

Review of Corporate Social Responsibility Disclosure and its Impact on Firm Value

INTRODUCTION

This paper examines the relationship between corporate social responsibility (CSR) disclosure and firm value by reviewing existing literature and suggesting future research ideas. I review the prior research both to provide information on the current state of the literature on CSR disclosure and to identify gaps in current literature. My review covers two broad areas. First, I review the current relationship between environmental disclosure and firm performance. Second, I discuss research on the current relationship between CSR and firm performance. Each section concludes with suggestions for future research.

The definition of corporate social responsibility is not always clear. I follow McWilliams and Siegel (2001) define CSR as “a firm’s efforts to surpass compliance by voluntarily engaging in actions that appear to further some social good, beyond the interests of the firm and that which is required by law”. This definition suggests that firms may consider the concerns of all stakeholders when developing a CSR policy. It also implies that firms may go beyond the goal of maximizing shareholder wealth. Thus, the existence of CSR investment and disclosure puzzles researchers because it does not align with shareholder theory since shareholder theory generally put the concerns of shareholders before stakeholders¹.

Most papers identify and categorize CSR into three dimensions: Environmental, Social, and Governance. Some examples of environmental issues include management effort to respond

¹ See detailed discussion in CSR- Description and Theoretical background section.

to climate change, develop renewable energy, manage natural resource use, waste and toxic emission. Some examples of social issues include community engagement, human rights policies, union relations, human capital development, product safety, employee health, and safety policy (MSCI 2015). Some examples of governance issues include governance structure and executives' pay practices.

Insert Table 1 here

CSR disclosure appears to be increasingly important in recent years. Many companies nowadays commit to CSR reporting on environment and social issues. Three-quarters of investment professionals use sustainability performance information when making investment decisions (CFA Institute 2015). In 2013, around 93 percent of the largest 250 firms in the world voluntarily issued CSR reports, referred as a CSR standalone report (Dhaliwal et al. 2011). These trends suggest that firms realize the importance of CSR information and its impact on firm value.

CSR can affect firm value in several ways. An investment in CSR can help a firm increase its reputation of being a good corporate citizen (Christensen 2016; Lourenço et al. 2014), help a firm attract high-quality employees² and improve the effectiveness of the marketing of their products and services (Lys, Naughton, and Wang 2015; McWilliams and Siegel 2001). In addition, McWilliams & Siegel (2001) argue that CSR, specifically environmental performance, can constitute a source of competitive advantage, especially in high-growth industries. For instance, products with socially responsible attributes such as organic cosmetics with sustainability packaging may appeal to a specific group of customers. Some argue that CSR acts as an insurance to reduce risks faced by firms by protecting the firms from the penalties in the case of negative

² A well-developed employee health and safety program can bring an additional benefit to employers (do you mean employers?), keeping talent from leaving the firm.

corporate events. (Peloza 2006; Hoi, Wu, and Zhang 2013). For instance, Blacconiere and Patten (1994) examine the stock price reaction of firms involving in Union Carbide's chemical leak in Bhopal, India during 1984. They find that firms with more extensive environmental disclosures before the disaster receive less negative stock price reaction than firms with less extensive disclosures. Lins, Servaes, and Tamayo (2017) document that firms with good CSR performance had stock returns significantly higher than firms with bad CSR performance during the 2008-2009 financial crisis.

In addition to the other benefits that CSR can bring, disclosing such information can enhance firm performance through the reduction of information asymmetry. Information asymmetry exists when managers possess private information regarding firm future performance that investors do not have?. In a high information asymmetry environment, investors cannot differentiate between good and bad firms. As a result, investors will value both good and bad firms at an average price. Through voluntary disclosure, managers can reduce information asymmetry, thus receiving a positive response from investors (Healy and Palepu 2001). This review focuses on the influence of CSR disclosure on firm value. The purpose of this review is to synthesize evidence regarding how CSR affects firm value, through reducing information asymmetry. This is different from the work of Watson and Huang (2015), who provide an excellent review of corporate responsibility research in accounting. Watson and Huang (2015) cover a broader range of topics, from discussing the determinants and consequences of CSR to the roles of CSR disclosure and assurance. I focus specifically on CSR voluntary disclosure and the relationship between CSR voluntary disclosure and firm value, which was not discussed thoroughly in their review. This is also different from the work of Rezaee (2016) which provides an overview of sustainability relevant theories and proposes a sustainability research framework.

Insert Table 2 here

In writing this review I was met with a conundrum. In regard to dependent variables, many studies consider firm performance rather than firm value, which is my dependent construct of interest; and in regard to the independent variables, many studies consider CSR performance rather than CSR reporting, which is my independent construct of interest. While a fairly strong body of work supports a positive relationship between firm performance and firm value (Kothari 2001; Anthony and Ramesh 1992), the link between CSR performance and CSR reporting is not as strong. Indeed, Clarkson et al. (2008) have suggested a positive relationship between CSR performance and CSR reporting, while Hummel and Schlick (2016) report a curvilinear relationship with those at the highest and lowest levels of CSR performance doing the most reporting. Nevertheless, in order to provide as broad a review of this literature as possible, I include articles using firm performance and CSR performance in the relevant sections, along with a careful notation as to the specific independent and dependent constructs considered.

I organize the paper by looking at the components in CSR disclosure research. Current CSR disclosure research is divided into an environmental disclosure stream and CSR disclosure stream that incorporates two or three dimensions defined above. Each dimension includes a wide range of factors from community relations and employee relations to human rights. As the nature of these factors varies greatly, incorporating factors into a single construct when investigating CSR can be challenging and potentially misleading (Capelle-Blancard and Petit 2017). By closely looking at environmental disclosure first, I can identify the problems and evidence in one dimension and examine whether these can be generalized to CSR disclosure. The following section focuses on the relationship between environmental disclosure and firm performance. In each

subsection, I review the theoretical background, current evidence, methodology, limitations and potential research opportunities.

REVIEW OF THE LITERATURE

The relationship between environmental disclosure and financial performance

Description and theoretical background

Current environmental disclosure focuses on sulfur dioxide SO₂³, toxic and greenhouse gas (GHG) emissions. Toxic emissions track management of certain toxic chemicals that may pose a threat to human health and the environment (US EPA, OEI, OIAA 2017). Greenhouse gas (GHG) refers to gases that trap heat in the atmosphere: carbon dioxide, methane, nitrous oxide and fluorinated gases.⁴ Extensive GHG emission has been attributed to climate change and global warming. Information about toxic and GHG emissions is relevant to various stakeholders and shareholders in that it reveals corporate operating efficiency, attitude toward environmental concerns and even competitive advantage in clean technology and renewable energy (US EPA 2017).

Most literature on environmental disclosure draws on voluntary disclosure theory to explain the relationship between the disclosure level and firm value (Clarkson et al. 2013; Griffin and Sun 2013; Matsumura, Prakash, and Vera-Muñoz 2014; Ott, Schiemann, and Günther 2017). This theory proposes that firms voluntarily disclose nonfinancial information to reduce information asymmetry, thus enhancing firm value (Dhaliwal et al., 2011). Accordingly, firms with high information asymmetry will benefit the most from voluntary disclosure activities.

³ The Clean Air Act involves setting national air quality standards for sulfur dioxide and five other pollutants. These pollutants are considered harmful to public health (Matsumura, Prakash, and Vera-Muñoz 2014).

⁴ GHG emissions can be converted to carbon dioxide (CO₂) equivalents.

Disclosure theory also suggests that firms with good environmental performance have more incentive to disclose their environmental performance, in an effort Firms with good environmental performance want to differentiate themselves from firms with poor environmental performance by issuing detailed reports on environmental issues (Rezaee 2016).

