsidiaries. Consequently, we expect high costs of inaccurate information prevent firms form providing inaccurate information.

From our sample, the United States, Canada, and Australia are considered as liberal market economies (LME). To assess whether the association between SRTD and TAXAVOID (ENSCORE) is more positive (negative) for liberal market economies, we create the moderating variables LME*TAXAVOID (LME*ENSCORE). In addition, we run sample splits based on LME and conduct Chi2-tests to whether coefficients on TAXAVOID (ENSCORE) are significantly different between the samples.

Control Variables

We use four sets of control variables: report-level controls, firm-level controls, country-level controls, and year fixed effects.

At the report level, we control for adherence to GRI Standards (GRI_ADHERE), which could be associated with viewing tax as beneficial to society as well as disclosing tax

payments as economic value distributions.[16] External assurance (ASSURANCE) is a binary variable, equal to one if the report was externally assured and zero otherwise. Simnett, Vanstraelen, and Chua (2009) find firms use external assurance to enhance the credibility of their reports and achieve reputational benefits. Furthermore, because of an obvious correlation between disclosure and length (Dhaliwal, Li, Tsang, and Yang 2011), we control for report length (REPLENGTH) measured as the natural log of the report's total words.

At the firm level, we control for firm size using the log of total assets in U.S. dollars (SIZE), return on assets (ROA), and leverage (LEV), calculated as long-term debt, scaled by total assets. To maximize the sample, we set long-term debt to zero if the data are missing (Dyreng and Lindsey 2009). These three financial variables are frequently considered determinants of the quantity and quality of CSR disclosures (Hahn and Kühnen 2013; Dienes, Sassen, and Fischer 2016). We additionally control for firms' social (SOSCORE) and corporate governance (CGSCORE) performance as provided by Refinitiv to capture other dimensions of CSR performance besides environmental performance.[17] Given an association between voluntary tax disclosure and industry affiliation (Hardeck and Kirn 2016), we also include industry fixed effects (INDUSTRY) using the Fama and French 17-industry classification scheme (Fama and French 1997).

At the country level, we control for two time-varying characteristics. We include GDP per capita as measure for the economic development of the respective country over time. GDP

[16] GRI Standards suggest that companies indicate their economic contribution, and they specifically mention payments to governments (GRI 2016b, disclosure 201-1). The GRI Standards also direct firms to disclose any tax relief or subsidies received from governments (GRI 2016b, disclosure 201-4). Because of these rules, the use of the GRI Database could bias our results towards finding more tax disclosures and towards a predominant view of tax as a contribution to society (complements). However, only about 64.3 percent of all CSR reports in our sample adhere to the GRI Standards (Table 2), which is less than the adherence rate among the largest 250 firms (KPMG 2017). Consequently, our sample is not over-represented by GRI-adhering firms, alleviating the concern that our results are biased by the use of the GRI database as our sample source. In addition, we control for GRI adherence in our regression analyses.

[17] With regard to the measurement of these scores, we refer the reader to our description of ENSCORE. Different from ENSCORE and SOSCORE, the final CGSCORE is based on relative performance within a firm's country of incorporation and not industry. SOSCORE covers the themes of human rights, product responsibility, workforce, and community. CGSCORE captures management, shareholders, and CSR strategy.

per capita is measured as the natural log of purchasing power parity in international dollars using the World Economic Outlook Database (October 2018) by the International Monetary Fund (IMF). To control for the tax ratio in a country and its potential impact on firms' tax disclosures, we account for the total tax revenue divided by the GDP as provided by the IMF (REVENUE). Finally, we use country fixed effects to control for time invariant differences between countries such as national culture (Alesina and Giuliano 2015; Guiso, Sapienza, and Zingales 2006), attitudes such as tax morale, and the economic system. Appendix C summarizes all variables.

V. RESULTS

Descriptive Evidence

Table 2 provides summary statistics for our sample. 25.5 percent of our sample reports contain socially responsible tax disclosures (SRTD). The average firm in our sample has a current tax expense that represents a deviation of 6.6 points from the statutory tax rate (TAXAVOID). The mean environmental performance score is 60.0 (ENSCORE). Given that this Refinitiv score is a percentile rank within the firm's industry, this means the average firm in our sample performs better than the population median in terms of environmental behavior. About 44.9 percent of firm-year observations in our sample are in the liberal market economies United States, Canada, and Australia and more often include socially responsible tax disclosures in their CSR reports (29.6 percent vs. 22.9 percent, p=0.000).

[Insert Table 2 about here]

Regression Analyses

Hypotheses Tests. Table 3 presents results of our regression analyses for the impact of tax avoidance (H1) and environmental performance (H2) on the likelihood of firms including socially responsible tax disclosures in their CSR reports. As shown in column (1), although directionally consistent with our expectation, tax avoidance is not significantly positively

associated with the likelihood of socially responsible tax disclosures (coeff=0.174, p=0.577).[18]

[Insert Table 3 about here]

As shown in Table 3, column (1), environmental performance (ENSCORE) is negatively associated with firms providing socially responsible tax disclosures (coeff=–0.013, p=0.007). Consistent with H2, this result suggests firms with higher levels of environmental performance are less likely to use socially responsible tax disclosures to build or repair reputational capital. In contrast, firms with low environmental performance seeking to boost their reputation by focusing on other CSR areas are more likely to include socially responsible tax disclosures to deflect from their poor environmental performance.

