6-2022

# Essays on financial materiality of corporate social responsibility and corporate strategies

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# ESSAYS ON FINANCIAL MATERIALITY OF CORPORATE SOCIAL RESPONSIBILITY AND CORPORATE STRATEGIES

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**SINGAPORE MANAGEMENT UNIVERSITY**

**2022**

# Essays on Financial Materiality of Corporate Social Responsibility and Corporate Strategies

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Submitted to Lee Kong Chian School of Business in partial fulfilment of the requirements for the Degree of Doctor of Philosophy in Business (Strategic Management & Organisation)

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I hereby declare that this thesis / dissertation is my original work and it has been written by me in its entirety. I have duly acknowledged all the sources of information which have been used in this thesis / dissertation.

This thesis / dissertation has also not been submitted for any degree in any university previously.

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6 June 2022

**Essays on Financial Materiality of Corporate Social Responsibility and Corporate Strategies**

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## ABSTRACT

This dissertation investigates how the endorsement of certain social activities by CSR standards impacts stakeholders' interpretation on firms' motivation of doing CSR and how managers make decisions on which specific CSR activities they would like to participate in. The first essay examines how the standards release of CSR by Sustainability and Accounting Standards Board (SASB) affects the relationship between material CSR and firm performance outcomes in terms of stock returns (for investors) and sales growth (for customers), through shaping investor and customer perceptions on the motivation underlying a firm's material CSR activities. I further argue that a sharp increase in material CSR after the SASB standards release, as a strong indicator of a firm's opportunistic response to the endorsement, is more likely to be penalized by prosocial shareholders and customers. The second essay explores what drives a firm to select different CSR investment strategies, in terms of the financial materiality of CSR. I posit that firms with stronger financial orientation, which is reflected by more analyst coverage and higher institutional ownership, are more likely to engage in financial material CSR investment, but firms with stronger social orientation, which is reflected by higher female board proportion and more liberal CEOs, are more likely to engage in financial immaterial CSR investment. In addition, these effects are moderated by firm's financial distress. The empirical results support most of arguments.

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## ACKNOWLEDGEMENT

First and foremost, I would like to express my heartfelt and deepest gratitude to my advisor Professor Heli Wang for her continuous support and guidance of my research, for her patience, motivation, and encouragement during my whole PhD journey. In the past five years, she always provided me insightful advice and feedback in every meeting, which become a great inspiration to me to continue my research. Each time I meet tough problem and seek help from her, she always responds promptly and try best to provide me constructive suggestions without any reservation. I learned a lot from her, not only on what is a good researcher like but also on how to benefit others around me. All these inspire me to be a rigorous researcher and a selfless teacher in future. Thank you, Prof Wang. I could not have imagined having a better advisor and mentor for my PhD study.

My sincere thanks also go to my committee members: Professor GuiDeng Say, for his generous suggestions on my dissertation writing; Professor Reddi Kotha, for always encouraging me to think outside the box and do meaningful research; and Professor Sterling Huang, for taking time to serve on my committee and give me feedback. I am also grateful to Professor Gokhan Ertug, Xuesong Geng, David Gomulya, Daniel Mack, Adam Tatarynowicz, Cyndi Zhang, for their precious support and help during my PhD study.

In addition, I want to thank my classmates and cohorts. It was quite pleasant to have a journey with them together. A special thanks to Qiwen Yu, a great friend and desk-mate. We had a lot of lunches together and were always

there for being a good listener of any topic in work and life. I would also like to thank my cohort Eugene Tung, who is always kind and give me encouragement.

This endeavor would not have been possible without my family, especially my mom and dad. Their unconditional love is the reason for me to be myself. I am especially grateful for their complete support on my each choice, even it means we have to apart from each other for a very long time. I would also like to expend my sincere thanks to my grandparents, who I lost during my PhD study. I miss them forever.

Lastly but most importantly, to my fiancé Xiaoyu Meng, thank you for making the past five years and all times we spent together more meaningful. Your love and emotional support helped me through the dark times. Without you believing in me, I never would have made it. It’s the most wonderful experience to pursue a PhD with you together.

## INTRODUCTION OF BOTH ESSAYS

Corporate Social Responsibility (CSR) has gained momentum in practice and academia over the past several decades. Although Friedman's argument that CSR is a pure corporate expenditure which damages firms' value was dominant among public in the 1960s and 1970s, as environmental and social problems become increasingly frequent and serious nowadays, more and more people believe corporations should be responsible for social problems. Companies with a good CSR profile are more likely rewarded by not only their stakeholders, but also shareholders and capital markets. Consistent with this, the concept of "doing well by doing good" or "creating shared value" gains attentions by practitioners and scholars. Accordingly, building on early CSR research which investigating the relationship between CSR as a whole and financial performance, more recent research explores which specific CSR activities can play a role of strategic tool that fulfil companies' social responsibility and enhance financial value as well. The financial and social dual attributes of CSR have not been well developed in theoretical perspective and the potential conflicts between these two attributes have not been analysed clearly, which require more focused and finer-grained research in this area.

Both essays of this dissertation focus on the financial materiality of CSR issues, adding to recent arguments about whether the financial implication of corporate prosocial activities should be a crucial consideration in CSR-related strategic decisions and how managers take actions about financial materiality of CSR in operational practices. The first essay investigates the possible negative consequences of revealing financial implication of doing CSR. The second essay explores the multiple drivers that might shape a company's decision on

making financially material and immaterial CSR investments. Both of essays focus on the coexisting but probably incompatible attributes of companies' prosocial involvement: the social nature and the instrumental implication of CSR, and examines how the inherent social attribute and extrinsic financial implication jointly affect managers' behavior and stakeholders' interpretation regarding CSR activities.

In the first essay, I propose that how stakeholders perceive companies' motivation behind their CSR activities matters. Relying on a newly published CSR standards which provide guidance for companies and investors what kind of CSR issues are related to financial performance, I examine whether the financial implication of CSR enables stakeholders to interpret firms' motivation behind doing CSR is profit-seeking and how different stakeholders response differently to the perceived self-serving motivations. The results are consistent with my arguments. I found that conventional shareholders are more likely to rewards firms' profit-seeking motivation behind CSR because it is consistent with their interests of pursuing profits, whereas prosocial shareholders and customers tend to discount the value of CSR when they perceive firms' motivation behind CSR is not purely sincere, because it is against their expectations on firms to do genuine CSR.

In the second essay, I posit that different orientations within a company shape firms' choices on the instrumental function of CSR differently. In more detail, I investigate how financial orientation and social orientation affect companies' decision on CSR investments, in terms of the financial materiality of CSR. I propose that firms with stronger financial orientation are more likely to engage in financially material CSR investment, but firms with stronger social

orientation are more likely to engage in financially immaterial CSR investment. I also argue that an increase of firm's financial distress moderates the positive relationships above. The empirical findings support my arguments.

In a nutshell, my dissertation contributes to research on financial utility of CSR. My studies explore the antecedents and outcomes of companies' CSR investment with financial implications. From antecedent perspective, my research illustrates firms' dominant orientation, financial- or social-driven, determines whether or not they will make financially material CSR investments. From outcome perspective, my findings suggest the perceived motivation behind CSR investment with profit-seeking purpose influence the economic value created by these CSR activities.

## ESSAY 1: Material CSR and Firm Performance Outcomes: The Role of CSR Endorsement and Stakeholder Perceptions


## ABSTRACT

We argue that the release of CSR standards by Sustainability and Accounting Standards Board (SASB) affects the relationship between material CSR and firm performance outcomes in terms of stock returns (for investors) and sales growth (for customers), through shaping investor and customer perceptions on the profit-seeking motivation underlying a firm's material CSR activities. We further argue that a sharp increase in material CSR after the SASB standards release, as a strong indicator of a firm's opportunistic response to the standards, is more likely to be penalized by prosocial shareholders and customers. Using a sample of 1410 U.S. listed firms during the period 2000-2018 and taking advantage of the CSR materiality standards by SASB that took place between 2013 and 2016, we find support for these arguments.

## INTRODUCTION

Among the widely-held economic justifications for corporate social responsibility (CSR) are the notions of "creating shared value" or "doing well by doing good" (Freeman, Harrison, Wicks, Parmar, & De Colle, 2010; Porter & Kramer, 2011; Vishwanathan, Van Oosterhout, Heugens, Duran, & Van Essen, 2020). For most firms, however, identifying prosocial activities that generate both social and economic value is far from being straightforward but more often an uncertain and ambiguous endeavour (Baron, 2001; Crane, Palazzo, Spence, & Matten, 2014; McWilliams & Siegel, 2001; Wieland, 2017). The emergence of CSR standards, such as Global Reporting Initiatives (GRI), the International Standard Organization (ISO) 14001, the Carbon Disclosure Project (CDP) and so on, has helped firms tremendously in terms of measuring and benchmarking their social value creation against peers, as well as facilitating reporting of CSR information to key stakeholders (De Colle, Henriques, & Sarasvathy, 2014; Fortanier, Kolk, & Pinkse, 2011; Gilbert & Rasche, 2007). While most of these CSR standards provide metrics and guidance in evaluating firm social performance, they are, however, largely silent in explicitly identifying social activities that also generate economic value.

Some recent CSR standards sought to fill this gap, by classifying corporate social activities based on their explicit implications for economic value creation. Prominent among this category includes standards published by the Sustainability Accounting Standards Board (SASB), which offer a list of CSR activities, labelled as 'material', that are expected to be positively

associated with investor interest and firm economic profit. Indeed, existing studies have generally found a positive relationship between material CSR, classified based on SASB standards, and firm financial performance (Flammer, 2021; Khan, Serafeim, & Yoon, 2016). Thus SASB standards are able to provide guidance for firms to identify social activities that have the potential of creating "shared value".