Another relevant theory in this literature is legitimacy theory. Legitimacy theory suggests that firms voluntarily disclose information when their legitimacy is threatened i.e., by regulation and political pressures. The theory also suggests that noncompliance with social norms and environmental requirements can damage firm reputation and financial sustainability (Rezaee 2016). Voluntary environmental disclosure serves as a tool for firms with poor environmental performance to hide their true performance (Huang and Watson 2015) This theory is applicable in environmental disclosure literature in that it provides an explanation for current firms' greenwashing activities⁵ and increased disclosure during the time of heightened environmental pressures from environmental activist groups. (Marquis and Toffel 2012).

While voluntary disclosure theory suggests a positive relationship between environmental performance and environmental disclosure, legitimacy theory suggests a negative association between the two. According to voluntary disclosure theory, firms with superior environmental performance intend to disclose more to distinguish themselves from other firms. . . In contrast, according to legitimacy theory, firms with poor environmental performance intend to disclose more than other firms to protect their legitimacy. Ott, Schiemann, & Günther (2016) resolve the conflict between these two theories by arguing that they complement each other. Using a sample of firms participating in the Carbon Disclosure Project (CDP), they find that environment

⁵ I follow Marquis and Toffel (2012) to define greenwashing as “ a form of selective disclosure where companies promote environmentally friendly programs to deflect attention from an organization’s environmental unfriendly or less savory activities”.

disclosure is positively related to the squared difference of a firm's environmental performance relative to its industry peers, meaning firms with poor environmental performance increase their disclosure to legitimize their actions and firms with good environmental performance also increase their disclosure to enhance reputation and manage risks, while those with similar performance to their peers do not increase disclosure.

Research and evidence

Early studies about environmental disclosure investigate environment-specific events and their relationship with stock price (Barth and McNichols 1994; Blacconiere and Patten 1994; Blacconiere and Northcut 1997; Plumlee et al. 2015). For instance, Barth and Nichols (1994) examine how the market values the reporting of cleanup cost estimations at various points in a Federal Fund site⁶'s regulatory history. Blacconiere and Northcut (1997) investigate the relationship between stock price reactions to the Superfund Amendments and Reauthorization Act (SARA) of 1986 and environmental disclosure. They find that firms with extensive environmental disclosures have less negative market reaction to SARA. These studies suggest the relationship between environmental disclosure and firm value; however, the results are inconclusive because the disclosure settings are mandatory and the regression models do not control for environmental performance. Later studies (Richardson and Welker 2001; Aerts, Cormier, and Magnan 2008; Cormier and Magnan 2007) provide initial evidence of the link between environmental disclosure absent specific events and firm value. Although those studies document the enhanced value of environmental disclosure, they use samples from foreign countries, which may not be generalizable to the U.S. market. Johnston, Sefcik, & Soderstrom (2008) document the value

⁶ Federal Fund sites are those with the highest priority for cleanup because of their size or harm. Firms are subject to environmental cleanup cost at those sites and have to report those environmental liabilities (Barth and McNichols 1994).

relevance of environmental disclosure in the U.S. market. They examine SO₂ emission allowances⁷ in utility companies and find a positive stock price reaction to SO₂ emission reporting. However, this study involves mandatory disclosure, thus providing limited evidence of the impact of voluntary environmental disclosure on firm value.

More recent research documents the positive direct effect of voluntary environmental disclosure on either firm value or financial performance while controlling for environmental performance. Griffin and Sun (2013) conduct an event study that demonstrates⁷ companies disclose climate change information voluntarily in the interest of shareholders, by documenting a significant and positive stock price response to CSR news releases about GHG emissions in the three-day interval around the disclosure date. Since this event study focuses on a short-event window, it maximizes the likelihood that the reaction follows directly from the disclosure event. For a long-event window, Clarkson et al. (2013) find the positive relationship between firm value and environmental disclosure after controlling for environmental performance using the Toxic Release Inventory (TRI) performance in an environmentally sensitive industry. The authors find that both hard and soft disclosure items⁸ have the same value relevance to investors. However, the study is limited to a sample of five polluting industries. Whether the finding would change in an environmentally non-sensitive industry remains unanswered. Plumlee et al. (2015) extend this

⁷ The U.S. Environmental Protection Agency (EPA) allocates a fixed number of sulfur dioxide emission allowances to each utility company. A firm can bank the unused allowances for future use or trade them in the US cap and trade market for SO₂ emissions. The US EPA provides data on firm required disclosure regarding emission allowances trading activities (Johnston, Sefcik, and Soderstrom 2008)

⁸ Hard disclosure items are defined as easy to measure information while soft items are difficult to quantify and verify. For example, in Clarkson et al., (2013)'s self-constructed disclosure index, several of hard disclosure items are the existence of an Environmental and/or a Public Issues Committee in the Board, the adoption of GRI sustainability reporting guidelines or provision of a CERES report and environmental performance indicators on energy use, water use and on GHG emissions. Soft disclosure items consist of CEO statement on environmental performance in letters to shareholders and/or stakeholders and a substantive description of employee training in environmental management and operations.

research, showing that the association remains significant after controlling for disclosure type (hard vs. soft).

Matsumura et al.'s (2014) research in carbon emissions and carbon disclosure indicate that there is a negative association between carbon emissions disclosure and firm value, implying that carbon emission information has value relevance to investors. For firms not required by the Environment Protection Agency (EPA) to disclose such information, they find that there is no significant association between firm value and carbon emissions. In addition, firm size, book to market, proportion of disclosing firms, and overall CSR performance strengths are significantly related to a firm's decision to publicly disclose carbon emissions.

Recent findings by Ott et al., (2016) provide more insights into firms' sequential disclosure decisions. The researchers use Carbon Disclosure Project (CDP) data⁹, which provides information on both firms that choose to respond to the survey about how firms manage carbon emissions but decide not to publish the results, and firms that choose to respond to and publish the results of the survey. Their findings indicate that profitable firms choose to respond to CDP but may not choose to publish the results and firms with good environmental performance want to publish the results. In countries with no CSR regulation, firms have more incentive to publish the results, suggesting that GHG emissions information brings incremental value to investors.

Methodology and proxies used

Archival researchers have measured environmental performance and disclosure using various datasets and methods. Two of the most recently used datasets are the Toxic Release Inventory (TRI) and the Carbon Disclosure Project (CDP) dataset. The Toxic Release Inventory

⁹ Carbon Disclosure Project data will be further discussed in the methodological and proxies used section.

captures firms' historical pollution performance, focusing on the 650 pollutants regulated by the U.S. Environmental Protection Agency (EPA) (Clarkson et al., 2013; US EPA, OEI, OIAA, 2016). TRI is a mandatory program that makes information about industrial management of toxic chemicals available to the public. Information is updated annually and reported to EPA directly from facilities. However, the TRI dataset does not include information on other environmental aspects such as water usage, energy efficiency, and greenhouse gas emissions; thus, research findings using TRI are limited to the management of toxic emissions only. The CDP questionnaire provides a globally consistent standard for GHG emissions and information on a firm's activities to reduce GHG emissions. The CDP sends its survey to firms each year. Firms may choose whether to respond to the questionnaire and later whether to deny or grant permission to publish their response. The pre-defined structures of the questionnaire allow the public to see whether firms answer in detail or in general terms or omit questions (Ott, Schiemann, and Günther 2017). One of the advantages of the CDP dataset is that it allows researchers to investigate the sequential disclosure decisions of three types of firms: (1) firms that decide not to respond to the questionnaire; (2) firms that decide to respond to the questionnaire but not to publish the results, and (3) firms that decide to both respond and publish the results.