In column (2) of Table 3, we replace tax avoidance with binary variables for those observations in the top quartile and the bottom quartile ("TAXAVOID_HIGH" and "TAXAVOID_LOW") to examine whether results are concentrated in one particular subset of firms. It could be the case that low avoiders green-highlight and high avoiders green-wash, with the effects offsetting each other and preventing us from finding a significant result. However, neither variable is significant at conventional levels.[19]

In column (3) of Table 3, we replace the environmental score with binary variables for those observations in the top quartile and bottom quartile ("EN_HIGH" and "EN_LOW") to examine whether results are driven by a subset of firms. We find a negative (positive) and significant association between high (low) environmental performance and SRTD, which

[18] Consistent with TAXAVOID being based on three-year current ETR, our results are robust to using a current ETR measure instead of TAXAVOID. Our results are also robust to using an industry adjusted measure of TAXAVOID where we subtract the industry-year median from each observation's value of TAXAVOID.
[19] We tested further for non-linear relationships such as using a quadratic term for TAXAVOID and conducting spline regressions (untabulated). We do not find any significant results.

suggests our results are not attributable to only one particular group of high or low-performing firms.[20]

Results of Control Variables. As shown in Table 3, we find longer reports (REPLENGTH) are more likely to include SRTD. Firms that adhere to GRI Guidelines (GRI_ADHERE) are also more likely to include SRTD. This finding is consistent given that these standards recommended firms to highlight their tax contribution to society during our sample period. Similarly, reports that are externally assured (ASSURANCE) are more likely to include SRTD. This finding is plausible because third-party auditors assure these reports against some set of standards, often the GRI standards. Larger firms (SIZE) and more highly leveraged firms (LEV) are more likely to include SRTD, perhaps because of increased stakeholder pressure. Country GDP is negatively associated with SRTD, which suggests that with increasing economic prosperity tax payments as a means to foster public welfare become less relevant.

Table 4 presents results of our regression analyses examining whether the association between socially responsible tax disclosures and tax avoidance (environmental performance) is more positive (negative) for firms in liberal market economies in order to test H3a (H3b). Consistent with H3a, we find a negative and significant coefficient on the interaction between LME and TAXAVOID (coeff.=1.052, p=0.095), providing evidence that firms in liberal market economies are more likely to engage in green-washing. Regarding H3b, we find the coefficient on ENSCORE remains negative and significant (coeff.=-0.012, p=0.038), whereas the coefficient interaction of ENSCORE and LME is not significant (coeff.=-0.003, p=0.649), suggesting firms in liberal market economies are not more likely to deflect from poor

[20] In an untabulated analysis, we also decompose the social score (SOSCORE) and the corporate governance score (CGSCORE) into high/low measures. In this specification, we continue to find a negative (positive) association between high (low) environmental performers and SRTD.

environmental performance with socially responsible tax disclosures. H3b is thereby not confirmed.

Next we decompose our global sample into firms in liberal market economies (column 2) and non-liberal market economies (column 3). We find evidence consistent with column (1). Specifically, in column (2) the coefficient on TAXAVOID is positive and significant (coeff=1.019, p=0.054) and the coefficient on ENSCORE is negative and significant (coeff.=-0.019, p=0.017), suggesting firms in liberal market economies engage in both green-washing tax avoidance and deflecting from poor environmental performance with socially responsible tax disclosures. In column (3), we find no evidence that firms in non-liberal market economies engage in green-washing with socially responsible tax disclosures (coeff.=-0.288, p=0.566), whereas they do deflect from poor environmental performance with such disclosures (coeff.=-0.011, p=0.088). Consistent with our findings in the moderation analysis, the coefficients on TAXAVOID are significantly different between the samples (chi2(1) = 3.55, p = 0.059), whereas those on ENSCORE are not (chi2(1) = 0.71, p = 0.400). Although conditions in non-liberal market economies restrain green-washing, it does not appear to mitigate the strategy of deflecting from poor performance in one area of CSR with disclosures concerning another area of CSR.

[Insert Table 4 about here]

Supplemental Analyses

In Table 5 we decompose our SRTD measure into our two categories of socially responsible tax disclosures to investigate whether results can be primarily attributed to one of these categories. We argue that PORTRAYAL is a more symbolic type of disclosure because firms frame their tax payments as good for society without presenting a clear policy about how to be socially responsible in the tax arena. For each measure, we provide results on the global sample, the LME sample, and the non-LME. sample.

[Insert Table 5 about here]

Consistent with the results of our hypothesis tests, we do not find that firms' tax behavior influences their socially responsible tax disclosures (either PORTRAYAL or POLICIES) in the global sample (Table 5, columns 1 and 4). As one would expect, disclosures highlighting a firm's tax contribution to society (PORTRAYAL) drive our H1 result that tax avoidance is positively associated with SRTD in liberal market economies (Table 5, column 2, coeff=1.101, *p*=0.004). In other words, firms with higher tax avoidance are more likely to use this particular, symbolic type of disclosure to green-wash their irresponsible tax behavior but are not any more likely to use POLICIES-type disclosures to do so (Table 4, column 5). It is not surprising that the decision to include disclosures reflective of the POLICIES theme is less driven by a reputational need (i.e. tax avoidance behavior). Instead, given the costs of disclosing information that is ultimately found to be untrue or exaggerated, this decision is more likely driven by whether the company has deliberately engaged in such efforts by establishing a socially responsible tax strategy prior to the writing of the CSR report. On the other hand, merely highlighting the firm's tax payments, and portraying them as a contribution to society, is a disclosure a company can make ex-post to manage its reputation. Thus, POLICIES may be a better measure of socially responsible tax *behavior* whereas PORTRAYAL is limited to a symbolic disclosure.

With regard to H2, this decomposition also reveals that the PORTRAYAL category primarily drives our finding that environmental performance is negatively associated with SRTDs. Specifically, we find that good (poor) environmental performers are less (more) likely to include disclosures about their tax contribution to society (PORTRAYAL) in the global sample (column 1, coeff=–0.016, *p*=0.001), the LME sample (column 2, coeff=–0.022, *p*=0.003), and the non-LME sample (column 3, coeff=-0.012, *p*=0.076). We do not find any association between environmental performance and POLICIES disclosures in any of the samples (columns 3-5). This set of results is consistent with our findings related to tax

avoidance (H1) that firms appear to use PORTRAYAL-type disclosures, but not POLICIES-type disclosures, to build reputational capital when they face reputational challenges.