On the other hand, by revealing and confirming the positive link between material CSR and economic profit, the establishment of SASB standards may have some unintended consequences. In particular, it may raise doubts among observing stakeholders and the general public about the motivation behind firms' social actions, attributing CSR to a profit-seeking purpose, instead one rooted in a genuine desire to serve the society. To the extent that perceived firm motivation for CSR can affect some stakeholders' willingness to provide cooperation and support to the firm (Du, Bhattacharya, & Sen, 2010; Foreh & Grier, 2003; Yoon, Gürhan-Canli, & Schwarz, 2006), the establishment of standards like those of SASB may have important implications for stakeholder responses, which subsequently affect organizational performance outcomes pertaining to the stakeholders.

Academic research and management practice focused on the positive impacts of CSR standards have largely overlooked such unintended consequences of CSR standards such as SASB. The purpose of this paper is thus twofold. First, it explores how SASB's endorsement of CSR activities affects the organizational outcomes of CSR, through the mechanism highlighted above. Second, diverse stakeholder groups raise heterogeneous perceptions and attitudes toward firms' motivation. For example, while conventional

shareholders may be agreeable with CSR embodying a profit-seeking purpose, customers and the general public are likely to attach greater importance to the sincerity of CSR for a primary social purpose. We thus explore in depth the responses of heterogeneous stakeholders towards the release of CSR standards and the perceived profit-seeking motivation for firms' CSR. These diverse reactions are captured through a research design that examines the differential impact of CSR standards release on the relationship between material CSR and firm performance outcomes pertaining to different stakeholders.

In particular, we contrast conventional shareholders who prioritize profits against other stakeholders who are more oriented towards social responsibility. While these other stakeholders may include multiple groups, we focus our discussion on customers and prosocial shareholders, whose impacts on firm performance outcomes are more direct and observable (customers may have a direct influence on firm sales, whereas prosocial shareholder can affect firm stock returns). For conventional shareholders, CSR standards by SASB aligns with their expectation for CSR to generate economic value for the firm. Therefore, after the release of SASB standards, they would respond favourably to firms' material CSR activities, as reflected in a more positive effect of material CSR on *stock returns* after standards release . By contrast, we propose that prosocial shareholders and customers tend to be concerned about the "impure" motivation behind CSR. Thus, with a stronger inference of the profit-seeking motivation for material CSR after the standards release, their support towards material CSR is likely dampened. We further argue that a sharp increase in material CSR after SASB standards release sends a stronger signal of a firm's profit-seeking motivation, such that conventional shareholders will respond

more positively to firms' material CSR activities, whereas prosocial shareholders and customers will respond more negatively.

We tested these arguments with a sample of listed firms in the United States between 2000 and 2018. Using CSR materiality standards successively published by SASB from 2013 to 2016 as exogenous endorsement events, we examined how the establishment of SASB standards affect the relationship between material CSR and different measures of firm financial performance pertaining to different stakeholders' support.

## BACKGROUND

Growing attention towards CSR in research and practice has increased demand for transparent and accurate information on firm's social practices (Aguilera, Rupp, Williams, & Ganapathi, 2007; Campbell, 2007; Waddock, Bodwell, & Graves, 2002). However, the multiple dimensions of CSR and ambiguous metrics and terminology commonly found in firms' voluntary reporting often reduce the clarity of CSR information and its comparability across firms (Aguinis & Glavas, 2012; Nason, Bacq, & Gras, 2018). In responding to these challenges, a variety of international CSR reporting standards were developed by different institutions and organizations. CSR standards, which aim to advance and harmonize firms' CSR reporting practices (Christensen, Hail, & Leuz, 2021), represent a set of predefined norms and procedures for socially responsible behavior (Gilbert & Rasche, 2007). These standards vary in their coverage of social issues, ranging from specific standards catered to a single social issue to comprehensive standards encompassing multiple CSR dimensions. The Carbon Disclosure Project (CDP) and the Fair

Labor Association (FLA) standards, for instance, focus more narrowly on environmental and labor rights issues, whereas the Global Reporting Initiative (GRI) and certified management standards (e.g. the International Standard Organization (ISO) Standards) offer a broader issue coverage. In addition to improved standardization in scope, content, and approach in CSR reporting, these CSR metrics also play an important role of facilitating firms' communication of their CSR practices with various stakeholders (Dierkes & Antal, 1985).

While most standards provide metrics concerning the social impacts of CSR activities and thus primarily focus on the social value creation of CSR, a notable exception is the SASB standards, which differentiates CSR activities based on their potential for financial value creation. SASB asserts explicitly that it adopts shareholders' standpoint to "develop and disseminate sustainability accounting standards that help public corporations disclose material, decision-useful information to investors (SASB, 2017)". In consultation with investors, companies, researchers, and other professional market participants extensively in its standard-setting process (SASB, 2021), for each of the 77 industries it covers, SASB identifies the environmental, social and governance (ESG) issues most relevant to financial performance as material CSR issues.

More generally, what SASB classifies as material CSR often concerns issues related to the core business of firms in a particular industry such that investments in these areas would directly improve its operational efficiency (Guiral, Moon, Tan, & Yu, 2020). For example, an automobile manufacturer adhering to the material CSR category of 'raw material and recycling' within the SASB standards would optimize its usage of raw materials and reduce

wastage from scrapped vehicles, which helps lower overall cost. Material CSR efforts may also translate into improved employee productivity. For example, employee safety is a material CSR issue for the coal mining industry that recognizes its hazardous working conditions. Strict regulations that prevent accidents can create a culture of safety among employees, minimizing operational delays and litigation. Consistent with these expectations, existing studies have generally found a positive relationship between material CSR and shareholder value (Flammer, 2021; Khan et al., 2016). In this study, we go beyond verifying the relationship between material CSR and firm market performance to examine how SASB's endorsement for certain CSR practices influences stakeholders' inference of the motivation behind material CSR, which in turn affects the material CSR-performance relationship.

## THEORY AND HYPOTHESES

Third-party endorsement, such as the approval or validation of firms' practices by expert rating and certification agencies, is a process that "reveals credible information about otherwise hidden organizational attributes and behaviors" (King, Lenox & Terlaak, 2005: 1982). In addition to explicit endorsements by various agencies, there are also more implicit endorsements in the form of a third-party's willingness to associate or provide support to firms. For example, a firm's relational ties with prominent alliance partners or venture capital firms can also serve as endorsements of its underlying quality, enabling the firm to achieve superior market evaluation (Stuart, Hoang & Hybels, 1999; Pollock, Chen, Jackson, & Hambrick, 2010), secure greater resources (Hallen 2008), increase reputation (Graffin & Ward, 2010) and even survive longer

(Baum & Oliver, 1991). Given its informational benefits, endorsements are particularly valuable in contexts of information uncertainty and weak industry legitimacy (King et al., 2005; Sine, David & Mitsuhashi, 2007). More recent work, however, have begun to explore ways in which third-party endorsements can hurt firms and their endorsers by creating information redundancies, uncovering deficiencies in firm attributes and breeding overconfidence leading to poor strategic decisions (Gomulya, Jin, Lee, & Pollock, 2019; Lanahan, Armanios & Joshi, 2022). Building on these recent developments, our study examines how CSR standards by SASB working as endorsements that enable stakeholders to perceive firms' CSR motivation is pursuing financial returns, leading to negative outcomes.

In the context of CSR, endorsements by well-known independent organizations that set reporting standards occur when these organizations certify, or formally acknowledge, firm procedures that satisfy social-related criteria (Feddersen & Gilligan, 2001; Doh, Howton, Howton, & Siegel, 2010). Such endorsements are deemed more credible when the evaluative capabilities of certifying organizations are perceived to be strong (Stuart et al.,1999; Sine et al., 2007). For example, the Global Reporting Initiative (GRI) provides guidance in assessing and evaluating an organization's impacts on the economy, environment, and people and endorses firm practices in concordance with these values. SASB standards, on the other hand, emphasize the materiality of firm CSR in terms of its potential financial outcomes, providing endorsements for firms' financially material CSR activities, which contrasts against other reporting standards that do not explicitly link CSR to financial outcomes.

CSR standards also supplement the information available to firm stakeholders and potentially influence their interpretations. Information asymmetries often exist between the firm and its stakeholders that create barriers to timely and accurate information about the firm's operations (Feddersen & Gilligan, 2001; Higgins & Gulati, 2006). In particular, CSR activities are often associated with unclear motivation and ambiguity in their implementations and impacts, such that CSR standards provide an alternative information source which can be essential for stakeholders' decisions regarding the firm. In the paragraphs that follow, we elaborate on how the classification of material CSR by SASB, which explicitly links types of CSR to financial outcomes, affects the perceptions and evaluations of various stakeholders: conventional shareholders, prosocial shareholders and customers, and their responses to material CSR after the release of standards.

**CSR Standards Release and Conventional Shareholder Reactions to Material CSR**

Shareholders generally value wealth maximization over social objectives and thus traditionally had viewed corporate altruism as a wasteful and costly distraction. In his famous critique, Milton Friedman argues that social responsibility is a socialist doctrine, and that corporate executives responsible for decisions and actions in business should not exercise social responsibility. Instead, they should concentrate on increasing the profits of their companies (Friedman, 1970). In this view, serving collective societal interests fell under the mandate of the government and non-profit organizations (NGOs); and voluntary CSR investments not oriented towards profit maximization, if any,

should be reserved only for firms that enjoy market power (Baumol & Blackman, 1991).