Another source of environmental data is the self-constructed disclosure index. Clarkson et al. (2013) constructed the disclosure index based on standalone environmental reports, CSR reports, sustainability reports and corporate websites. The disclosure index is based on the Global Reporting Initiative (GRI) framework and the advice of a GRI expert. The index covers hard disclosure items, such as the existence of a department for pollution control and the existence of an Environment and Public Issues Committee within the board. Environmental performance measured in the index includes performance in energy use, water uses, GHG, land and resources

use, etc. Griffin & Sun (2013) manually collect environment disclosure data from CSRwire.com. They search all archive releases in www.csrwire.com that contain the phrase “greenhouse gas emission”, “carbon emissions” or “CO₂ emissions” to collect GHG releases. Plumlee et al., (2015) also develop a self-constructed disclosure index. Apart from Clarkson et al.'s (2013) index, the disclosure items in their index are classified into positive, neutral and negative type of disclosure. Thus, they are able to incorporate the difference between positive and negative aspects of environmental performance into their index.

Both the TRI and CDP datasets are out of date by the time they are issued, in regard to stock pricing, because the information may have been incorporated into the stock price at a much earlier date. Moreover, each dataset shows only one environmental dimension, which causes study findings that use such datasets to not be generalizable to other environmental dimensions i.e., waste management, water use, and land and natural resource use. The self-constructed disclosure index may provide a more comprehensive list of environmental dimensions, but is typically limited to a narrow time frame. For example, Clarkson et al., (2013) use the self-constructed disclosure index, obtaining a sample from the years 2006-2008 and Plumlee et al. (2015) hand collect samples from 2000-2006.

In terms of methodology, studies about CSR must address endogeneity issues (Huang and Watson 2015; Rezaee 2016). Endogeneity arises from reverse causality and sample selection bias. Reverse causality refers to whether environmental disclosure enhances firm financial performance or whether firms with good financial performance tend to disclose more. Many studies investigating the association between voluntary disclosure and financial performance select samples of only those firms observed engaging in environmental activities, which creates a sample-selection bias. In addition, firms responding to CDP are mainly large firms, due to the high

preparatory costs to answering the detailed CDP questionnaire. Recent studies (Griffin and Sun 2013; Matsumura, Prakash, and Vera-Muñoz 2014; Clarkson et al. 2013; Ott, Schiemann, and Günther 2017) address this issue by using lead lag regression, employing Heckman's two-stage estimation procedure or using matched samples to compare firm financial performance between those that voluntarily disclose and those do not. These procedures only lessen the concern, but the problem still exists. Archival researchers cannot make any inference about firms excluded from the database.

Summary

Literature on environmental disclosure provides initial evidence on the value relevance of such disclosure to stockholders. It appears that environmental disclosure has an impact on firm value when environmental performance is controlled for. Both firms with good and bad environmental performance choose to voluntarily disclose information. There is only limited research to explain whether firms with bad environmental performance increase the level of disclosure to hide their true environmental performance or to explain their underperformance relative to their peers.

Recent studies investigate a firm's environmental disclosure policy in different ways. Some studies focus on toxic emissions, and GHG emissions (Matsumura, Prakash, and Vera-Muñoz 2014; Ott, Schiemann, and Günther 2017). Other studies (Clarkson et al. 2013; Plumlee et al. 2015) provide a comprehensive picture of a firm's environmental disclosure policy by using a disclosure index. Overall, there is a growing body of research interest in the link between environmental disclosure and firm value. Most studies reflect the fact that environmental disclosure contains information relevant to investors' decision.

Limitations and potential future research

In addition to the data and methodology limitations discussed above, many papers on environmental disclosure investigate specifically with toxic emissions or GHG emissions. Future research can incorporate data on water, waste and natural resource use to build a more comprehensive view of firms' voluntary environmental disclosure. Although recent literature has documented an association between environmental disclosure and firm value, future research can extend to investigate firms' incentives to provide environmental disclosure. Understanding the motivations behind such disclosures may shed light on why they can enhance firm value. In addition, we do not know what mechanisms facilitate the credibility of voluntary environmental disclosures and whether assurance of such information enhances credibility. Future research can address the impact of assurance and credibility of CSR disclosure on firm value.

Environmental information can convey a firm's cost-saving program, operating efficiency, and competitive advantage in green technology business. We do not yet know why firms decide to voluntarily disclose such information and whether firm value also depends on different disclosure motivations. In addition, other factors can interact with voluntary environmental disclosure. It would be interesting to know how such environmental disclosure interacts with changes in environmental risk, social pressure from stakeholders or regulators, and the political propensities of managers and boards (Griffin and Sun 2013).

The general assumption of this area of research is that most firms voluntarily disclose positive news. Prior research on voluntary disclosure has documented the potential influence of information content on firm value (Cho, Lee, and Pfeiffer 2013; Kothari, Shu, and Wysocki 2009) conveying positive, neutral or negative news can have differential effects on firm value. Plumlee et al. (2015) provide preliminary evidence of the impact of information content on firm

value using their self-constructed disclosure index. Using a sample of U.S. listed firms from five industries, they document a negative association between the cost of equity capital and soft positive disclosure items and a positive association between the cost of equity capital and soft negative disclosure items. That said, their classification of the nature of disclosure (positive/neutral/negative) depends on the nature of the information, not on how the information content may increase or decrease the stock price.¹⁰ Future research can further explore whether the nature of disclosure can influence the relationship between the level of environmental disclosure and firm value.

In terms of data and methodology, the short sample periods used in recent studies make it difficult to draw conclusions about the long-run effect on firm value. Future research may consider different time periods to shed light on this issue. Researchers can continue to build on self-constructed disclosure indexes developed by Clarkson et al. (2013) and Plumlee et al. (2015). current self-constructed disclosure indexes assume equal weight for all disclosure items and for environmentally-sensitive and non-sensitive industries. A more refined measure of voluntary environmental disclosure will help us further understand the voluntary disclosure relationship with firm value.

The relationship between CSR and firm value

In the previous section, I reviewed research that focused only on the environmental dimension of CSR reporting. Here I discuss the literature that considers two or three dimensions of CSR. As for clarification, I define various CSR concepts mentioned in this section. CSR refers

¹⁰ Current literature classifies good/neutral/positive news based on whether the news suggest an increase/no change/decrease in the firms' current earnings. Since this is difficult to determine in environment disclosure context, Plumlee et al.,(2015) categorize the news based on the general nature of information instead of on the directional firm response. For instance, all disclosure items related to the use of water are classified as neutral, all disclosure items related to GHG emissions are classified as negative.

to a firm's CSR activities. CSR performance refers to how a firm performs in CSR activities. For instance, how a firm design a notable community engagement program concerning local community is one of the performance metrics used by a third party to rate a firm's CSR performance. Finally, CSR disclosure refers to the reporting of a firm's CSR performance through different channels such as annual reports, websites, press releases, etc.

Description and theoretical background

Firms have increased their CSR disclosure in recent years. About 73% of the 4,100 largest global firms now issue CSR reports. Accordingly, investors and stakeholder groups have paid more attention to such disclosure. CSR disclosure is not currently mandated in the United States but is required in the European Union (Huang and Watson 2015). This is due to the European Directive on Non-Financial Reporting of 2014.

As discussed in the previous section, most research concentrates on voluntary disclosure theory and legitimacy theory to explain the trend of increased CSR disclosure. While voluntary disclosure theory suggests that firms with good CSR performance are likely to increase disclosure, legitimacy theory provides a reason for firms with bad CSR performance to increase disclosure.¹¹ Hummel & Schlick (2016) reconcile the two theories, providing evidence that good CSR performing firms choose high-quality disclosure to signal their superior CSR performance while bad CSR performing firms choose low-quality disclosure to hide their true CSR performance and protect their legitimacy. However, it is unclear whether investors recognize such difference and respond to t

¹¹ See Environment- Description and theoretical background section.