Next, we use a very broad measure of tax disclosures in CSR reports and create the variable MENTION that is coded one if the CSR report signals a tax-related context (i.e., the report has at least one tax-related hit according to our inclusion words) and do not specifically require socially responsible tax disclosures as measured by our 33 keywords. 1,823 CSR reports (61.2 percent of our sample) include some tax-related information, thereof 41.6 percent are classified as socially responsible tax disclosures. Results are shown in Table 6. We do not find evidence that firms' level of tax avoidance or environmental performance influence the decision to mention taxes in a CSR report in the global sample (columns 1), the LME sample (column 2), or the non-LME sample (column 3). This analysis provides support for our conclusions that firms use tax disclosures intended to convey socially responsible behavior, not just any type of tax disclosure, to build reputational capital against either their tax level of avoidance (H1) or their environmental performance (H2).

[Insert Table 6 about here]

Overall, our results suggest firms use disclosures about their tax contribution to society to manage reputation issues around poor environmental performance, and firms from market economies also use these disclosures to manage reputation issues related to tax avoidance.

Robustness Tests

We conduct several robustness tests, which are shown in Table 7 for the global sample only for brevity. First, we assess the sensitivity of our results to our sample selection. As described in Appendix A4, we utilized a machine learning model to classify our reports as financial or nonfinancial. This program also calculated a confidence for each classification. To test the sensitivity of our results to the classification, we exclude CSR reports which were classified by our program as nonfinancial with a confidence level of less than 75 percent (348 reports) (column 1). Next, to ensure our results are not driven by only one or two popular keywords,

we drop the most frequently occurring keyword for PORTRAYAL and POLICIES (column 2).[21] Last, we test the sensitivity of our results to the specification of ENSCORE. In our main analyses, we measure environmental performance with the level of a firm's environmental performance (ENSCORE) at the end of the year. It is possible that firms not only react to their actual environmental performance but also to a change in their performance. For instance, a firm that experiences a decrease in its performance could be inclined to react to that deterioration by disclosing socially responsible tax information. Therefore, we replace ENSCORE with the change in the score from year t-1 to year t (EN_CHANGE) (column 3). Across all specifications, results are consistent with our main findings that environmental performance is negatively associated with SRTD.

[Insert Table 7 about here]

VI. DISCUSSION

We posit that like other CSR disclosures, socially responsible tax disclosures can build reputational capital. Examining how firms' level of tax avoidance and environmental performance influence these disclosures provides important insights into how managers use CSR disclosures in strategic ways. Using the GRI Sustainability Disclosure Database, we create a sample of 2,981 CSR reports of 22 distinct countries. We use textual analysis and a newly-developed set of keywords specific to the tax setting to determine whether and how firms use socially responsible tax disclosures.

In a multi-variate setting, we find results consistent with the use of socially responsible tax disclosures to deflect from poor environmental performance. Results suggest that firms use the disclosure of one aspect of CSR to green-wash low performance in another area of CSR. In contrast, only firms from liberal market economies use the disclosures to green-wash

[21] For PORTRAYAL, we drop contribut*, for POLICIES, we drop transparen*. When we decompose SRTD into PORTRAYAL and POLICIES and replicate Table 5 excluding these two keywords, we find results consistent with those in Table 5.

their tax avoidance activities. We find the results are attributed to more symbolic disclosures portraying a firm's tax payment as a contribution to society, whereas firms do not appear to use disclosures outlining actual responsible tax policies in strategic ways.

Our study is limited to firms who registered their CSR report on the GRI Database for which an English stand-alone CSR report was available in PDF format. An unavoidable limitation of the sample is that it does not cover the entire population of CSR reports. Future work could use our methodology, including the search terms and the keywords, to further explore tax in a CSR setting using within-country variation, as well as other settings such as firms' earnings announcements, conference calls, media sources, political statements, and other sources that contain tax information. We also look forward to future research examining why firms from liberal market economies use socially responsible tax disclosures to green-wash their tax avoidance, whereas other firms do not.