Yet, with the substantial increase in demand for CSR from governments, stakeholders and the general society, conventional shareholders and capital markets recognize that a certain level of CSR investment is essential to gain legitimacy and meet stakeholder expectations (Campbell, 2007; Margolis & Walsh, 2003). CSR efforts are rewarded by stakeholders who value social issues, through greater customer willingness to pay (Lev, Petrovits, & Radhakrishnan, 2010), increased employee productivity (Greening & Turban, 2000), strengthened supplier relationship (Bendixen & Abratt, 2007) and so on, resulting in better corporate financial performance. Moreover, as the concepts of "creating shared value" and "strategic CSR" gained momentum over the past decades, CSR is believed to have the potential to serve as a source of firm differentiation strategy that helps firms gain economic benefits and even competitive advantages. Shareholders therefore have generally become more supportive of CSR, acknowledging that certain social activities may be aligned with firm financial performance (Jones, 1995; McWilliams & Siegel, 2001). Conventional shareholders are therefore more likely to support CSR activities which are expected to improve a firm's profitability.

On the other hand, it is unlikely that all social activities are able to enhance firm financial performance. Anecdotal evidences can be easily found in corporate world to confirm this point. For example, since 1987, Merck donated the drug Mectizan (ivermectin) "as much as needed, for as long as needed" to combat river blindness afflicting third world country citizens, absorbing global distribution, customs clearance, and administration costs

without significant payoffs, even in a long run (Merck, nodate; Waters, Rehwinkel & Burnham, 2004). Given the apparent costs associated with investing in CSR but often indirect and non-immediate impact of the investments on firm financial outcomes, there is often ambiguity in the extent to which CSR activities can lead to positive economic outcomes and enhanced shareholder value. Indeed, according to a review by Margolis and Walsh (2003) on 127 studies investigating the relationship between corporate social performance (CSP) and corporate financial performance (CFP), there is no clear evidence that CSP in general increases firm value. Therefore, despite conventional shareholders' increasing recognition of the economic value of CSR in general, the ambiguity in specific social activities' performance implications is likely to mitigate conventional shareholders' level of support for firm social activities.

The release of CSR materiality standards by SASB reduces such ambiguity, providing assurance that firms are more likely to derive direct financial benefits from CSR actions which are classified as material. Accordingly, we surmise that being assured of the performance benefits of material CSR, conventional shareholders are more willing to provide stronger support for such CSR activities after the release of CSR standards by SASB. This would result in a stronger association between material CSR and annual stock returns. Thus, we predict:

*Hypothesis 1a: After the release of CSR materiality standards by SASB, the positive effect of material CSR on annual stock return becomes stronger.*

**CSR Standards Release and Pro-social Stakeholders' Reactions to Material CSR**

In contrast to conventional shareholders, other firm stakeholders, including prosocial shareholders as a distinct class of investors and non-shareholding stakeholders such as customers, may evaluate corporate social action based on both the social outcomes of action and its underpinning motivation (Cuypers, Koh, & Wang, 2016; Du et al., 2010; Fein & Hilton, 1994; Foreh & Grier, 2003). Prosocial stakeholders generally expect CSR activities to reflect firms' altruistic and voluntary commitment towards improving social welfare, rather than merely serving instrumental purposes (Aguilera et al., 2007; Markey, Markey, & Barney, 2007). Accordingly, new information that suggest a firm's CSR might be driven by profit-seeking motives constitutes an expectation violation, leading stakeholders to discount and even sanction CSR initiatives. (Cuypers et al., 2016; Godfrey, Merrill, & Hansen, 2009). Research at the individual level provides similar implications, highlighting that when individuals are perceived to behave prosocially to obtain extrinsic material or monetary rewards, the social image created by these prosocial activities will decrease (Ariely, Bracha, & Meier, 2009; Bénabou & Tirole, 2006).

Prosocial stakeholders' potential negative response to CSR with a profit-seeking motivation is not limited to the expectation violation concerning current CSR activities, but may also be extended to expectations about the firm's future actions. In particular, stakeholders may question the firm's commitment to carry out social actions consistently under unfavorable economic conditions. That is, if a firm engages in CSR with a profit-seeking purpose, it is reasonable to suspect that the firm may not be able to carry out the social actions over time,

as situations may change so that engaging in such social actions are no longer profitable (Wang & Choi, 2013). Such abrupt cessation of unprofitable CSR activities may further cause severe social damages, including exacerbating problems of community dependencies on the firm and increase beneficiaries' vulnerabilities (Idemudia & Ite, 2006). Even worse, a firm engaging in socially responsible actions for profit today may also engage in socially irresponsible behavior for profit in the future. For example, a recent study has shown that oil companies take credits from the "insurance" effect created by their past CSR investments and subsequently engage in socially irresponsible activities (Luo, Kaul, & Seo, 2018).

For the above reasons, stakeholders' response to a firm's social activities is likely influenced by the motivations behind these activities. However, firms' motivations of CSR are often not easily observable (Wu, Zhang, & Xie, 2020). Stakeholders may rely on a firm's behavior, CSR disclosure, or other external information sources as inference (Hill & Jones, 1992; Kölbel, Busch, & Jancso, 2017), which is far from accurate. For example, while customers may infer the sincerity of firms' CSR activities through advertising behaviors or corporate reputation, these sources are highly susceptible to firm manipulation (Gomulya & Mishina, 2017). The SASB standards of CSR materiality may serve as another, perhaps more credible, source of information to infer a firm's motivations underlying its social actions. By officially labelling certain CSR issues as material based on their relevance to firm profits and shareholder value, the positive performance implication of material CSR is made more transparent to stakeholders.

*The Reaction of Pro-Social Shareholders*

Shareholders with prosocial preferences actively seek investment opportunities that reflect genuine and sincere CSR beyond profit seeking motives. Prosocial shareholders derive non-financial utility from socially responsible investments and invest in firms that share similar ethical values (Bauer & Smeets, 2015; Bollen, 2007; Chowdhry, Davies, & Waters, 2019). These investors utilize non-financial screening criteria such as corporate social performance for portfolio inclusion (Renneboog, Ter Horst, & Zhang, 2008, 2011), even accepting suboptimal investment returns or higher premiums for socially responsible firms (Heinkel, Kraus, & Zechner, 2001; Gollier & Pouget, 2014; Riedl & Smeets, 2017). For instance, prosocial participants of a Dutch pension fund preferred to invest their savings in sustainable investment options, even when they expected lower financial returns, suggesting that prosocial shareholders prioritize social over financial motivation when making investment decisions (Bauer, Ruof, and Smeets, 2021).

With a strong social value preference, prosocial shareholders are likely to pay greater attention to CSR-related information, such as the release of SASB standards, which has the potential to enhance their understanding of the social performances of the firms they invest in. Based on the discussions above, CSR materiality endorsement that reveals the financial implications of certain CSR activities may lead prosocial shareholders to infer that firms' investments in material CSR are profit-driven. Given that prosocial stakeholders prefer firms to engage in CSR with a genuine concern for social issues, the revelation of a profit-seeking motive for CSR is likely to negatively influence prosocial shareholders' evaluation of the firm. Thus, we predict:

*Hypothesis 1b: For firms with a high shareholder prosocial tendency, after the release of CSR materiality standards by SASB, the positive effect of material CSR on annual stock return is weaker.*

*The Reaction of Customers*

Similar to prosocial shareholders, customers are a representative group of stakeholders who care about firms' genuine commitment to mitigate social concerns and are averse to the exploitation of CSR for profits. Indeed, many customers value firms' genuine actions to address social issues, and are even willing to pay a premium price for the products of such firms. (Anselmsson, Bondesson, & Johansson, 2014). On the other hand, research on consumer behavior has found that customers are unlikely to view all corporate social activities as sincere (Barone, Miyazaki, & Taylor, 2000; Brown & Dacin, 1997; Creyer & Ross, 1997; Sen & Bhattacharya, 2001). Instead, whether customers reward firms' CSR activities through greater willingness to purchase is largely dependent on how they perceive the motivation underlying firms' social involvements (Barone et al., 2000; Becker-Olsen, Cudmore, & Hill, 2006). In particular, customers tend to attribute CSR evidences, such as sustainability reports, CSR-related advertisements, slogans, or press releases, to either a self-serving motive focused on pursuing profits, or a public-serving motive focused on contributing to the society (Becker-Olsen et al., 2006; Du et al., 2010; Skarmeas & Leonidou, 2013). They are likely to avoid purchasing from insincere firms perceived to be self-serving, but support public-serving firms who act out of genuine concern for social issues (Foreh & Grier, 2003; Sen & Bhattacharya, 2001).

As with pro-social shareholders, upon CSR materiality standards release, customers are more likely to attribute firms' motivation for material CSR as profit seeking, which contradicts their "public-serving" expectations of CSR activities. It further raises customers' concern that when CSR's profit potential declines, the firm would discontinue its social practices and even engage in irresponsible behaviors for profits. Accordingly, we expect that after the release of CSR materiality standards, customers' reluctance to support profit-seeking CSR translates into reduced consumption of products, resulting in lower sales growth. Therefore, we predict:

*Hypothesis 1c: After the release of CSR materiality standards by SASB, the positive effect of material CSR on sales growth becomes weaker.*

**Firm Opportunistic Responses to Standards Release and Stakeholders' Reactions**

Third-party endorsed CSR standards are known to increase firms' conformity to codified reporting rules, suggesting that the establishment of the SASB materiality standards would similarly pressure firms towards material CSR investments (Campbell, 2007; Matten & Moon 2008; Husted, Montiel, & Christmann, 2016; Luo, Wang, & Zhang, 2017). Moreover, the unique feature of SASB standards linking material CSR to firm financial performance implies that even in the absence of legitimacy pressure, a profit-seeking firm would have the motivation to increase material CSR investment in response to SASB's endorsement for financially material CSR practices. Before the release of SASB standards, some firms might not have sufficient knowledge and experience to identify the types of CSR activities that also enhance financial performance. When this information is made available by SASB, firms aiming to increase

profitability from social activities may decide to allocate significantly greater resources to material CSR.