There are several theories that predict the relationship between CSR disclosure and firm value. Agency theory suggests that managers possess private information regarding a firm's future performance and release such information to reduce information asymmetry, thus stimulating a positive reaction from investors and enhancing firm value. This theory is applicable in the CSR context in that managers are not required to disclose such information but choose to do so to signal superior CSR performance and to explain poor CSR performance to investors (Rezaee 2016). Signaling theory also suggests that firms engage in CSR reporting to "signal" their good future financial performance. Using this theory, Lys, Naughton, & Wang (2015) demonstrate that firms undertake CSR activities when they anticipate positive future performance. As CSR can be viewed as a cost of doing business, signaling theory has proven to be relevant since it helps reconcile the conflict between CSR activities and short-term financial goals. Lourenço, Callen, Branco, & Curto (2014) document that market valuation of sustainability leaders in the Dow Jones Global Total Stock Index are higher than that of firms that are not included in such index. They argue that the reputation of a sustainability leader signals superior financial performance.

Stakeholder theory and shareholder theory are two conflicting theories that have been used in the CSR literature. Under stakeholder theory, stakeholders, including customers, suppliers, and employees, contribute to firm value and vice versa. Under the shareholder theory, companies have a primary goal of maximizing shareholder wealth, which may not align with other stakeholders' interest. European Union countries are known to be more stakeholder-oriented while U.S. firms are frequently more shareholder-oriented. Therefore, stakeholder theory may be more applicable in a European Union context and shareholder theory appears to be more relevant when examining U.S. companies

Research and evidence

Several studies provide evidence that CSR reduces information asymmetry, thus enhancing firm value. Cho et al., (2013) point out that both positive and negative CSR performance reduce information asymmetry proxied by bid-ask spread. The effect is more pronounced with negative CSR performance. They argue that CSR performance stimulates firms' voluntary CSR disclosure and drives earnings quality, thus reducing information asymmetry¹². Harjoto and Jo (2015) document that a firm's normative CSR¹³ increase analyst dispersion of earnings forecast and volatility of stock return, and decrease the cost of capital. This conflicting result that CSR increases information asymmetry may arise because the researchers restrict the sample to firms' voluntary CSR instead of firms' overall CSR, as examined in Cho et al., (2013). Taking a different approach, Attig, Cleary, El Ghouli, and Guedhami (2014) show that CSR performance reduces investment sensitivity to internal cash flow through information asymmetry and agency costs. Investment cash flow sensitivity reflects a firm's financial constraint. Information asymmetry and agency costs are commonly viewed as the two channels through which investors respond to the availability of internal cash flow. Thus, the research finding provides additional evidence on how CSR can affect information asymmetry. Lourenço et al., (2014) document that market valuation is higher for firms that enjoy the reputation of sustainability leader than for firms that do not. This implies that investors value CSR information as a signal of a firm's commitment to being a good corporate

¹² Clarkson et al. (2013) argue that firms with good environmental performance signaling their performance by voluntary disclosure. As for CSR performance drives earnings quality, Kim, Park, and Wier (2012) document that firms with good CSR performance are less likely to engage in accruals and real earnings management.

¹³ In the study, they subsample into legal and normative, and show the result is conflicting between the two subsample. Legal CSR refers to CSR actions that are required by laws. Normative CSR is defined as "a firm's voluntary implementation of CSR that goes beyond the interests of the firm, and that which is required by law" (Harjoto and Jo 2015)

citizen or a competitive advantage that boosts firm performance. Either way, CSR information plays an important role in investor decision making.

Most studies mentioned above examine CSR performance, thus providing limited evidence that CSR enhances firms' information environment and possibly increases firm value. To the best of my knowledge, Dhaliwal et al., (2011) is the first study that examines the effect of CSR disclosure on the cost of equity capital. Earlier studies investigate environmental disclosure and its relationship with firm value (Richardson and Welker 2001; Griffin, Lont, and Sun 2010). Using a sample of firms releasing electronic or hard-copy standalone CSR reports since 1993 and controlling for CSR performance, Dhaliwal et al., (2011) find that firms with a high cost of equity capital in the previous year are significantly more likely than others to initiate standalone CSR disclosures and the cost of equity capital decreases for firms that initiate standalone CSR reports with superior CSR performance only. Following this study, Dhaliwal, Radhakrishnan, Tsang, & Yang, (2012) provide further evidence of the negative association between CSR disclosure and analyst forecast error, suggesting the complementary role of CSR information in predicting firm future financial performance. Dhaliwal, Li, Tsang, & Yang (2014) extend this further to show that the impact of CSR disclosure on the cost of equity capital varies by the level of stakeholder oriented in a country. They provide evidence that the relationship is stronger in countries with more stakeholder oriented. Also using a sample of firms issuing CSR standalone reports, Christensen (2016) investigates whether CSR disclosure helps protect firm value. He finds that firms that have CSR reports, on average, are less likely to engage in high-profile misconduct¹⁴. He

¹⁴ High-profile misconduct events such as bribery, kickbacks, discrimination damage a firm's reputation, thus decreasing firm value.

also documents that when high-profile misconduct happens, firms that previously issued CSR reports experience a less negative stock price reaction.

Overall, it appears that CSR disclosure generally has a positive influence on firm value for firms with good CSR performance. The evidence is still limited in whether CSR disclosure mitigates the penalty for firms with bad CSR performance. While Dhaliwal et al., (2011, 2012, 2014) only use CSR standalone reports to examine CSR disclosure policy, Hummel & Schlick (2016) take a step further to manually construct a CSR disclosure index to show that disclosure quality plays a role in signaling sustainability performance. Firms with superior CSR performance choose high-quality disclosure while firms with poor CSR performance choose low-quality disclosure. They argue that firms with poor CSR performance choose low-quality disclosure to disguise their true performance and protect their legitimacy.

Methodology

Most prior research focuses on investigating the effect of CSR performance on the firm value. Margolis, Elfenbein, & Walsh (2009) conduct a meta-analysis of 251 studies and conclude that the overall effect is positive. However, it is not clear whether such a conclusion is reliable since prior studies do not control for endogeneity and sample-selection problems, which appear to be significant in CSR research (Shahzad and Sharfman 2015). A recent review by Watson & Huang (2015) provides a more comprehensive view of the relationship between CSR performance and firm value, concluding that the result is mixed when taking into consideration the reverse-causality problem. It is ambiguous whether firms with excellent financial health invest in CSR or whether firms that invest in CSR yield better financial performance. Studies such as Christensen (2016), Dhaliwal et al., (2011) and Lys, Naughton, and Wang (2015) used a variety of methods to address this issue. Among the methods are Heckman procedure, propensity matching score,

two-stage least square (2SLS) regression, instrument variable, and firm fixed effect regression models. As a result, Dhaliwal et al., (2011) find that the positive association between CSR standalone disclosure and the cost of equity capital exists only in firms with strong CSR performance. Lys, Naughton, and Wang (2015) find that CSR expenditures only play the signaling role in firm future performance. Future research on this topic should carefully choose the appropriate model to avoid endogenous bias, yielding an incorrect result.

In terms of CSR databases, there are several commonly used databases to measure CSR performance. The most popular one is the MSCI ESG STATS database, previously known as the KLD database. CSR performance score is divided into strengths and concerns that are binary scored within these subcategories: community, corporate governance, diversity, environment, products and controversial industry involvement. This database covers 650 companies from 1991-2014 and around 2400 companies from 2003-2014 (MSCI 2015). Examples of research using this database are Christensen (2016) and Dhaliwal et al.(2011,2012, 2014) . Another popular database is the Thomson Reuter ESG Research Data, previously known as ASSET4. This database covers RUSSELL 1000 firms beginning in 2002. The performance score is divided into 18 subcategories in four main sections: economic performance score, environmental performance score, social performance score and corporate governance performance score. A firm receives a z-score for each of the main sections, benchmarking its performance with the rest of the firm in the database (Lys, Naughton, and Wang 2015). Other databases include the lists of top CSR performers from Financial Times Stock Exchange, Calvert Social Index, the Dow Jones Sustainability Indices, etc. (Watson & Wang, 2015).