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Figure 1: Hypotheses

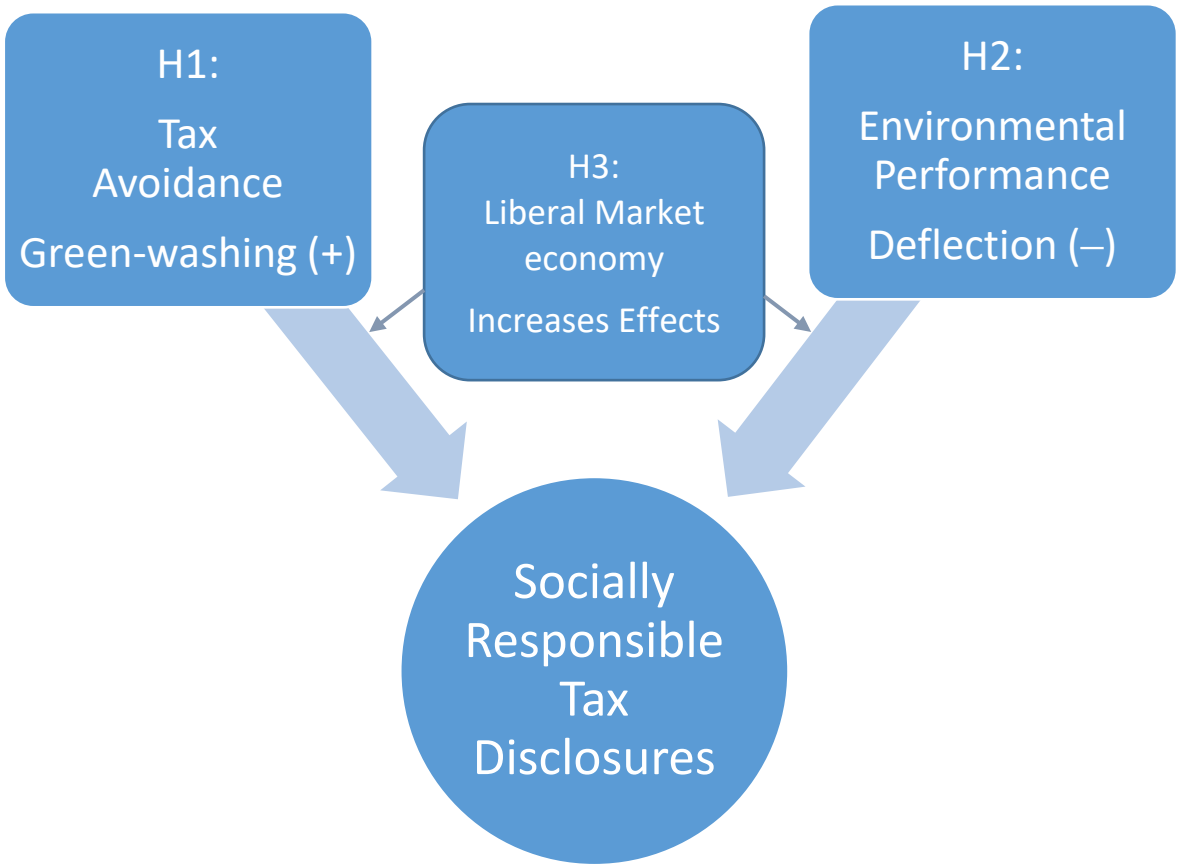


Table 1: Attrition Table

Initial sample	9,578
– Reports not accessible, non-extractable or non-English, duplicates	3,772
= Sample of adequate reports with CSR disclosures	5,806
– Missing ESG scores from Refinitiv	1,686
= Sample of adequate reports with CSR disclosures and ESG scores	4,120
– Financial reports (annual reports with CSR chapter, integrated report)	691
– Firms with losses for the last three years (tax avoidance variable)	250
– Missing Compustat data for tax avoidance variable	162
– Too few firms by country	36
= **Final sample of CSR reports**	**2,981**

Notes: This table presents our sample selection.

Table 2: Summary Statistics

VARIABLE	N	MEAN	SD	P10	P50	P90
SRTD	2,981	0.255	0.436	0.000	0.000	1.000
PORTRAYAL	2,981	0.231	0.422	0.000	0.000	1.000
POLICIES	2,981	0.086	0.280	0.000	0.000	0.000
MENTION	2,981	0.612	0.487	0.000	1.000	1.000
ENSCORE	2,981	60.043	21.472	30.200	62.370	86.060
EN_CHANGE	2,920	0.054	0.241	-0.099	0.015	0.290
TAXAVOID	2,981	0.066	0.230	-0.097	0.076	0.281
LME	2,981	0.449	0.497	0.000	0.000	1.000
REPLENGTH	2,981	9.580	1.112	8.103	9.818	10.726
GRI_ADHERE	2,981	0.643	0.479	0.000	1.000	1.000
ASSURANCE	2,981	0.264	0.441	0.000	0.000	1.000
SIZE	2,981	9.589	1.572	7.704	9.383	11.764
LEV	2,981	0.175	0.124	0.008	0.167	0.346
ROA	2,981	0.084	0.068	0.011	0.070	0.175
SOSCORE	2,981	60.156	21.535	31.070	62.040	87.520
CGSCORE	2,981	62.328	20.777	32.370	65.150	87.770
GDP	2,981	10.683	0.300	10.475	10.695	10.946
REVENUE	2,981	0.326	0.086	0.210	0.315	0.448

Notes: These tables present descriptive statistics for all CSR reports. Financial variables are winsorized at the 1 and 99 percent level. Appendix C summarizes the definition of variables.

Table 3: Socially Responsible Tax Disclosures

VARIABLES	(1) SRTD	(2) SRTD	(3) SRTD
TAXAVOID	0.174		0.166
	(0.577)		(0.597)
TAXAVOID_HIGH		0.053	
		(0.745)	
TAXAVOID_LOW		-0.103	
		(0.476)	
ENSCORE	-0.013***	-0.013***	
	(0.007)	(0.007)	
EN_HIGH			-0.308*
			(0.070)
EN_LOW			0.340*
			(0.065)
REPLENGTH	1.243***	1.244***	1.236***
	(0.000)	(0.000)	(0.000)
GRI_ADHERE	0.480***	0.476***	0.463***
	(0.007)	(0.007)	(0.009)
ASSURANCE	0.397**	0.390**	0.394**
	(0.029)	(0.033)	(0.030)
SIZE	0.264***	0.266***	0.261***
	(0.000)	(0.000)	(0.000)
LEV	1.282*	1.287*	1.242*
	(0.062)	(0.060)	(0.069)
SOSCORE	0.005	0.005	0.003
	(0.435)	(0.431)	(0.647)
CGSCORE	0.003	0.003	0.003
	(0.474)	(0.470)	(0.484)
ROA	1.084	1.156	1.027
	(0.349)	(0.314)	(0.376)
GDP	-6.698**	-6.671**	-6.428*
	(0.046)	(0.044)	(0.061)
REVENUE	-0.625	-0.241	-0.536
	(0.938)	(0.976)	(0.947)
Constant	55.325	54.935	51.842
	(0.134)	(0.131)	(0.169)
Observations	2,981	2,981	2,981
Country FE	YES	YES	YES
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
St. errors clustered	firm level	firm level	firm level
Pseudo R-squared	0.326	0.327	0.326

Notes: This table presents results from logit regressions of SRTD on TAXAVOID, ENSCORE, and control variables. *P*-values are presented in parentheses. *, **, *** indicate statistical significance at the .1, .05, and .01 levels, respectively. All *p*-values are based on two-tailed tests and are calculated based on standard errors that are clustered by firm. Appendix C summarizes the definition of variables.