For a firm that decides to increase its material CSR activities after the standards release, especially if the increase is substantial, such an abrupt "jump" in material CSR efforts provides a strong indicator for stakeholders to infer that the firm's motivation for CSR is to pursue profits rather than for prosocial reasons. Conventional shareholders, in particular, are likely to regard a firm's timely responses towards financially material market information, such as SASB standards, more positively. Specifically, SASB's endorsement for value-enhancing CSR issues enables a firm to better justify large investments in material CSR that is closely connected to its core business, in that it helps improve its longer-term competitiveness through scale economies and minimization of 'wasteful' CSR activities, ameliorating conventional shareholders' reservations towards CSR. The opportunity for investors to shape a firm's competitiveness through financially material CSR is further evidenced by Chen, Dong and Lin (2020) who found that institutional ownership, representing the interests of conventional shareholders, is one of the main drivers of firms' increase in material CSR activities after the establishment of SASB standards. We expect firms' profit-seeking response to SASB's standards to amplify the effect of its material CSR investments, demonstrating even greater commitment towards its financial goals and presenting itself as an attractive investment target with a strong desire to align with conventional shareholders' interests. Thus, we predict:

*Hypothesis 2a: A significant increase in material CSR after the release of CSR materiality standards by SASB strengthens the positive effect of material CSR on annual stock return.*

Unlike conventional shareholders who are likely to reward firms' material CSR more if they have significant increase in material CSR after SASB standards release, prosocial shareholders may hold a more negative view. Prior research suggests that frequent changes in CSR practices, or temporally inconsistent CSR behaviors indicate firms' insincerity and opportunism, reflecting their self-interested or profit-seeking, rather than others-regarding intentions of engaging in CSR (Tang, Hull, & Rothenberg, 2012; Wang & Choi, 2013). As argued earlier, the SASB endorsement may cast doubt on the profit-seeking motivations of firms' prior material CSR investments, but prosocial shareholders lack explicit evidence to validate suspicions of such motivations. A significant increase in material CSR afterSASB standards release, on the other hand, may function as a confirmation to prosocial shareholders' suspicions, by sending a strong and observable signal of the firm's profit-seeking orientation. As a result, prosocial shareholders likely to respond more negatively to material CSR conducted by firms which "jump" in material CSR, compared to firms do not "jump".

Similar to prosocial shareholders, we expect that customers would also respond less positively to material CSR when firms have a "jump" in material CSR after SASB standards release. Research on consumer skepticism asserts that customers might be inherently skeptical of for-profit organization's social initiatives (Webb & Mohr, 1998), especially when organizations aggressively promote their CSR efforts (Du et al., 2010). Firms' "jump" in material CSR

behavior may thus reinforce customers' skepticism towards the firms' motivation for social initiatives. Therefore, for socially conscious customers, a sharp increase in firms' material CSR likely elicits a less positive response to firms' CSR activities, leading to decreased willingness to buy products from those firms, as reflected in a lower sales growth.

Furthermore, a firm's opportunistic response may cause prosocial shareholders and customers to lose confidence in its overall CSR strategy. From these stakeholders' standpoint, a firm that responds to SASB standards by increasing material CSR immediately could easily decrease its CSR investment if CSR is perceived to be financially unattractive, demonstrating a lack of genuine commitment. A lack of commitment not only hinders the development of meaningful CSR competencies, but could even lead firms to justify socially irresponsible behavior as a means to recover prior losses associated with CSR. With this consideration, prosocial shareholders and customers would show less support to firms that significantly increased their material CSR after the release of SASB standards. We thus predict:

*Hypothesis 2b: For firms with a high shareholder prosocial tendency, a significant increase in material CSR after the release of CSR materiality standards by SASB more likely weakens the positive effect of material CSR on annual stock return.*

*Hypothesis 2c: A significant increase in material CSR after the release of CSR materiality standards by SASB more likely weakens the positive effect of material CSR on sales growth.*

## METHOD

### Data and Sample

To construct our sample, we started by obtaining CSR information from the MSCI KLD database from 2000 to 2018. KLD contains firms' social performance ratings annually in seven dimensions: community, corporate governance, diversity, employee relations, environment, human rights, and products. Each dimension is further evaluated based on several "strengths" and "concerns" items, which represent respectively a firm's positive and negative ESG performance indicators. The CSR information is then mapped to SASB's publication of the industry-level material CSR standards to obtain the material CSR index for each firm.

We then obtained stock price return data from Center for Research in Security Prices (CRSP) and financial performance and other firm-level data from the Compustat database. In addition, because we want to test prosocial shareholders' responses, data for constructing the prosocial shareholder measure was obtained from the Institutional Shareholder Services (ISS) database. Additional firm-level variables such as analyst coverage and CEO duality were obtained from the I/B/E/S database and ISS database respectively. Following previous studies (e.g., Banker, Mashruwala, & Tripathy, 2006; Fitza, 2014; Kim, 2018; Lisowsky, 2010), we excluded firms from the financial industry (SIC codes from 6000 to 6999) because of the differences in characteristics and financial ratios between financial firms and other firms. After further dropping observations with missing data, our final sample included 1,410 unique firms corresponding to 10,263 firm-year observations between 2000 and 2018. In order to test Hypothesis 2a-2c, which are about how

a significant increase in material CSR after the release of CSR materiality standards by SASB affects stakeholder responses, we used a subsample that only consists of observations in the post-standards period, which included 850 unique firms corresponding to 2,414 firm-year observations between year 2014 and 2018.

## Dependent Variables

***Annual stock return* and *Sales growth.*** We use *annual stock return* and *sales growth* as our performance measures, capturing shareholders' and customers' responses to firms' material CSR actions respectively. *Annual stock return* was calculated by compounding a firm's monthly holding period stock returns (including dividends) over a one-year period (Arthaud-Day, Certo, Dalton, & Dalton, 2006; Krause & Semadeni, 2013). *Sales growth*, which reflects customers' willingness to purchase a focal firm's products in a given year, was measured by the percentage of change in sales revenue from the prior year to current year (Davies, Chun, & Kamins, 2010, Peng, 2014).

## Independent and Moderating Variables

***Material CSR.*** For each industry, we mapped all material CSR issues listed in SASB's standards to the MSCI KLD data that are widely used and provided by an independent third party social-rating agency. As mentioned earlier, professional research analysts assess firms' social performance across a comprehensive set of dimensions concerning the community, corporate governance, diversity, employee relations, environment, human rights, and products. Within each dimension are "strengths" and "concerns" CSR items, which are assigned a value of 1 if a firm meets the assessment criteria for a strength (concern) of CSR item, and otherwise 0. We matched material CSR

issues listed in SASB standards to both KLD strengths and concerns indicators, given that the material CSR issues cover both positive and negative perspectives of firms' ESG performance. For instance, according to SASB standards, one of material CSR issues for the hotel and lodging industry is water management. This issue is then matched to two KLD items: 'water stress' (env-str-h), which indicates whether companies proactively employ water efficient processes, water recycling and alternative water sources, and 'water management' (env-con-k), which indicates whether companies are involved in water management controversies such as water use-related legal cases and higher water cost criticism. We then calculated the *material CSR score* for each firm by subtracting the aggregate concerns from the aggregate strengths score of material CSR (Chen et al., 2020; Khan et al., 2016). *Material CSR* ranged from -2 to 2 with an average of -0.017, which is in line with existing studies (Chen et al., 2020; Khan et al., 2016).

***CSR materiality standards release.*** To test Hypothesis H1a-H1c, we compared the effect of material CSR on firm performance before and after the release of CSR materiality standards by SASB. Materiality standards pertaining to different sectors (each sector comprising of several industries) were released successively at different time points between 2013 and 2016 [1]. We created a dummy variable *post* based on the standards release year of each industry sector, coded as follows: "1" for the years after standards release, and "0" otherwise.

[1] SASB published the provisional materiality standards for the Health Care sector in 2013, the Financials, Resource Transformation, Technology & Communication, Extractives & Minerals Processing, Transportation and Services sectors in 2014, the Consumer Goods, Food & Beverage, and Renewable Resources & Alternative Energy sectors in 2015, and the Infrastructure sector in 2016.

***Shareholder Prosocial Tendency.*** The variable *shareholder prosocial tendency* is measured by the extent of socially-related shareholder activism towards a firm in terms of the number of socially responsible investing (SRI)-related proposal submissions. Prosocial shareholders can exert pressures on firm managers to deal with social issues, through submitting SRI-related proposals to the board, which reflects the extent to which the shareholders of a firm care about social issues (Flammer, 2015; McDonnell, King, & Soule, 2015; Reid & Toffel, 2009; Vasi & King, 2012). We thus use the SRI-related shareholder activism to proxy for how prosocial a firm's shareholders are. Following prior studies (Flammer, Toffel, & Viswanathan, 2019), we used the logarithm of the number of SRI-related shareholder proposals a firm received each year to measure SRI-related shareholder activism and proxy for prosocial shareholders.

***Jump in material CSR.*** To test Hypothesis 2a-2c, we identify firms that significantly increased their investments in material CSR after the CSR materiality standards release. In particular, we constructed the *jump in material CSR* variable in two steps. First, we calculate the difference in a firm's material CSR score before and after standards release, which is measured by the material CSR score in the year after standards release minus the average material CSR score over the three years preceding standards release. This pre-standards three-year average score minimizes the possibility that abnormal CSR score in one year will drive the value of usual CSR performance. Second, we took firms with material CSR score difference at the top quintile in each industry (based on four-

digit SIC code) as experiencing a "jump" in material CSR, which is coded as "1", and "0" otherwise[2].