One of the problems in the existing CSR databases is that most databases cover firms with large market capitalization. The KLD database covers the largest 1000 U.S. companies by market

capitalization. ASSET4 covers firms in the RUSSELL 1000 index, which consists the largest companies by market capitalization. These large firm samples can potentially bias the result. Another problem is the degree of disagreement among the scores of different databases. (Watson and Huang 2015). Semenova and Hassel (2015) document the correlation between the environmental score KLD and ASSET4 is -0.05 in the sample of 466 US MSCI World companies from 2003-2011.¹⁵ Chatterji, Durand, Levine, & Touboul (2015) report a low convergence in six social raters – KLD, ASSET4, Calvert, FTSE4Good, DJSI, and Innovest. In particular, they examine the pairwise correlation between the KLD and ASSET4 CSR score on the overlapping data universe and find that the correlations in 2003-2006 are 0.08, 0.26, 0.08 and 0.14 respectively. This disagreement suggests a need to further validate different CSR ratings.

One of the possible reasons for different ratings among various databases is the weighting of CSR components. KLD has 71% of its subcategories in the social issues domain while ASSET4 has only 47% (Chatterji et al. 2015). It appears that the KLD CSR composite score possibly overweighs social components while potentially underweights environmental matters. Some social issues such as human rights violation, military involvement, freedom of expression and censorship violation may be important to few firms in a particular industry. However, most databases put those issues equally weighted with other environmental and governance issues that are relevant to many firms in a wide range of industries. In addition, the weighting should not be uniform across industries. For instance, oil and gas companies are more exposed to ecological damage criticism compared to technology companies (Capelle-Blancard and Petit 2017).

In terms of measurement, the aggregation of CSR scores across all components may create concern. Many studies (Gao, Lisic, and Zhang 2014; Attig et al. 2014; Cho, Lee, and Pfeiffer 2013)

¹⁵ In this study, they reports KLDNET score which equals strength score minus concern score. This score is commonly used as composite CSR score in the literature. The correlation is significant at 1% level.

often use the combined CSR score which is computed to be the number of strengths minus the number of concerns to proxy for CSR performance. A question arises whether a good performance in one component can compensate for a bad performance in another component (Capelle-Blancard and Petit 2017). Semenova & Hassel (2015) document that the KLD CSR strength score is positively correlated (0.42) with the KLD CSR concern score. Capelle-Blancard & Petit (2015) argue that a given company may be socially and environmentally friendly and, at the same time, socially irresponsible. Thus, the combination of scores with equal weights may not be reasonable.

In constructing a disclosure index, some studies on environmental disclosure (Clarkson et al. 2013; Clarkson et al. 2008; Plumlee et al. 2015) identify hard (objective) vs. soft (subjective) disclosure items¹⁶. Those items are evaluated on a binary basis and aggregated into a single disclosure score. Although this aggregated score intends to measure disclosure quality, it may only capture disclosure quantity. Some other measures are based on an ordinary basis. For instance, Aerts, Cormier, and Magnan (2008) measure environmental disclosure score by assigning three points to each disclosure item described in monetary or quantitative terms, two points to each disclosure item described specifically and one point to each disclosure item described in general. To measure social and environmental disclosure quality, Hummel and Schlick (2016) propose a new measurement scheme. They assign one point for each high-quality disclosure, low-quality disclosure or non-disclosure item and aggregate all points into a separate high-quality (low-quality) disclosure score. High-quality disclosure is defined as “the disclosure of numerical data on a company-wide level that fulfills or exceed the minimum requirements derived from the Global Reporting Initiative (GRI) guidelines G3.1”. If a firm provides information in monetary or

¹⁶ See detailed description in the relationship between environmental disclosure and firm value- methodology section.

quantitative terms but does not meet the GRI¹⁷ standards, the information is considered as low-quality. This measurement scheme strictly follows the GRI standards and is claimed to be based on the desirable characteristics of high-quality disclosure: verifiability, reliability, comparability, and consistency. Overall, constructing a disclosure index requires a careful review of different news channels, disclosure tones, quality and quantity and the varying weights across different dimensions and industries. As such, the weighting assigned each disclosure item should be adjusted for different industries. Challenges in constructing a disclosure index include the lack of comparability among CSR reports and the variability of channels that firms decide to release CSR news to investors.

Summary

It appears that CSR, in general, reduces information asymmetry and thus enhance firm value. However, the evidence presents only in firms with strong CSR performance (Dhaliwal et al,2011). Currently, there is evidence that firms want to signal their superior CSR performance to investors (Dhaliwal et al., 2011; Lys, Naughton, and Wang 2015). It is possible that firms choose to disclose to address stakeholder's concerns as stakeholder theory suggests or to explain their bad performance or to legitimize their actions as legitimacy theory suggests (Hummel and Schlick 2016). Recent studies provide evidence in consistent with stakeholder and legitimacy theory in large firms. We do not know yet whether small growth firms behave in consistent with the theories.

¹⁷ The Global Reporting Initiative (GRI) standards on sustainability reporting is the most commonly used international sustainability reporting standards. For each disclosure item, the GRI provides detailed description of all material information that must be disclosed by a firm (Hummel and Schlick 2016). Most studies (Clarkson et al. 2008; Clarkson et al. 2013; Plumlee et al. 2015; Hummel and Schlick 2016) identify and classify disclosure items consistent with the GRI framework. Hummel and Schlick (2016) not only identify disclosure items but also measure each disclosure item following the GRI standards.

Most studies use CSR standalone reports and annual reports to assess CSR disclosure. It is possible that firms can deliver CSR information through different channels. In terms of CSR measurement, several studies point out that CSR measures need to be improved (Hummel and Schlick 2016; Capelle-Blancard and Petit 2017; Chatterji et al., 2015). Current CSR measures lack appropriate weighting of different components and a combination of positive and negative CSR-related information. The lack of agreement among popular CSR ratings creates concern as well.

Limitation and potential future research

CSR disclosure is a relatively new area of research compared to voluntary disclosure research (Huang and Watson 2015). Research investigating whether CSR voluntary disclosure provides incremental information to influence investors' decision is limited. We do not know yet whether disclosure quality will have a differential impact on firm value. Currently, there is no mandatory assurance of disclosure in the United States. Some of the relevant questions are as follows (1) How does the credibility of CSR disclosure provide additional benefits to investors? (2) Does the assurance of such information play a role in helping investors make decisions? Current research has focused on investigating the benefits of CSR disclosure but ignored its costs. Further study can examine the following (1) what are the costs of CSR disclosure? (2) How do managers weigh in the benefits and costs of such disclosure?

The social, environmental and governance components are distinct constructs in CSR disclosure. Firms in environmentally-sensitive industries may choose to focus only on disclosing environmental performance and disregard social performance. The aggregation of those constructs into one disclosure score can potentially lead to a loss of relevant information regarding a firm's CSR disclosure policy. Future researcher can examine (1) the interaction among distinct

dimensions in CSR disclosure, (2) the differential impacts of those distinct dimensions on firm value and (3) the type and quality of CSR disclosure in different industries.

Future research may also want to consider more refined measures of CSR performance and disclosure. The aggregation and equal-weighting of CSR scores can potentially bias research findings. Capelle-Blancard & Petit (2015) call for a weighting scheme based on the amount of public scrutiny defined as the number of articles on a particular dimension of CSR, divided by the total number of CSR news items.¹⁸ Another technique to address the concerns of CSR measures is Data Envelopment Analysis (DEA). This method based on an optimization approach produces a composite CSR score without prior knowledge of the weights (Capelle-Blancard and Petit 2017). However, this method is difficult to comprehend and apply. This leaves a research opportunity to propose a more appropriate weighting scheme. Chatterji et al.(2015) and Semenova and Hassel (2015) point out that the CSR ratings in different databases do not converge. Future research can investigate the validity of CSR measures¹⁹ and the extent to which such measures are appropriate for certain research questions.