Table 4: Socially Responsible Tax Disclosures – Liberal Market Economies

	(1)	(2)	(3)
VARIABLES	SRTD	SRTD	SRTD
SAMPLE	GLOBAL	LME	NON-LME
TAXAVOID	-0.199	1.019*	-0.228
	(0.590)	(0.054)	(0.566)
TAXAVOID*LME	1.052*		
	(0.095)		
ENSCORE	-0.012**	-0.019**	-0.011*
	(0.038)	(0.017)	(0.088)
ENSCORE*LME	-0.003		
	(0.649)		
REPLENGTH	1.246***	1.392***	1.162***
	(0.000)	(0.000)	(0.000)
GRI_ADHERE	0.466***	0.555**	0.398
	(0.008)	(0.019)	(0.137)
ASSURANCE	0.404**	0.248	0.609***
	(0.025)	(0.412)	(0.008)
SIZE	0.258***	0.203**	0.340***
	(0.000)	(0.048)	(0.001)
LEV	1.264*	1.000	1.722*
	(0.063)	(0.329)	(0.063)
SOSCORE	0.005	0.006	0.003
	(0.407)	(0.542)	(0.655)
CGSCORE	0.003	0.005	0.003
	(0.473)	(0.413)	(0.606)
ROA	1.069	-1.084	3.491**
	(0.354)	(0.560)	(0.026)
GDP	-6.486*	-28.953	-4.170
	(0.053)	(0.129)	(0.199)
REVENUE	-0.466	-43.879**	9.106
	(0.954)	(0.027)	(0.370)
Constant	53.020	308.203	24.565
	(0.149)	(0.135)	(0.486)
Observations	2,981	1,102	1,849
Country FE	YES	YES	YES
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
St. errors clustered	firm level	firm level	firm level
Pseudo R-squared	0.328	0.294	0.37

Notes: This table presents results from logit regressions of SRTD on TAXAVOID, ENSCORE, and control variables. Column (2) contains observations from countries with liberal-market economies and column (3) contains observations from countries with non-liberal-market economies. In columns (2), we lose 30 observations because of perfect prediction related to industry FE *P*-values are presented in parentheses. *, **, *** indicate statistical significance at the .1, .05, and .01 levels, respectively. All *p*-values are based on two-tailed tests and are calculated based on standard errors that are clustered by firm. Appendix C summarizes the definition of variables.

Table 5: Portrayal and Policies

VARIABLES	(1) PORTRAYAL	(2) PORTRAYAL	(3) PORTRAYAL	(4) POLICIES	(5) POLICIES	(6) POLICIES
SAMPLE	GLOBAL	LME	NON-LME	GLOBAL	LME	NON-LME
TAXAVOID	0.190	1.101**	-0.178	0.174	-0.579	0.820
	(0.563)	(0.040)	(0.682)	(0.712)	(0.354)	(0.246)
ENSCORE	–0.016***	-0.022***	-0.012*	–0.003	-0.004	-0.005
	(0.001)	(0.003)	(0.076)	(0.672)	(0.776)	(0.561)
REPLENGTH	1.213***	1.278***	1.145***	0.961***	1.276***	0.911***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GRI_ADHERE	0.481***	0.633***	0.299	0.233	0.061	0.495
	(0.007)	(0.007)	(0.276)	(0.466)	(0.916)	(0.225)
ASSURANCE	0.438**	0.255	0.704***	0.337	0.734*	0.011
	(0.015)	(0.390)	(0.002)	(0.199)	(0.082)	(0.976)
SIZE	0.266***	0.196*	0.353***	0.380***	0.308*	0.531***
	(0.000)	(0.053)	(0.001)	(0.000)	(0.065)	(0.000)
LEV	1.611**	1.004	2.320***	–0.957	0.457	-1.224
	(0.018)	(0.320)	(0.010)	(0.376)	(0.825)	(0.381)
SOSCORE	0.003	0.007	0.000	0.024***	0.010	0.027***
	(0.631)	(0.440)	(0.998)	(0.008)	(0.561)	(0.007)
CGSCORE	0.005	0.006	0.006	–0.006	-0.002	-0.005
	(0.210)	(0.315)	(0.303)	(0.266)	(0.796)	(0.503)
ROA	1.034	-1.073	3.161*	0.711	3.684	-0.764
	(0.387)	(0.557)	(0.059)	(0.720)	(0.200)	(0.774)
GDP	–5.029	-41.740**	-2.597	–19.039***	-41.418	-14.981***
	(0.103)	(0.025)	(0.389)	(0.000)	(0.111)	(0.005)
REVENUE	–8.582	-37.530*	-2.071	11.687	-34.151	45.540***
	(0.295)	(0.057)	(0.841)	(0.282)	(0.156)	(0.000)
Constant	39.931	445.192**	11.363	182.454***	435.067	128.218**
	(0.236)	(0.028)	(0.727)	(0.001)	(0.123)	(0.027)
Observations	2,981	1,102	1,849	2,917	1,018	1,754
Country FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
St. errors clustered	firm level	firm level	firm level	firm level	firm level	firm level
Pseudo R-squared	0.326	0.283	0.375	0.369	0.363	0.429

Notes: This table presents results from logit regressions of PORTRAYAL and POLICIES on TAXAVOID, ENSCORE, and control variables. In columns (2), (4), (5) and (6), we lose 30, 10, 84, and 41 observations, respectively, because of perfect prediction related to industry FE. In columns (4) and (6), we also lose 54 observations because of perfect prediction related to country FE. *P*-values are presented in parentheses. *, **, *** indicate statistical significance at the .1, .05, and .01 levels, respectively. All *p*-values are based on two-tailed tests and are calculated based on standard errors that are clustered by firm. Appendix C summarizes the definition of variables.