**Control Variables**

We controlled for several firm-level factors that could affect firm's financial performance in terms of both annual stock return and sales growth. *Firm size* is measured as the logarithm of a firm's total assets (McWilliams & Siegel, 2001). *Firm age* is the number of years since a firm's first appearance in the Compustat database. To account for financial structure that may affect a firm's performance (Mishra & Modi, 2013), we included *financial leverage*, which is measured by the ratio of total debt to equity. To control for the impact of R&D expense, we included *R&D intensity*, measured as R&D expense over total assets. Following previous studies (e.g., Blagoeva, Mom, Jansen, & George, 2020; Giarratana & Mariani, 2014; Uotila, Maula, Keil, & Zahra, 2009), we replaced missing values of R&D expense with value zero and created a *R&D missing dum*my coded as 1 to control for this replacement. In addition, to control for the impact of financial slack and input resources expenditure on firms' operation activities, which closely related to firm performance, we included *free cashflow*, which is calculated as operating income less taxes, interest and dividends paid divided by total assets; and *selling, general, and administrative expenditure* (*SG&A*), which is calculated as the ratio of selling, general, and administrative expense to sales.

[2] As robustness checks, we applied alternative cutoffs to identify "jump" (e.g., using the top decile instead of top quintile of material CSR score difference) and found consistent results. In addition, we identified firms who "jump" (for whatever reason) in years before release of SASB standards. The results are insignificant, which is consistent with our expectation.

We further account for two corporate governance factors that could influence firm performance: CEO duality and analyst coverage. *CEO duality*, or whether the CEO also serves as the chair of board of directors, may affect the extent to which the board exercises its governance role effectively. *Analyst coverage*, works as an external monitoring mechanism that may affect firm performance (Yu, 2008). It was measured by the mean of the monthly numbers of earnings forecasts that a firm receives each year.

Prior studies have found that the level firm diversification is associated with its financial performance (Amit & Livnat, 1988; Lang & Stulz, 1994; Rumelt, 1974), we thus also controlled for *diversification* of a firm, measured as the Herfindahl index based on a firm's sales in each of its four-digit SIC business segments (Stimpert & Duhaime, 1997). To account for the differences in the level of market competition across industries, we controlled for industry-level *market concentration*, measured as the five-firm concentration ratio in each industry for each year. To minimize influences by potential outliers in the dataset, we winsorized all continuous variables at the 1 percentile in each tail. We also lagged all control variables by one year.

**Estimation Methods**

Taking advantage of our panel data, we employed a firm fixed-effects ordinary least squares (OLS) model to account for time-invariant unobserved heterogeneity across firm. To account for the effect of any year-specific and firm-invariant omitted variables, we also included the year fixed effects. We clustered standard errors at the firm level to account for time-series dependence of observations within a firm. To test hypotheses H2a-c, because *jump in material CSR* does not vary within a firm, we exploited between-firm variation

to estimate the effect of *jump in material CSR* on stakeholders' response. We therefore adopt industry-level fixed effects instead of firm-level effects. In addition, we addressed potential concerns for endogeneity in the change of material CSR level and stakeholder perceptions before and after the release of SASB standards and in firms choice' of "jump" in material CSR after standards release by employing a difference-in-differences (DID) analysis and Heckman sample-selection model estimation.

## RESULTS

Table 1 reports the descriptive statistics and the pairwise correlations of model variables. The variance inflation factor (VIF) for our models ranges from 1.03 (attributable to *CEO duality*) to 2.48 (attributable to *Firm size*), with a mean value of 1.47. There are no individual VIF score higher than the rule-of thumb cut-off 10 (Neter, Kutner, Nachtsheim, & Wasserman, 1996), suggesting the absence of substantial multicollinearity.

----------INSERT TABLE 1 ABOUT HERE----------

Table 2 reports the results of the tests on Hypothesis 1a, 1b & 1c, regarding the effects of material CSR and its endorsement on firm performance. Models 1 and 2 include only control variables predicting annual stock return and sales growth respectively. *Firm size* and *Free cashflow* are negatively associated with both annual stock return and sales growth. *Financial leverage*, *Firm age* and *Selling, general, and administrative expenditure* (*SG&A*) are found to be positively related to annual stock returns; and *SG&A* is also

positively associated with sales growth. These results are largely consistent with those of the existing literature.

----------INSERT TABLE 2 ABOUT HERE----------

Models 3 and 4 provide baseline results showing the effect of material CSR on firm performance, as indicated by annual stock return and sales growth respectively. The coefficient of *material CSR* in model 3 is positive and statistically significant (β=0.021, p=0.000), in which a unit increase in material CSR leads to a 2.1% increase in annual stock return, suggesting a generally positive effect of material CSR on market performance. Similarly, the coefficient of *material CSR* in model 4 is positive and statistically significant (β=0.010, p=0.001), with 1 unit increase in material CSR leading to a 1% increase in sales growth.

Models 5-7 test Hypothesis 1a-1c, which examines the effect of endorsement for CSR materiality on different stakeholders including conventional shareholders, prosocial shareholders, and customers, respectively. Hypothesis 1a states that after the release of CSR materiality standards by SASB, the positive effect of material CSR on annual stock return becomes stronger. Model 5 includes the *material CSR*post* interaction term and yields a positive and significant (β=0.026, p=0.017) coefficient. Thus Hypothesis 1a is supported, suggesting that after the release of SASB standards, efforts in material CSR receive stronger support from shareholders in general. To test Hypothesis 1b which states that after the release of CSR materiality standards by SASB, the positive effect of material CSR on annual stock return is weaker for firms with stronger shareholder prosocial tendency, we include a three-way interaction

among *Material CSR*, *Post*, and *Shareholder prosocial tendency* (*material CSR*post*prosocial shareholders*) in Model 6. The negative and significant coefficient on the term (β=-0.015, p=0.035) reveals that for firms whose shareholders are more prosocial, the CSR materiality standards effect is weaker than that of firms whose shareholders are less prosocial, lending support for H1b. In model 7, we test Hypothesis 1c, which argues that after the release of CSR materiality standards by SASB, the positive effect of material CSR on sales growth becomes weaker. The interaction term *material CSR*post* is not significant (β=0.007, p=0.301), which implies that the CSR materiality standards does not change the impact of material CSR on firm sales growth. This suggests that customers do not decrease support to firms through their purchase behavior. Hypothesis 1c is, therefore, unsupported.

Our second set of analyses focuses on the post standards period to examine whether a significant increase in material CSR after SASB standards release(i.e. *jump in material CSR*), which signals a strong profit-seeking motivation by the firm, will influence the perceptions and responses of different stakeholders. As noted earlier, given that the key variable jump in material CSR is invariant over the sample period, Hypothesis 2a-2c is tested based on a comparison across firms. We thus used industry rather than firm fixed effects models for the analyses.

----------INSERT TABLE 3 ABOUT HERE----------

Table 3 presents the results for Hypothesis 2a-2c. Model 8 and Model 9 include *material CSR*, *jump in material CSR*, and all control variables in the post-standards subsample. Model 10 and Model 11 test Hypothesis 2a and 2b,

which postulate that conventional shareholders will become more supportive of firms who significantly increase in material CSR after the release of SASB standards, but prosocial shareholders less likely to support these firms. The interaction term of *material CSR*jump* in Model 10 is not significant (β=0.007, p=0.712), indicating that in the post-standards period conventional shareholders' do not react to material CSR differentially between firms that significantly increased their material CSR and firms that do not. Hypothesis 2a is thus not supported. In Model 11, we include *prosocial shareholder* with *material CSR* and *jump*. The three-way interaction term of *material CSR*jump*prosocial shareholder* in Model 11 is negative and significant (β=-0.028, p=0.017), suggesting that prosocial shareholders are more averse to the jump in material CSR than other shareholders. Thus, Hypothesis 2b is supported. In Model 12, we test Hypothesis 2c, which states that customers will show less support to firms that significantly increased their material CSR after the release of SASB standards than firms who do not. The interaction term *material CSR*jump* is negatively significant (β=-0.024, p=0.041), indicating a weakened effect of material CSR on sales growth when there is a jump. Hypothesis 2c is thus supported.

**Robustness Checks**

We undertook several additional analyses to ensure the robustness of our results. First, taking advantage of SASB's staged announcements of CSR materiality standards between 2013 to 2016 across different sectors, we used difference-in-differences (DID) analysis to control for the possible endogeneity of changes in stakeholders support during the sample period. Second, we used Heckman treatment effect model to control for the endogeneity of firms' choice

of "jump" in material CSR after SASB standards release. Third, considering that the within-firm variance of the key independent variables such as *material CSR* and *CSR materiality standards release* are relatively small within each firm, we used alternative estimation method, random effects model, as another robustness check. The results are overall highly consistent with our main results. To save space, details of these robust tests are shown in Appendix.

## DISCUSSION

This study examines how the SASB endorsement of financially material CSR issues influences stakeholders' perception on a firm's CSR actions. We posit that different stakeholders perceive and respond to the release of standards of CSR materiality differently. Conventional shareholders view the CSR materiality standards more positively because the financial benefits of material CSR align with their interests of wealth maximization. In contrast, other stakeholders such as prosocial shareholders and customers view the standards more negatively, given they care more about the sincerity behind firm CSR actions and are averse towards the profit-seeking motivation behind doing CSR. Moreover, we consider how firms' reaction to the SASB standards release further impact stakeholders' perception. We propose that stakeholders will interpret a firm's significant increase in material CSR post-standards as a signal reinforcing its profit seeking motives, which is further supported by conventional stakeholders but discounted by prosocial shareholders and customers.