Regarding incentives for management to engage in CSR disclosure, we know that both good and bad CSR performers choose to disclose CSR information. Good CSR performers want to release such information to signal their superior CSR performance (Dhaliwal et al., 2011; Lys, Naughton, and Wang 2015). Bad CSR performers choose low-quality disclosure while good performers choose high-quality disclosure (Hummel and Schlick 2016). Future research can investigate whether bad performers disclose to explain their poor performance or to resemble good

¹⁸ The weighting scheme proposed by (Capelle-Blancard and Petit 2017) is based on the idea that a CSR disclosure item should be weighted in proportion to the amount of investors' attention to that item.

¹⁹ Several studies validate various CSR measures by documenting the pairwise correlations of these measures. Future research can address whether using different CSR ratings in different databases will yield the same research findings.

performers, thus disguising their true performance. In addition, we do not know yet in what circumstances managers decide to disclose. Dhaliwal, Li, et al., (2014) document that the negative association between CSR disclosure and the cost of equity capital is more pronounced in countries that are stakeholder oriented. It appears that managers are more likely disclose CSR to respond to stakeholder pressure even in countries that are shareholder oriented. Future research can validate this hypothesis. Some other relevant questions are as follows: (1) Are managers with a CSR-oriented focus more likely to disclose CSR performance? (2) Do managers disclose when there is an increased competition? (3) In what circumstances are managers more likely to disclose CSR-related issues?

CONCLUSION

Corporate social responsibility disclosure is still a new area in accounting research. Accounting researchers have the professional knowledge to examine CSR disclosure and its impact on firm value. Future accounting research on this area can explore the credibility and assurance of CSR information. A more refined CSR measure will help us understand the impact of CSR disclosure on firm value thoroughly. Future research can also address different dimensions in CSR separately and determine whether they depart from the theories on CSR. We also do not know yet the motivations behind CSR disclosure and whether those differ among environmental and social issues. Future research can examine this problem as well.

In this review, I primarily focus on the current state of environmental and CSR disclosure. However, the popularity of CSR and the changing policy of firms' CSR disclosure invite more coming questions. For instance, should the impact of CSR disclosure remain the same if all firms participate in releasing the information? Will CSR disclosure have an important effect if all firms prepare CSR report in a standard framework? And how do investors distinguish disclosure quality

among various CSR reports? The continually changing environment of CSR disclosure provides opportunities for researchers to investigate issues of interest to academic and practitioners. The suggestions for future research in this paper only serve as a starting point for closing the gaps in literature on the value relevance of CSR disclosure.

TABLE 1**Broad topic, specific CSR area and data source in selected studies**

Study	Broad topic	Specific CSR area	Data source
Richardson and Welker (2001)	CSR disclosure and cost of capital	Environmental, Social	Society of Management Accountants of Canada, annual reports
Cormier and Magnan (2007)	CSR disclosure, earnings, and market valuation	Environmental	Annual reports, environmental reports
Aerts, Cormier, and Magnan (2008)	CSR disclosure, financial analyst's earnings forecasts, public pressure	Environmental	Corporate websites, annual reports
Johnston, Sefcik, & Soderstrom (2008)	CSR disclosure and market valuation	Environmental	USEPA's Acid Rain Program Allowance database
Griffin and Sun (2013)	CSR disclosure and market valuation	Environmental	News releases from www.csrwire.com
Clarkson et al. (2013)	CSR disclosure and firm value	Environmental	Toxic Release Inventory
Matsumura et al.'s (2014)	CSR disclosure and firm value	Environmental	Carbon Disclosure Project

Plumlee et al. (2015)	CSR disclosure and firm value	Environmental	A self-constructed disclosure index consistent with the Global Reporting Initiative
Dhaliwal et al. (2011)	CSR disclosure and the cost of equity capital	Social, Environmental, Governance	Corporate Social Responsibility Newswire, corporateregister.com, internet searches, company websites
Dhaliwal, Radhakrishnan, Tsang, & Yang (2012)	CSR disclosure and analyst forecast accuracy	Social, Environmental, Governance	Corporate Social Responsibility Newswire, corporateregister.com, internet searches, company websites
Cho, Lee & Pfeiffer (2013)	CSR performance and information asymmetry	Social, Environmental, Governance	MSCI KLD
Attig, Cleary, El Ghoul, and Guedhami (2014)	CSR performance, investment sensitivity to cash flows	Social, Environmental, Governance	MSCI KLD
Lourenço et al. (2014)	CSR, sustainability leadership, reputation, and market valuation	Social, Environmental, Governance	Dow Jones Sustainability Index (DJSI)

Dhaliwal, Li, Tsang, & Yang, (2014)	CSR disclosure, the cost of equity capital and the roles of stakeholder orientation	Social, Environmental, Governance	Corporate Social Responsibility Newswire, corporateregister.com, internet searches, company websites
Harjoto and Jo (2015)	CSR activities, CSR performance, analysts' earning forecast dispersion, stock return volatility, cost of equity capital, and firm value	Social, Environmental, Governance	MSCI KLD
Lys, Naughton & Wang (2015)	CSR expenditures and accounting and market performance	Social, Environmental	ASSET4
Semenova and Hassel (2015)	Measurement of CSR	Environmental	ASSET4, MSCI KLD, GES
Christensen (2016)	CSR disclosure, firm value, and high-profile misconduct	Social, Environmental, Governance	The Global Reporting Initiative, CorporateRegister.com, the UN Global Impact, SocialFunds.com, internet searches and companies' websites.

Hummel and Schlick (2016)	CSR performance and disclosure	CSR	Social, Environmental	a self-constructed disclosure index consistent with the Global Reporting Initiative
Capelle-Blancard and Petit (2017)	Measurement of CSR		Social, Environmental	MSCI KLD
Ott, Schiemann, & Gunther (2017)	CSR disclosure, performance	CSR	Environmental	Carbon Disclosure Project

TABLE 2**Research purpose and major findings in selected studies**

Study	Purpose	Major findings
Richardson and Welker (2001)	To examine the relationship between financial and social disclosure and the cost of equity capital.	Social and environmental disclosure is positively associated with the cost of equity capital. The relationship is lessened among firms with better financial performance
Cormier and Magnan (2007)	To investigate the impact of voluntary environmental disclosure on the relationship between a firm's earnings and its market value	Voluntary environmental disclosure has a moderating impact on the relationship between a German firm's earnings and its market value but not on the relationship between Canadian and French firms' earnings and their market value.
Aerts, Cormier, and Magnan (2008)	To provide analysis of firms' environmental disclosure policy	Enhanced environmental disclosures are positively associated with analysts' earnings forecasts accuracy; the association is reduced for firms with extensive analyst following.
Johnston, Sefcik, & Soderstrom (2008)	To examine the market valuation of a firm's bank of sulfur dioxide emission allowances	The market responds positively to a firm's bank of sulfur carbon emission allowances.
Griffin and Sun (2013)	To examine shareholder's response to a unique set of disclosures about climate change through CSR Newswire services	Stock price significantly increases around the CSR newswire release date.
Clarkson et al. (2013)	To examine the relationship between toxic emission disclosure and firm value	Information provided by current Toxic Releases Inventory (TRI) is value relevant information in five highly polluting U.S. industries.