Table 6: Tax Mention

VARIABLES	(1) MENTION	(2) MENTION	(3) MENTION
SAMPLE	GLOBAL	LME	NON-LME
TAXAVOID	–0.184	-0.382	-0.214
	(0.510)	(0.458)	(0.528)
ENSCORE	0.005	0.002	0.008
	(0.340)	(0.767)	(0.202)
REPLENGTH	1.627***	1.509***	1.743***
	(0.000)	(0.000)	(0.000)
GRI_ADHERE	0.768***	0.828***	0.727***
	(0.000)	(0.001)	(0.000)
ASSURANCE	–0.416**	-0.662**	-0.296
	(0.025)	(0.022)	(0.250)
SIZE	0.026	0.068	0.018
	(0.706)	(0.477)	(0.859)
LEV	–0.092	0.654	-1.046
	(0.885)	(0.485)	(0.222)
SOSCORE	–0.003	-0.006	0.000
	(0.466)	(0.454)	(0.988)
CGSCORE	0.002	-0.003	0.002
	(0.652)	(0.586)	(0.587)
ROA	0.518	-0.117	2.545
	(0.681)	(0.950)	(0.115)
GDP	0.180	19.295	0.967
	(0.958)	(0.465)	(0.796)
REVENUE	14.346**	-2.233	17.488**
	(0.043)	(0.912)	(0.042)
Constant	–23.153	-222.287	-33.708
	(0.525)	(0.438)	(0.390)
Observations	2,963	1,119	1,831
Country FE	YES	YES	YES
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
St. errors clustered	firm level	firm level	firm level
Pseudo R-squared	0.360	0.312	0.409

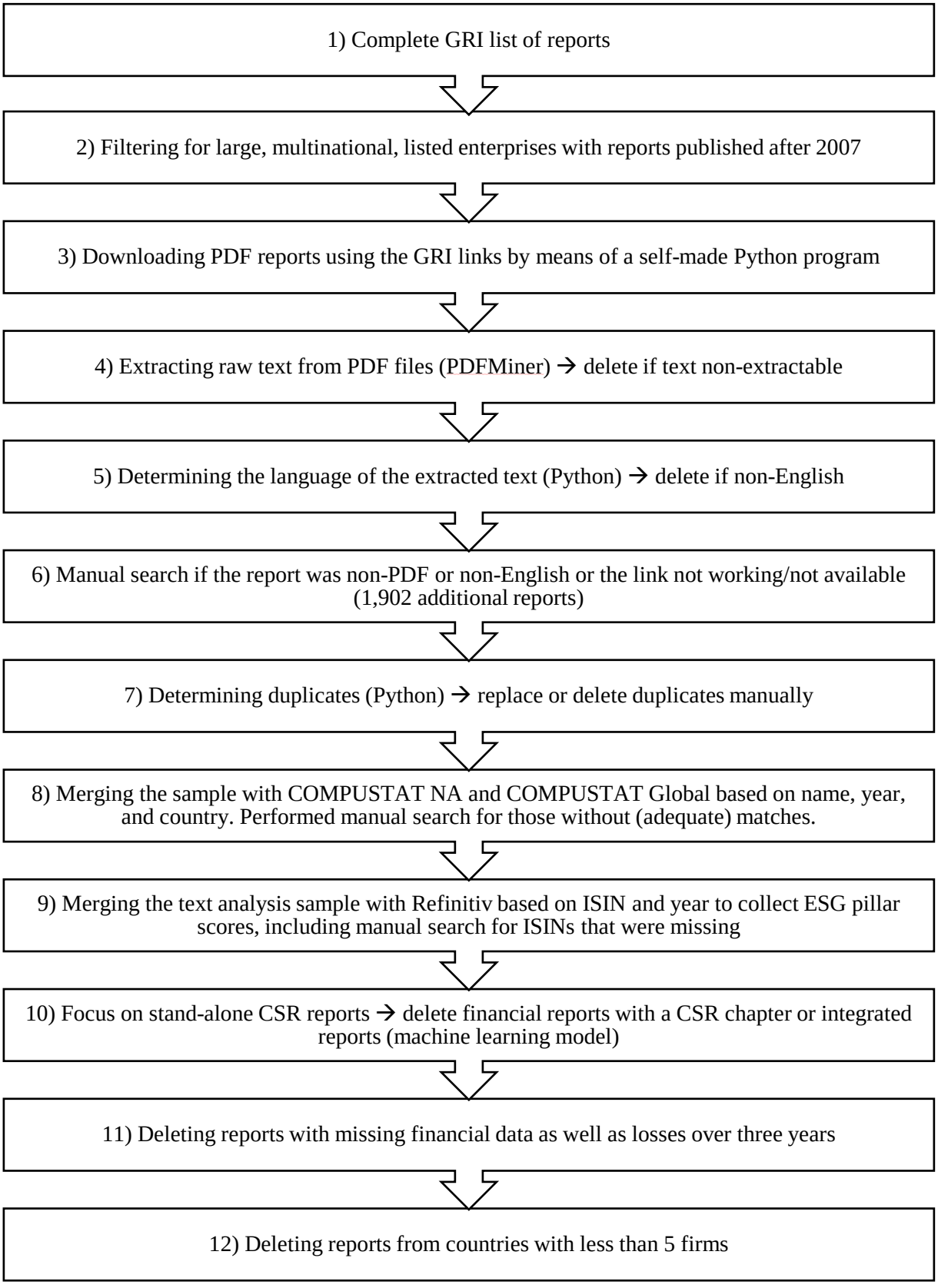
Notes: This table presents results from logit regressions of MENTION on TAXAVOID, ENSCORE, and control variables. In column (1) and (3), we lose 18 observations because of perfect prediction related to country FE. In column (2), we lose 13 observations because of perfect prediction related to industry FE. *P*-values are presented in parentheses. *, **, *** indicate statistical significance at the .1, .05, and .01 levels, respectively. All *p*-values are based on two-tailed tests and are calculated based on standard errors that are clustered by firm. Appendix C summarizes the definition of variables.