The empirical results support most of our arguments except for Hypothesis 1c, proposing customers will response to material CSR less

positively after the SASB standards release, and Hypothesis 2a, stating that conventional shareholders will response more positively to material CSR conducted by firms which have a significant increase in material CSR after SASB standards release. For Hypothesis 1c, a possible reason for the lack of support might be that customers are not as sensitive as shareholders to the release of SASB CSR standards, given that investors constitute the primary audience for SASB. Moreover, with less access to such standards, it would take longer for customers to learn about them and adjust their perceptions of material CSR accordingly. For Hypothesis 2a, while conventional shareholders are more likely to value material CSR after SASB standards release, significant increases in material CSR may constitute a redundant signal that does not convey additional useful information that change their perception of material CSR (Dineen & Allen, 2016).

This study makes several contributions. First, we extend the literature on CSR standards adoption and stakeholder theory. Studies rooted in the institutional perspective hold that conforming to CSR standards help firms gain legitimacy from stakeholders (Campbell, 2007; Husted et al., 2016; Luo et al., 2017) and in turn generate positive organizational outcomes such as enhanced reputation and stakeholder relationships (Blair, Williams, & Lin, 2011; Terlaak & King, 2006). However, what has been overlooked in the literature is that some standardization of CSR activities may cater for certain stakeholder groups who have consistent interests with the position of the CSR standard, but incompatible with the values of some other stakeholder groups. Our study fills this gap by exploring the possible negative effects of the establishment of CSR standards

and providing new evidence on the heterogeneity among stakeholders' responses.

Second, material CSR's explicit focus on shareholder value shares similarities with the concept of strategic CSR. Our study thus contributes to the strategic CSR literature by exploring an overlooked potential downside of strategic CSR. Prior studies emphasized the positive financial benefits of strategic CSR, or CSR issues that have the potential to generate shared value. They have cautioned against spreading a firm's resources across all social problems, and instead advocated focusing on CSR issues that reap financial benefits while addressing social concerns (Jo & Harjoto, 2011; Jones, 1995; Porter & Kramer, 2006). Building on the literature on CSR motivations, which argues that the salient profit-seeking motivation behind CSR might discount stakeholders' positive perceptions on CSR (Cuypers et al., 2016; Godfrey et al., 2009; Sen & Bhattacharya, 2001), our study examines CSR materiality endorsement and firms' sharp increase in material CSR after endorsement as events that provides new information for stakeholders to reinterpret firms' underlying motivations. One important implication from the study is that when stakeholders infer firms' motivation of doing CSR as profit-seeking, the economic value from strategic CSR might be negatively affected.

Third, our study adds to the literature on the role of shareholders by taking a nuanced view of shareholders in terms of their differences in social orientation. The existing management literature usually emphasizes the financial-orientated nature of shareholders when examining the relationship between shareholders and the corporation (Adams, Licht, & Sagiv, 2011; Lamin & Zaheer, 2012; Soleimani, Schneper, & Newburry, 2014). While some studies

attend to shareholder activism towards social issues and examine how such shareholder activism affects firms' behavior (Lee, Gupta, & Hambrick, 2020; Lenox & Eesley, 2009; Reid & Toffel, 2009), few studies compare the difference between conventional shareholders and shareholders who are prosocial per se. In fact, there are significant differences between conventional shareholders and prosocial shareholders in terms of their investing preference, value, and expectations. In this study, we take the heterogeneity of shareholders into consideration and examine how they respond differently to CSR materiality standards and firm social actions, due to differences in their attitudes towards firms' motivation behind CSR. Furthermore, there has been some debate among recent studies on socially responsible investing and prosocial investors about whether prosocial investors, in making socially impactful investments, are incentivized by the pursuit of financial returns or social motives (Larcker & Watts, 2020; McLachlan & Gardner, 2004; Riedl & Smeets, 2017). Our study provides evidences consistent with some related literature that prosocial shareholders make impacting investing mainly due to their own social preferences rather than financial considerations (Barber, Morse, & Yasuda, 2021; Rossi, Sansone, Van Soest, & Torricelli, 2019; Riedl & Smeets, 2017).

Our study also provides implications for managers who seek to communicate CSR information to stakeholders. While emphasizing a profit-seeking intention of CSR activities may generate support from shareholders, it could risk alienating prosocial stakeholders. This echoes the view that multiple stakeholders of a firm have different, and even conflicting, interests and demands with regard to the firm (Li, Xia, & Zajac, 2018; Oliver, 1991; Rowley, 1997). How to make stakeholder governance effective in managing relations

between a firm and its multiple stakeholders is worth considering by both scholars and practitioners (Amis, Barney, Mahoney, & Wang, 2020). Managers should anticipate that stakeholders hold different, and at times antithetical, perceptions towards firms' CSR motivations such that managing the associated performance tradeoffs is warranted. In addition, our finding of firms' significant increase of material CSR after standards release is discounted by prosocial stakeholders suggests that managers should not only differentiate the CSR responses of shareholders vs. other stakeholders, but also differentiate among different types of shareholders. Therefore, managers need to take potential reactions of various different stakeholders into consideration when engaging in CSR, especially when planning to make significant change in CSR strategy.

This study offers opportunities for future research. First, due to limited post-standards observation periods, we were unable to investigate how the effect of endorsement for CSR practices on different firm performance parameters changes over time. Doing so could lend deeper insight into our non-finding of customers' reaction to firms' material CSR after the announcement of the SASB standards, by ascertaining whether customers require a longer time to learn about the standards and accordingly adjust their perceptions. With a longer observation period, scholars could further examine whether organizational outcomes converge over time. For instance, decreased sales growth could translate to reduced shareholder value, which might, in a long run, be reflected in lower annual returns. Second, this study focuses on customers and shareholders as representative key firm stakeholder groups to investigate the difference in their expectations for CSR in terms of profit seeking versus altruistic motivations. Examining how the arguments apply to other

stakeholders, like employees, suppliers and communities, may offer a more comprehensive account of stakeholders' interpretation of CSR materiality standards, although negative sentiments from employees and suppliers are likely correlate with customers' responses leading to overall decreased firms' sales. In addition, we were unable to observe stakeholder perceptions directly, but rather proxy their subsequent responses through performance outcome measures. Future study could explore richer data collected through surveys to more directly measure the perceptions and responses of stakeholders.

## CONCLUSION

This study examines how the endorsement for certain CSR activities influences different stakeholders' perceptions on firm motivation behind CSR, and further influences the performance implications of such CSR activities. The results have documented the fact that highlighting possible financial gains from prosocial activities might unintentionally damage the value vested in CSR activities. The effect depends on the stakeholders' standpoint and whether firms make opportunistic actions deliberately. Our work provides new insights for understanding how the inferred motivation behind CSR would influence firm performance, by activating various stakeholders' perceptions and support on the firm.

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# TABLE

**TABLE 1 Descriptive Statistics and Correlations (N=10,263)**

| | | Mean | S.D. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Annual stock return | 0.14 | 0.43 | 1.00 | | | | | | | | | | | |
| 2 | Sales growth | 0.08 | 0.20 | -0.02 | 1.00 | | | | | | | | | | |
| 3 | Material CSR | -0.06 | 0.87 | -0.00 | 0.01 | 1.00 | | | | | | | | | |
| 4 | Post | 0.24 | 0.42 | -0.07 | -0.01 | 0.23 | 1.00 | | | | | | | | |
| 5 | Prosocial shareholder | 0.16 | 0.38 | -0.01 | -0.07 | -0.09 | -0.02 | 1.00 | | | | | | | |
| 6 | Jump in material CSR | 0.35 | 0.48 | 0.00 | -0.00 | 0.02 | 0.05 | 0.02 | 1.00 | | | | | | |
| 7 | Firm size | 8.03 | 1.52 | -0.01 | -0.09 | -0.02 | 0.10 | 0.48 | 0.07 | 1.00 | | | | | |
| 8 | Firm age | 31.29 | 18.06 | -0.00 | -0.13 | -0.01 | 0.08 | 0.24 | 0.06 | 0.43 | 1.00 | | | | |
| 9 | Leverage | 0.75 | 1.69 | 0.02 | -0.02 | -0.01 | 0.03 | 0.04 | 0.03 | 0.16 | 0.09 | 1.00 | | | |
| 10 | R&D intensity | 0.03 | 0.05 | 0.03 | 0.08 | 0.08 | 0.01 | -0.08 | -0.01 | -0.18 | -0.17 | -0.09 | 1.00 | | |
| 11 | R&D missing dummy | 0.40 | 0.49 | -0.01 | -0.03 | -0.09 | -0.03 | 0.03 | -0.01 | 0.17 | 0.11 | 0.07 | -0.44 | 1.00 | |
| 12 | Free cashflow | 0.08 | 0.07 | -0.04 | -0.01 | 0.03 | -0.03 | -0.00 | -0.02 | -0.11 | -0.12 | -0.11 | -0.05 | -0.11 | 1.00 |
| 13 | SG&A | 0.21 | 0.18 | 0.01 | 0.07 | 0.09 | 0.01 | -0.10 | -0.04 | -0.28 | -0.24 | -0.12 | 0.57 | -0.44 | -0.03 |
| 14 | CEO duality | 0.62 | 0.49 | 0.02 | -0.01 | -0.09 | -0.18 | 0.11 | -0.04 | 0.13 | 0.11 | -0.01 | -0.07 | 0.01 | -0.01 |
| 15 | Analyst coverage | 11.98 | 7.54 | -0.04 | 0.01 | 0.07 | 0.07 | 0.33 | 0.05 | 0.58 | 0.03 | -0.00 | 0.08 | -0.05 | 0.11 |
| 16 | Diversification | 0.25 | 0.27 | 0.02 | -0.07 | -0.05 | -0.02 | 0.06 | 0.04 | 0.19 | 0.33 | 0.04 | -0.13 | -0.02 | -0.04 |
| 17 | Market concentration | 0.31 | 0.19 | 0.03 | -0.04 | 0.04 | -0.03 | 0.04 | 0.01 | 0.02 | 0.02 | -0.01 | -0.08 | -0.13 | 0.04 |

| | | Mean | S.D. | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|
| 13 | SG&A | 0.21 | 0.18 | 1.00 | | | |
| 14 | CEO duality | 0.62 | 0.49 | -0.05 | 1.00 | | |
| 15 | Analyst coverage | 11.98 | 7.54 | 0.03 | 0.07 | 1.00 | |
| 16 | Diversification | 0.25 | 0.27 | -0.15 | 0.09 | -0.07 | 1.00 |
| 17 | Market concentration | 0.31 | 0.19 | 0.03 | 0.04 | -0.05 | 0.20 |