Matsumura et al.'s (2014)	To identify the effects of voluntary carbon emission disclosure on firm value	Market penalize all firms for their carbon emissions with a stronger penalty for firms that do not disclosure emission information.
Plumlee et al. (2015)	To examine the relationship between the quality of a firm's voluntary environmental disclosure and firm value.	Voluntary environmental disclosure quality is associated with firm value.
Dhaliwal et al. (2011)	To examine the impact of the initiation of voluntary CSR disclosure on firms' cost of equity capital.	Firms that initiated voluntary CSR disclosure through a CSR standalone report and had strong CSR performance experience reduction in the cost of equity capital.
Dhaliwal, Radhakrishnan, Tsang, & Yang (2012)	To examine the relationship between CSR disclosure and analyst forecast accuracy	The initiation of stand-alone CSR reports is associated with lower analyst forecast error.
Cho et al., (2013)	To examine the effect of a firm's CSR performance on information asymmetry.	CSR performance is negatively associated with bid-ask spread.
Attig, Cleary, El Ghouli, and Guedhami (2014)	To examine the effect of a firm's CSR performance on investment sensitivity to cash flows.	Investment sensitivity to cash flows decreases as a firm's CSR score increases.
Lourenço et al. (2014)	To investigate whether the market valuation is higher for firms with a reputation for sustainability leadership than for firms without such reputation.	The market valuation is higher for firms with a reputation for sustainability leadership than for firms without such reputation.
Dhaliwal, Li, Tsang, & Yang, (2014)	To examine the impact of CSR disclosure on the cost of equity capital in an international setting	CSR disclosure is negatively associated with the cost of equity capital and the relationship is more pronounced in countries with stakeholder orientation.

Harjoto & Jo (2015)	To examine the differential impact of a firm's voluntary CSR activities on analyst dispersion, stock return volatility, cost of capital, and firm value	Voluntary CSR intensities reduce analyst dispersion of earnings forecast, volatility of stock return and cost of capital, and increase firm value
Lys, Naughton & Wang (2015)	To investigate whether CSR expenditures lead to positive firms' future financial performance through investment or signaling	CSR expenditures lead to positive firms' future financial performance through signaling
Semenova and Hassel (2015)	To examine the convergent validity of the environmental ratings of several popular environmental databases.	The ratings have common dimensions, but on aggregate, they do not converge.
Christensen (2016)	To investigate whether corporate accountability reporting helps protect firm value	Firms that disclose their CSR activities are less likely to engage in high-profile misconduct. When high-profile misconduct occurs, firms that have previously issued CSR reports experience a less negative stock price reaction.
Hummel and Schlick (2016)	To investigate the relationship between CSR performance and CSR disclosure	Firms with superior CSR performance choose high-quality disclosure while firms with poor CSR performance choose low-quality disclosure.
Capelle-Blancard and Petit (2017)	To examine the current weighting used by most studies on CSR	CSR ratings used by most recent studies underweight environmental and corporate governance concern. The aggregation and equal weighting of CSR scores misrepresent corporate social performance and the difference in CSR among different industries.

Ott, Schiemann, &
Gunther (2017)

To examine whether the relationship between environmental performance and related disclosures is complementary or substitutive.

Overall, the complementary relationship dominates the substitutive relationship. For carbon-intensive industries, the relationship is complementary.

REFERENCE

- Aerts, Walter, Denis Cormier, and Michel Magnan. 2008. "Corporate Environmental Disclosure, Financial Markets and the Media: An International Perspective." *Ecological Economics* 64 (3): 643–59. doi:10.1016/j.ecolecon.2007.04.012.
- Anthony, Joseph H, and K Ramesh. 1992. "Association between Accounting Performance Measures and Stock Prices." *Journal of Accounting and Economics* 15 (2–3): 203–27. doi:10.1016/0165-4101(92)90018-W.
- Attig, Najah, Sean W. Cleary, Sadok El Ghouli, and Omrane Guedhami. 2014. "Corporate Legitimacy and Investment-Cash Flow Sensitivity." *Journal of Business Ethics* 121 (2): 297–314. doi:10.1007/s10551-013-1693-3.
- Barth, Mary E, and Maureen F McNichols. 1994. "Estimation and Market Valuation of Environmental Liabilities Relating to Superfund Sites." *Journal of Accounting Research* 32 (3): 177–209. doi:10.2307/2491446.
- Blacconiere, Walter G., and W. Dana Northcut. 1997. "Environmental Information and Market Reactions to Environmental Legislation." *Journal of Accounting, Auditing & Finance* 12 (2). SAGE PublicationsSage CA: Los Angeles, CA: 149–78. doi:10.1177/0148558X9701200203.
- Blacconiere, Walter G., and Dennis M. Patten. 1994. "Environmental Disclosures, Regulatory Costs, and Changes in Firm Value." *Journal of Accounting and Economics* 18 (3): 357–77. doi:10.1016/0165-4101(94)90026-4.
- Capelle-Blancard, G., and A. Petit. 2017. "The Weighting of CSR Dimensions: One Size Does Not Fit All." *Business & Society*, 106–12. doi:10.1177/0007650315620118.
- Chatterji, Aaron, Rodolphe Durand, David Levine, and Samuel Touboul. 2015. "Do Ratings of Firms Converge? Implications for Managers, Investors and Strategy Researchers." *Strategic Management Journal*, no. 2015: 1–30.
- Cho, Seong Y., Cheol Lee, and Ray J. Pfeiffer. 2013. "Corporate Social Responsibility Performance and Information Asymmetry." *Journal of Accounting and Public Policy* 32 (1). Elsevier Inc.: 71–83. doi:10.1016/j.jaccpubpol.2012.10.005.
- Christensen, Dane M. 2016. "Corporate Accountability Reporting and High-Profile Misconduct." *Accounting Review* 91 (2): 377–99. doi:10.2308/accr-51200.
- Clarkson, Peter M., Xiaohua Fang, Yue Li, and Gordon Richardson. 2013. "The Relevance of Environmental Disclosures: Are Such Disclosures Incrementally Informative?" *Journal of Accounting and Public Policy* 32 (5). Elsevier Inc.: 410–31. doi:10.1016/j.jaccpubpol.2013.06.008.
- Clarkson, Peter M, Yue Li, Gordon D Richardson, and Florin P Vasvari. 2008. "Revisiting the Relation between Environmental Performance and Environmental Disclosure : An Empirical Analysis" 33: 303–27. doi:10.1016/j.aos.2007.05.003.