Table 7 Robustness Tests

VARIABLES	(1) SRTD	(2) SRTD	(3) SRTD
SENSITIVITY TEST	Exclude Observations with Low Confidence Classification as Nonfinancial Reports	Exclude SRTD's Using Only the Most Frequently Occurring Keywords	Replace ENSCORE with EN_CHANGE
TAXAVOID	0.080	0.178	0.174
	(0.795)	(0.594)	(0.574)
ENSCORE	-0.012**	–0.016***	
	(0.018)	(0.002)	
EN_CHANGE			–0.018***
			(0.003)
Observations	2,633	2,981	2,928
Controls	YES	YES	YES
Country FE	YES	YES	YES
Industry FE	YES	YES	YES
Year FE	YES	YES	YES
St. errors clustered	firm level	firm level	firm level
Pseudo R-squared	0.304	0.326	0.323

Appendix A: Sample Creation

A1: Overview



A2: Selection of CSR Reports and Extraction of Text (Steps 1-7)

Filtering (Steps 1 and 2)

We started with the complete list of reports from the GRI Report List from 2008 to 2017 and filtered for large, multinational, listed enterprises (9,578 reports).[22]

Downloading and data checks by means of a self-made Python program (Steps 3-5)

We required reports to be PDFs with extractable text in English. To gather the sample, we downloaded the PDF reports from the firms' websites using the links provided in the GRI Report List in an automatic manner by means of a self-made Python program.[23] If the link was (still) valid and the report could be downloaded, we extracted raw text from PDF files using an open source library for Python called PDFMiner. Several small pre-processing steps were made to improve the extraction process. Among others, we lower-cased the text and excluded tables of contents using a mechanism developed by Wu, Mitra, and Giles (2013). The language of the extracted text was automatically determined by counting stop words, which are frequent words such as articles or forms of "to be". The algorithm picked the language containing the most stop words found in the text.

Manual search (Steps 6 and 7)

Out of the 9,578 reports, 4,269 initially fulfilled the criteria (working link, extractable PDF in English). For the remaining 5,309 reports, we initiated a manual search and examined the firms' homepages, the GRI Database, and search engines. This manual approach led to 1,902 additional reports.

[22] The GRI (2018b, 6) uses the EU definition for firm sizes, that is, large firms have at least 250 employees and a revenue of more than 50 million euros or total assets of more than 45 million euros.

[23] The other typical format is an html link. We were unable to analyze these reports because the full text is not typically on one browser page. Instead, the user must click links within the report to see the various sections. Reports are downloadable on the GRI website as well. However, they can only be downloaded separately and are secured by a robot question making it impossible to automatically crawl them.

Finally, the Python program searched for duplicates in our set of downloaded reports to rule out that links for different firm-year combinations led to identical reports. Duplicates were manually inspected and either replaced by the correct link or omitted. The sample of adequate reports with CSR information consists of 5,806 reports.

A3: Merging with Compustat and Refinitiv (Steps 8 and 9)

We then merged the sample with COMPUSTAT NA and COMPUSTAT Global data by firm and year. The GRI Report List does not include identifiers such as cusips or CIKs. Therefore, we matched firms to COMPUSTAT based on firm name, year, and country (to improve the accuracy of the match) using two SAS spelling distance functions. For non-matching observations, we manually searched the COMPUSTAT databases to find the appropriate identifier. All observations that were successfully matched using the SAS functions but did not result in a spelling distance of zero were further examined manually. If visual inspection could not confirm the match was accurate, we initiated a manual search for the correct identifier.

Next, using ISINs obtained from COMPUTSTAT Global and the CRSP/COMPUSTAT Merged database (for U.S. firms), we matched the sample to Refinitiv to obtain the ESG pillar scores (ENSCORE, SOSCORE, CGSCORE). For observations with a missing ISIN, we performed a manual search for ISINs. We deleted observations with a missing ISIN or with missing necessary pillar scores from Refinitiv.

A4: Identifying Stand-Alone CSR Reports (Step 10)

We focused on stand-alone CSR reports and deleted 691 financial reports with a CSR chapter or integrated reports. To distinguish financial reports from stand-alone CSR reports, we first manually coded a random sample of 200 reports as either financial or stand-alone. Specifically, we classified as stand-alone CSR reports any reports that did not contain

financial information except for a short overview about the firm's performance at the beginning or end of the report. We identified all other reports as financial. We then trained a machine learning model using this manually-coded sample and employed the model to classify all remaining reports. To implement the machine-learning process, we first transformed all manually classified documents into TF-IDF matrixes. Then, we trained and evaluated multiple classifiers, namely support vector machines, random forests, and Naïve Bayes, which are known to be effective text classification methods (Aggarwal and Zhai 2012). Using a 20 fold cross validation, we achieved a very high mean accuracy (93 percent with a standard deviation of 7 percent). We also computed the confidence of the classifier for each prediction of a document as non-financial and financial.

A5: Requiring Financial Information and Positive Income (Steps 11 and 12)

We dropped 250 firm-years with negative pre-tax income for the last three years and another 162 observations with missing financial variables. The sample consists of 3,017 reports with available financial data before dropping 36 observations from countries with less than five firms (Step 12).

Appendix B: Assembling Search Terms

B1: Development of Inclusion and Exclusion Words

We examine the reports for keywords that signal a tax-related context (i.e., inclusion words). Given that some inclusion words such as “tax” can be used in multiple ways that are unrelated to actual tax reporting, we create a list of exclusion words or phrases. Our search method thus ignores the occurrence of an inclusion word if it corresponds to an exclusion word. To create our list of inclusion and exclusion words, we employed a multi-step approach and used data from our first test run. Our initial selection of words stemmed from the researchers’ experience in prior CSR reporting projects, examples from the literature, and manual inspections of CSR reports. In multiple steps, we supplemented and reduced our initial selection of inclusion and exclusion words after thorough inspections of the output. To create an appropriate and clear set of keywords, we required potential inclusion words to have at least 10 hits without simultaneous occurrence with another inclusion word that has more hits and to have a negligible number of false hits that could not be corrected via exclusion words.

To name an example, the potential inclusion word “subsidy” generally occurs in an employee-related context such as subsidies for schooling costs, food, or pension contributions so we did not employ it. Similarly, a few firms talk about contributions to the public or the government without specifically naming taxes or using the word “payment”. However, the low number of correct hits using the term “contribution” (or regular expressions that contain this term) did not justify the numerous false hits that occurred such as discussions regarding “non-monetary contributions” or even contributions to a public debate or discussion. Finally, we extracted a list of all text windows containing exclusion words and manually inspected the list for potentially relevant hits to avoid false exclusions. Two authors independently

developed the two lists. Differing views were discussed with a third author.The table below presents inclusion and exclusion words.