**TABLE 2 The Effects of Material CSR and Standards Release on Firm Performance**

| **Stakeholders' Response** | Model 1 **Overall shareholder** | Model 2 **Customer** | Model 3 **Overall shareholder** | Model 4 **Customer** | Model 5 **Conventional shareholder** | Model 6 **Prosocial shareholder** | Model 7 **Customer** |
|---|---|---|---|---|---|---|---|
| Variables | DV=Annual stock return | DV=Sales growth | DV=Annual stock return | DV=Sales growth | DV=Annual stock return **H1a** | DV=Annual stock return **H2a** | DV=Sales growth **H3a** |
| Material CSR | | | 0.021 | 0.010 | 0.015 | 0.024 | 0.008 |
| | | | (0.000) | (0.001) | (0.008) | (0.000) | (0.008) |
| Post | | | 0.021 | -0.024 | 0.014 | -0.013 | -0.026 |
| | | | (0.246) | (0.058) | (0.429) | (0.514) | (0.047) |
| Material CSR*Post | | | | | 0.026 | 0.004 | 0.007 |
| | | | | | (0.017) | (0.733) | (0.310) |
| Prosocial shareholder (PS) | | | | | | 0.002 | |
| | | | | | | (0.593) | |
| Material CSR*PS | | | | | | 0.006 | |
| | | | | | | (0.104) | |
| Post*PS | | | | | | -0.014 | |
| | | | | | | (0.040) | |
| Material CSR*Post*PS | | | | | | -0.015 | |
| | | | | | | (0.035) | |
| Firm size | -0.125 | -0.084 | -0.124 | -0.083 | -0.124 | -0.124 | -0.083 |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Firm age | 0.074 | -0.016 | 0.078 | -0.014 | 0.081 | 0.082 | -0.013 |
| | (0.020) | (0.347) | (0.014) | (0.408) | (0.011) | (0.011) | (0.435) |
| Leverage | 0.006 | 0.002 | 0.006 | 0.002 | 0.006 | 0.006 | 0.002 |
| | (0.070) | (0.121) | (0.066) | (0.125) | (0.070) | (0.065) | (0.128) |
| R&D intensity | 0.209 | -0.320 | 0.229 | -0.309 | 0.224 | 0.222 | -0.310 |
| | (0.512) | (0.122) | (0.472) | (0.136) | (0.479) | (0.482) | (0.132) |
| R&D missing dummy | -0.025 | -0.023 | -0.025 | -0.023 | -0.026 | -0.027 | -0.023 |
| | (0.390) | (0.163) | (0.392) | (0.161) | (0.374) | (0.362) | (0.156) |
| Free cashflow | -0.402 | -0.249 | -0.406 | -0.254 | -0.406 | -0.407 | -0.254 |
| | (0.000) | (0.001) | (0.000) | (0.001) | (0.000) | (0.000) | (0.001) |
| SG&A | 0.214 | 0.223 | 0.215 | 0.223 | 0.217 | 0.210 | 0.223 |
| | (0.005) | (0.031) | (0.005) | (0.031) | (0.005) | (0.006) | (0.031) |
| CEO duality | 0.004 | -0.006 | 0.004 | -0.006 | 0.005 | 0.004 | -0.006 |
| | (0.693) | (0.336) | (0.689) | (0.343) | (0.664) | (0.683) | (0.352) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Analyst coverage | -0.005 | -0.001 | -0.005 | -0.001 | -0.005 | -0.005 | -0.001 |
| | (0.000) | (0.086) | (0.000) | (0.055) | (0.000) | (0.000) | (0.054) |
| Diversification | 0.049 | -0.000 | 0.050 | 0.001 | 0.052 | 0.052 | 0.001 |
| | (0.137) | (0.979) | (0.127) | (0.958) | (0.111) | (0.110) | (0.931) |
| Market concentration | 0.057 | 0.023 | 0.060 | 0.025 | 0.062 | 0.062 | 0.026 |
| | (0.195) | (0.306) | (0.172) | (0.270) | (0.159) | (0.166) | (0.262) |
| Constant | -0.460 | 1.189 | -0.560 | 1.137 | -0.616 | -0.632 | 1.122 |
| | (0.494) | (0.001) | (0.408) | (0.002) | (0.366) | (0.359) | (0.002) |
| Firm fixed effects | YES | YES | YES | YES | YES | YES | YES |
| Year fixed effects | YES | YES | YES | YES | YES | YES | YES |
| Observations | 10,263 | 10,263 | 10,263 | 10,263 | 10,263 | 10,263 | 10,263 |
| $R^2$ | 0.360 | 0.150 | 0.361 | 0.152 | 0.361 | 0.362 | 0.152 |
| Number of firms | 1,410 | 1,410 | 1,410 | 1,410 | 1,410 | 1,410 | 1,410 |

Note: Standard errors are clustered by firm, p-values are shown in parentheses.

**TABLE 3 The Effect of Jump in Material CSR on Firm Performance, Based on Post-Standards Sample**

| **Stakeholders' Response** | Model 8 **Overall shareholder** | Model 9 **Customer** | Model 10 **Conventional shareholder** | Model 11 **Prosocial shareholder** | Model 12 **Customer** |
|---|---|---|---|---|---|
| Variables | DV=Annual stock return | DV=Sales growth | DV=Annual stock return **H2a** | DV=Annual stock return **H2b** | DV=Sales growth **H2c** |
| Material CSR | 0.018 | 0.009 | 0.016 | 0.015 | 0.017 |
| | (0.030) | (0.178) | (0.068) | (0.097) | (0.030) |
| Jump | -0.021 | -0.006 | -0.023 | -0.021 | 0.003 |
| | (0.163) | (0.553) | (0.141) | (0.342) | (0.783) |
| Material CSR*Jump | | | 0.007 | -0.035 | -0.024 |
| | | | (0.712) | (0.037) | (0.041) |
| Prosocial shareholder (PS) | | | | -0.001 | |
| | | | | (0.860) | |
| Material CSR*PS | | | | 0.000 | |
| | | | | (0.973) | |
| Jump*PS | | | | 0.003 | |
| | | | | (0.758) | |
| Material CSR*Jump*PS | | | | -0.028 | |
| | | | | (0.017) | |
| Firm size | 0.005 | -0.019 | 0.004 | 0.006 | -0.019 |
| | (0.550) | (0.001) | (0.556) | (0.442) | (0.001) |
| Firm age | -0.000 | -0.001 | -0.000 | -0.000 | -0.001 |
| | (0.482) | (0.001) | (0.479) | (0.439) | (0.001) |
| Leverage | 0.000 | 0.003 | 0.000 | 0.000 | 0.003 |
| | (0.980) | (0.119) | (0.973) | (0.910) | (0.134) |
| R&D intensity | 0.560 | 0.409 | 0.555 | 0.566 | 0.425 |
| | (0.065) | (0.087) | (0.069) | (0.063) | (0.078) |
| R&D missing dummy | 0.025 | 0.005 | 0.025 | 0.026 | 0.005 |
| | (0.141) | (0.667) | (0.144) | (0.140) | (0.637) |
| Free cashflow | -0.150 | -0.212 | -0.152 | -0.154 | -0.207 |
| | (0.281) | (0.069) | (0.278) | (0.272) | (0.075) |
| SG&A | 0.055 | -0.168 | 0.055 | 0.056 | -0.167 |
| | (0.450) | (0.085) | (0.454) | (0.442) | (0.089) |
| CEO duality | 0.007 | 0.006 | 0.007 | 0.006 | 0.006 |
| | (0.575) | (0.532) | (0.579) | (0.619) | (0.519) |
| Analyst coverage | -0.001 | 0.002 | -0.001 | -0.001 | 0.002 |
| | (0.594) | (0.023) | (0.576) | (0.542) | (0.017) |
| Diversification | 0.031 | -0.020 | 0.031 | 0.029 | -0.019 |
| | (0.282) | (0.233) | (0.284) | (0.316) | (0.276) |
| Market concentration | 0.088 | -0.041 | 0.089 | 0.084 | -0.043 |
| | (0.278) | (0.473) | (0.276) | (0.305) | (0.455) |
| Constant | 0.106 | 0.303 | 0.107 | 0.090 | 0.302 |
| | (0.219) | (0.000) | (0.218) | (0.340) | (0.000) |
| Industry fixed effects | YES | YES | YES | YES | YES |
| Year fixed effects | YES | YES | YES | YES | YES |
| Observations | 2,414 | 2,414 | 2,414 | 2,414 | 2,414 |
| $R^2$ | 0.228 | 0.183 | 0.228 | 0.231 | 0.184 |
| Number of firms | 850 | 850 | 850 | 850 | 850 |

Note: Standard errors are clustered by firm, p-value are shown in parentheses.