- Cormier, Denis, and Michel Magnan. 2007. "The Revisited Contribution of Environmental Reporting to Investors' Valuation of a Firm's Earnings: An International Perspective." *Ecological Economics* 62 (3–4): 613–26. doi:10.1016/j.ecolecon.2006.07.030.
- Dhaliwal, Dan, Oliver Zhen Li, Albert Tsang, and Yong George Yang. 2011. "Voluntary Nonfinancial Disclosure and the Cost of Equity Capital: The Initiation of Corporate Social Responsibility Reporting." *Accounting Review* 86 (1): 59–100. doi:10.2308/accr.00000005.
- . 2014. "Corporate Social Responsibility Disclosure and the Cost of Equity Capital: The Roles of Stakeholder Orientation and Financial Transparency." *Journal of Accounting and Public Policy* 33 (4). Elsevier Inc.: 328–55. doi:10.1016/j.jaccpubpol.2014.04.006.
- Dhaliwal, Dan, Suresh Radhakrishnan, Albert Tsang, and Yong George Yang. 2012. "Nonfinancial Disclosure and Analyst Forecast Accuracy: International Evidence on Corporate Social Responsibility Disclosure." *Accounting Review* 87 (3): 723–59. doi:10.2308/accr-10218.
- Dhaliwal, Dan, Oliver Zhen Li, Albert Tsang, and Yong George Yang. 2014. "Corporate Social Responsibility Disclosure and the Cost of Equity Capital: The Roles of Stakeholder Orientation and Financial Transparency." *Journal of Accounting and Public Policy* 33 (4). Elsevier Inc.: 328–55. doi:10.1016/j.jaccpubpol.2014.04.006.
- Gao, Feng, Ling Lei Lisic, and Ivy Xiyang Zhang. 2014. "Commitment to Social Good and Insider Trading." *Journal of Accounting and Economics* 57 (2–3). Elsevier: 149–75. doi:10.1016/j.jacceco.2014.03.001.
- Griffin, Paul A., and Yuan Sun. 2013. "Going Green: Market Reaction to CSRwire News Releases." *Journal of Accounting and Public Policy* 32 (2). Elsevier Inc.: 93–113. doi:10.1016/j.jaccpubpol.2013.02.002.
- Griffin, Paul A, David H Lont, and Yuan Sun. 2010. "The Relevance to Investors of Greenhouse Gas Emission Disclosure: The Relevance to Investors of Greenhouse Gas Emission Disclosure," 0–55.
- Harjoto, Maretno A., and Hoje Jo. 2015. "Legal vs. Normative CSR: Differential Impact on Analyst Dispersion, Stock Return Volatility, Cost of Capital, and Firm Value." *Journal of Business Ethics* 128 (1): 1–20. doi:10.1007/s10551-014-2082-2.
- Healy, Paul M., and Krishna G. Palepu. 2001. "Information Asymmetry, Corporate Disclosure, and the Capital Markets: A Review of the Empirical Disclosure Literature." *Journal of Accounting and Economics* 31 (1–3): 405–40. doi:10.1016/S0165-4101(01)00018-0.
- Hoi, Chun Keung, Qiang Wu, and Hao Zhang. 2013. "Is Corporate Social Responsibility (CSR) Associated with Tax Avoidance? Evidence from Irresponsible CSR Activities." *Accounting Review* 88 (6): 2025–59. doi:10.2308/accr-50544.
- Huang, Xiaobei Beryl, and Luke Watson. 2015. "Corporate Social Responsibility Research in Accounting." *Journal of Accounting Literature* 34. Korea Institute of Oriental Medicine: 1–16. doi:10.1016/j.acclit.2015.03.001.
- Hummel, Katrin, and Christian Schlick. 2016. "The Relationship between Sustainability Performance and Sustainability Disclosure ??? Reconciling Voluntary Disclosure Theory and

- Legitimacy Theory.” *Journal of Accounting and Public Policy* 35 (5). Elsevier Inc.: 455–76. doi:10.1016/j.jaccpubpol.2016.06.001.
- Johnston, Derek M, Stephan E Sefcik, and Naomi S Soderstrom. 2008. “The Value Relevance of Greenhouse Gas Emissions Allowances: An Exploratory Study in the Related United States SO₂ Market.” *European Accounting Review* 17 (4): 747–64. doi:10.1080/09638180802481615.
- Kim, Yongtae, Myung Seok Park, and Benson Weir. 2012. “Is Earnings Quality Associated with Corporate Social Responsibility?” *Accounting Review* 87 (3): 761–96. doi:10.2308/accr-10209.
- Kothari, S P. 2001. “Capital Markets Research in” 31: 105–231.
- Kothari, S P, Susan Shu, and Peter D Wysocki. 2009. “Do Managers Withhold Bad News?” *Source Journal of Accounting Research Journal of Accounting Research Journal of Accounting Research* 47 (1): 241–76. doi:10.1111/j.1475-679X.2008.00318.x.
- Lins, Karl V., Henri Servaes, and Ane M. Tamayo. 2017. “Social Capital, Trust, and Firm Performance: The Value of Corporate Social Responsibility during the Financial Crisis.” *Journal of Finance*. doi:10.1111/jofi.12505.
- Lourenço, Isabel Costa, Jeffrey Lawrence Callen, Manuel Castelo Branco, and José Dias Curto. 2014. “The Value Relevance of Reputation for Sustainability Leadership.” *Journal of Business Ethics* 119 (1): 17–28. doi:10.1007/s10551-012-1617-7.
- Lys, Thomas, James P. Naughton, and Clare Wang. 2015. “Signaling through Corporate Accountability Reporting.” *Journal of Accounting and Economics* 60 (1). Elsevier: 56–72. doi:10.1016/j.jacceco.2015.03.001.
- Margolis, Joshua D, Hillary Anger Elfenbein, and James P Walsh. 2009. “Does It Pay to Be Good? A Meta-Analysis and Redirection of Research on the Relationship between Corporate Social and Financial Performance.” *Journal of Chemical Information and Modeling* 53: 160. doi:10.1017/CBO9781107415324.004.
- Marquis, Christopher, and Michael W Toffel. 2012. “When Do Firms Greenwash? Harvard Environmental Economics Program.” www.hks.harvard.edu/m-rcbg/heep.
- Matsumura, Ella Mae, Rachna Prakash, and Sandra C. Vera-Muñoz. 2014. “Firm-Value Effects of Carbon Emissions and Carbon Disclosures.” *Accounting Review* 89 (2): 695–724. doi:10.2308/accr-50629.
- Mewilliams, Abigail, and Donald Siegel. 2001. “Corporate Social Responsibility : A Theory of the Firm Perspective Author (S): Abigail McWilliams and Donald Siegel Source : The Academy of Management Review, Vol. 26, No . 1 (Jan ., 2001), Pp. 117-127 Published by Academy of Management Stable U.” *Academy of Management Journal* 26 (1): 117–27.
- MSCI. 2015. “MSCI ESG KLD STATS : 1991-2014.”
- Ott, Christian, Frank Schiemann, and Thomas Günther. 2017. “Disentangling the Determinants of the Response and the Publication Decisions: The Case of the Carbon Disclosure Project.” *Journal of Accounting and Public Policy* in-press. Elsevier Inc.

doi:10.1016/j.jaccpubpol.2016.11.003.

- Pelozo, John. 2006. "Using Corporate Social Responsibility as Insurance for Financial Performance." *California Management Review* 48 (2): 52–73. doi:10.2307/41166338.
- Plumlee, Marlene, Darrell Brown, Rachel M. Hayes, and R. Scott Marshall. 2015. "Voluntary Environmental Disclosure Quality and Firm Value: Further Evidence." *Journal of Accounting and Public Policy* 34 (4). Elsevier Inc.: 336–61. doi:10.1016/j.jaccpubpol.2015.04.004.
- Rezaee, Zabihollah. 2016. "Business Sustainability Research: A Theoretical and Integrated Perspective." *Journal of Accounting Literature* 36. Korea Institute of Oriental Medicine: 48–64. doi:10.1016/j.acclit.2016.05.003.
- Richardson, Alan J., and Michael Welker. 2001. "Social Disclosure, Financial Disclosure and the Cost of Equity Capital." *Accounting, Organizations and Society* 26 (7–8): 597–616. doi:10.1016/S0361-3682(01)00025-3.
- Semenova, Natalia, and Lars G Hassel. 2015. "On the Validity of Environmental Performance Metrics." *Journal of Business Ethics* 132 (2). Springer Netherlands: 249–58. doi:10.1007/s10551-014-2323-4.
- Shahzad, A. M., and M. P. Sharfman. 2015. "Corporate Social Performance and Financial Performance: Sample-Selection Issues." *Business & Society*. doi:10.1177/0007650315590399.
- US EPA, OEI, OIAA, TRIPD. 2017. "Learn about the Toxics Release Inventory." Accessed June 21. <https://www.epa.gov/toxics-release-inventory-tri-program/learn-about-toxics-release-inventory>.
- US EPA, OA. 2017. "Overview of Greenhouse Gases." Accessed June 21. <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>.
- Watson, Luke, and Xiaobei Beryl. 2015. "Corporate Social Responsibility Research in Accounting." *Journal of Accounting Literature* 34: 1–16.
- Watson, Luke, and Xiaobei Beryl Huang. 2015. "Corporate Social Responsibility Research in Accounting." *Journal of Accounting Literature* 34: 1–16.