Word Lists[24]	
Inclusion Words:	
tax[25]	payment.{0,3}to.{0,25}government
government.{0,15}payment	
Exclusion Words:	
pre-.{0,2}tax	tax-.{0,2}exempt
pretax	tax-.{0,2}free
before.{0,20}tax	tax year
before deduction of.{0,20}tax	tax number
prior deduction of.{0,20}tax	low.{0,2}income housing tax credit
post-.{0,2}tax	tax & accounting
after-.{0,2}tax	legal & tax
after.{0,20}tax	general tax code
after deduction of.{0,20}tax	taxi
net of.{0,20}tax	taxonomy
without.{0,20}tax	taxon
excluding tax	[a-zA-Z]tax[26]

B2: Keyword Search Methodology to Measure Socially Responsible Tax Disclosure

Tausczik and Pennebaker (2010) outline a process to create a transparent text analysis program, the Linguistic Inquiry and Word Count (LIWC) that is useful in detecting meaning in a wide variety of settings. Essentially, the process relies on domain expertise to develop a dictionary of words to define particular categories. Tausczik and Pennebaker (2010) encourage the use of this process to develop textual analysis programs useful in other contexts. We follow their approach using judges with tax expertise to create an initial set of words and adjust the list based on agreement of two out of three judges.[27] We created a coding scheme that determines which statements correspond to the two categories of socially responsible tax disclosures PORTRAYAL and POLICIES. We then determined potential

[24] A{x,y}B means that A occurs, followed by at least x and at most y arbitrary characters, and then ends with B.
[25] This term captures words such as taxes and taxation as well.
[26] This term captures words such as syntax.
[27] Three authors of this paper acted as judges.

keyword candidates from the coding scheme, examples in the literature (Davis et al. 2016; Hardeck and Kirn 2016), and inspections of a randomized list of text windows. To check the accuracy of our candidates and avoid false hits, we employed a randomized list of all text windows and inspected the first 25 occurrences of each potential keyword candidate. We then included a candidate if the success rate for the overall view was at least 66.67 percent. One author always inspected the 25 first occurrences, another one randomly checked the results. A third author resolved disagreements. Besides avoiding false hits, our set of keywords should be as complete as possible and ensure that text windows that signal the intended themes are identified. To this aim, three authors independently coded a random selection of 400 text windows as PORTRAYAL, POLICIES, or none. We then searched for windows for which our set of keywords was unable to identify the theme. Such text windows were inspected for additional keywords. After examining keywords as outlined before, we again tested our random selection. The process was repeated until more than 85 percent of all coded text windows were correctly identified. The following table shows our set of keywords.

PORTRAYAL	POLICIES
communit	co-.{0,2}operat
contribut	constructive
ec1	disclos
economic value	fair share
government revenue	fair tax
help.{0,20}infrastructure	faith
host countries	honest
host governments	integrity
local econom	open.{0,20}communication
paid.{0,30}in which we operate	open.{0,20}relation
paid.{0,30}where we operate	principles
pay.{0,30}in which we operate	spirit
pay.{0,30}where we operate	transparen
public finance	
society	
tax payer	
tax revenue	
taxpayer	
value distribut	
value generat	

Appendix C: Variables Measurement

Variable	Description	External Sources
SRTD	Dummy variable coded as 1 if at least one socially responsible tax disclosure keyword in tax-related text windows, and 0 otherwise.	–
PORTRAYAL	Dummy variable coded as 1 if at least one PORTRAYAL keyword in tax-related text windows, and 0 otherwise.	–
POLICIES	Dummy variable coded as 1 if at least one POLICIES keyword in tax-related text windows, and 0 otherwise.	–
MENTION	Dummy variable, coded 1 if the report includes at least one tax-related inclusion word, and 0 otherwise.	–
TAXAVOID	Difference between the tax on pre-tax income before exceptional items computed at the home-country statutory tax rate and the current tax expense. The difference is then divided by pre-tax income. The measure is calculated over a three-year window.	COMPUSTAT, KPMG (2018)
ENSCORE	Environment pillar score, ranging from 1 to 100.	Refinitiv
EN_HIGH	Dummy variable coded 1 if the environmental score is in the top quartile, and 0 otherwise.	Refinitiv
EN_LOW	Dummy variable coded 1 if the environmental score is in the bottom quartile, and 0 otherwise.	Refinitiv
EN_CHANGE	Change in environment pillar score from t-1 to t.	Refinitiv
LME	Dummy variable coded 1 if the country is classified as liberal market economy (United States, Canada, Australia), and 0 otherwise. We classify the United Kingdom as non-liberal market economy.	Hall and Soskice (2001)
REPLENGTH	Natural logarithm of the total number of words by report.	–
GRI_ADHERE	Dummy variable coded 1 if the CSR report adheres to GRI Standards, and zero otherwise. Note that citing GRI is not equal to GRI adherence.	GRI (2018a)
ASSURANCE	Dummy variable coded 1 if the CSR report was externally assured, and zero otherwise.	GRI (2018a)
SIZE	Natural logarithm of total assets (AT) in dollars.	COMPUSTAT
LEV	Long-term debt (DLTT), scaled by total assets (AT). Long-term debt is set to 0 if missing.	COMPUSTAT
ROA	Pre-tax income (PI), scaled by total assets (AT).	COMPUSTAT
SOSCORE	Social pillar score, ranging from 1 to 100.	Refinitiv
CGSCORE	Corporate governance pillar score, ranging from 1 to 100.	Refinitiv
INDUSTRY	Industry fixed effects according to the Fama French 17 industry classification.	COMPUSTAT
GDP	The natural log of GDP per capita is measured at purchasing power parity in international dollars.	IMF (2018)
REVENUE	Tax ratio, measured as total tax revenue divided by the GDP.	IMF (2018)
COUNTRY	Country fixed effects based on headquarter location.	GRI (2018a)
YEAR	Year fixed effects.	GRI (2018a)