# APPENDIX

## Robustness Checks

Several alternative tests are conducted as robustness checks. First, our findings suggest that the CSR materiality standards will influence the effect of material CSR on stakeholders' responses. However, without a natural experiment, we are not able to conclude that the change in the effect of material CSR on stakeholder support levels is purely caused by the release of SASB standards. Other unobserved factors, such as a gradual evolution in overall CSR awareness or perceptions among firm stakeholders and the public, could influence the relationship between material CSR and stakeholders during the sample period. To ameliorate such concerns, we took advantage of SASB's staged announcements of CSR materiality standards between 2013 to 2016 across different sectors. In particular, the Health Care Sector, which comprises of six related industries, received CSR materiality endorsement in 2013; whereas the Infrastructure Sector, which contained eight related industries, did not obtain endorsement until 2016. Accordingly, we employed a difference-in-differences (DID) analysis to further test Hypothesis 1a-1c, by limiting our analyses to firms in these two sectors, with firms in the Health Care Sector as our treated group, and firms in the Infrastructure Sector, as our control group. Although it is potential possible to choose any two sectors which did not experience endorsement in the same year to conduct the DID analysis, considering the possible lag effect of endorsement, we chose the above two sectors because they got endorsed first (in year 2013) and last (in year 2016) respectively. This is to ensure that there is enough time interval to observe

changes in stakeholder responses for the treated group in the post-treatment period. We accordingly restricted the sample period from 2000 to 2015. We used Coarsened Exact Matching to enhance comparability of firms, matching on firm size, Tobin's q, financial leverage, SG&A expenditure, and free cashflow in pre-treatment period. Our matched sample yielded 153 firm-year observations for the treated group and 430 firm-year observations in the control group.

----------INSERT TABLE A1 ABOUT HERE----------

Table A1 reports the results of our difference-in-differences analysis. In Model 1 and Model 2 of Table A1, we included the *post_treat* variable as our DID estimator, which is a dummy variable that equals "1" if the firm is in treated group and the time period is after the release of standards, and equals "0" otherwise. Results based on Models 3 and 4 are consistent with our findings that CSR materiality standardsmakes conventional (prosocial) stakeholders respond more positively (negatively) to material CSR activities. Model 5 lend further credence to H2c, which states that customers show less support to firms' material CSR after standards release. Notwithstanding the reduced sample size, these models show consistent and even stronger results compared with our findings for H1a-H1c in Table 2.

Second, for the analyses about the effect of jump in material CSR on stakeholder responses, it might be argued that because whether a firm increases its material CSR after the release of SASB standards is largely an endogenous choice and factors affecting this choice may also influence firm performance, the estimations are subject to sample selection bias. Since we can observe

outcomes for both treated (firms that jumped) and untreated (firms that did not jump) firms in this study, Heckman treatment effects model is appropriate to deal with the sample-selection bias (Greene, 2000). In our first stage Heckman model predicting the likelihood of significant material CSR increase, we include the percentages of firms that significantly increased their material CSR at the industry and state levels respectively as two instrumental variables. Mimetic and learning effects could influence a firm's decision to significantly increase its material CSR (Cao, Liang, & Zhan, 2019; Husted, Jamali, & Saffar, 2016), but should not have a direct impact on a firm's performance. The Wald test of independent equations in Table A2 reveal that sample-selection bias should not be an issue for analyses predicting annual stock returns, but may be a concern for analyses predicting sales growth. Models 1-6 of Table A2 presenting our two-stage regressions reveal results highly consistent with our main findings.

----------INSERT TABLE A2 ABOUT HERE----------

Third, in fixed effects models, changes in the independent variable that are small compared to changes in dependent variable may result in less efficient coefficient estimates that diverge from their true values (Clark & Linzer, 2015). Considering that in this setting, the within-firm variance of the key independent variables such as *material CSR* and *CSR materiality standards release* are relatively small within each firm, we used random effects model as a robustness check. Results in Table A3 remain consistent with our core findings.

----------INSERT TABLE A3 ABOUT HERE----------

**TABLE A1 DID Estimation of the Effects of Material CSR and Standards Release on Firm Performance**

| **Stakeholders' Response** | Model 1 **Overall shareholder** | Model 2 **Customer** | Model 3 **Conventional shareholder** | Model 4 **Prosocial shareholder** | Model 5 **Customer** |
|---|---|---|---|---|---|
| Variables | DV=Annual stock return | DV=Sales growth | DV=Annual stock return **H1a** | DV=Annual stock return **H1b** | DV=Sales growth **H1c** |
| Material CSR | 0.063 | 0.004 | 0.049 | 0.006 | 0.009 |
| | (0.000) | (0.740) | (0.003) | (0.837) | (0.437) |
| Post_treat | 0.083 | 0.068 | 0.065 | -0.295 | 0.074 |
| | (0.444) | (0.148) | (0.565) | (0.094) | (0.117) |
| Material CSR* Post_treat | | | 0.224 | -0.070 | -0.079 |
| | | | (0.059) | (0.448) | (0.034) |
| Prosocial shareholder (PS) | | | | -0.020 | |
| | | | | (0.188) | |
| Material CSR*PS | | | | -0.025 | |
| | | | | (0.072) | |
| Post_treat*PS | | | | -0.157 | |
| | | | | (0.030) | |
| Material CSR* Post_treat*PS | | | | -0.133 | |
| | | | | (0.039) | |
| Firm size | -0.118 | -0.075 | -0.134 | -0.106 | -0.069 |
| | (0.175) | (0.179) | (0.107) | (0.214) | (0.192) |
| Firm age | -0.030 | -0.030 | -0.027 | -0.028 | -0.031 |
| | (0.002) | (0.012) | (0.003) | (0.003) | (0.009) |
| Leverage | 0.062 | -0.019 | 0.061 | 0.058 | -0.019 |
| | (0.031) | (0.434) | (0.029) | (0.038) | (0.434) |
| R&D intensity | 9.710 | -9.714 | 15.115 | 14.980 | -11.627 |
| | (0.233) | (0.003) | (0.033) | (0.042) | (0.000) |
| R&D missing dummy | 0.337 | -0.344 | 0.299 | 0.250 | -0.331 |
| | (0.253) | (0.026) | (0.327) | (0.378) | (0.026) |
| Free cashflow | -0.045 | -2.018 | -0.470 | -0.559 | -1.867 |
| | (0.977) | (0.004) | (0.704) | (0.639) | (0.002) |
| SG&A | -1.323 | 0.087 | -1.246 | -1.261 | 0.060 |
| | (0.129) | (0.907) | (0.091) | (0.079) | (0.928) |
| CEO duality | -0.063 | -0.008 | -0.076 | -0.077 | -0.003 |
| | (0.103) | (0.788) | (0.047) | (0.061) | (0.913) |
| Analyst coverage | -0.017 | -0.001 | -0.017 | -0.018 | -0.001 |
| | (0.005) | (0.492) | (0.002) | (0.001) | (0.554) |
| Diversification | -0.029 | 0.065 | 0.019 | -0.003 | 0.048 |
| | (0.845) | (0.418) | (0.885) | (0.985) | (0.552) |
| Market concentration | 0.208 | -0.056 | 0.265 | 0.215 | -0.077 |
| | (0.323) | (0.670) | (0.208) | (0.276) | (0.551) |
| Constant | 2.290 | 2.465 | 2.353 | 2.221 | 2.442 |
| | (0.000) | (0.002) | (0.000) | (0.001) | (0.002) |
| Firm | YES | YES | YES | YES | YES |
| Year | YES | YES | YES | YES | YES |
| Observations | 583 | 583 | 583 | 583 | 583 |
| R-squared | 0.370 | 0.321 | 0.383 | 0.394 | 0.326 |
| Number of firms | 91 | 91 | 91 | 91 | 91 |

Note: Standard errors are clustered by firm, p-values are shown in parentheses.

**TABLE A2 Heckman Sample-Selection Models of the Effects of Jump in Material CSR on Firm Performance, Based on Post-Standards Sample**

| **Stakeholders' Response** | Model 1 **Conventional shareholder** | Model 2 **Prosocial shareholder** | Model 3 **Customer** | Model 4 **Conventional shareholder** | Model 5 **Prosocial shareholder** | Model 6 **Customer** |
|---|---|---|---|---|---|---|
| Variables | DV=Annual stock return **H2a** | DV=Annual stock return **H2b** | DV=Sales growth **H2c** | DV=Annual stock return **H2a** | DV=Annual stock return **H2b** | DV=Sales growth **H2c** |
| Material CSR | 0.009 | 0.007 | 0.015 | 0.008 | 0.007 | 0.014 |
| | (0.296) | (0.442) | (0.017) | (0.302) | (0.448) | (0.027) |
| Jump | 0.018 | 0.032 | 0.259 | -0.021 | -0.015 | 0.254 |
| | (0.634) | (0.493) | (0.000) | (0.611) | (0.732) | (0.000) |
| Material CSR*Jump | 0.022 | -0.020 | -0.032 | 0.022 | -0.020 | -0.031 |
| | (0.171) | (0.220) | (0.001) | (0.165) | (0.228) | (0.002) |
| Prosocial shareholder (PS) | | 0.005 | | | 0.005 | |
| | | (0.508) | | | (0.513) | |
| Material CSR*PS | | -0.001 | | | -0.001 | |
| | | (0.830) | | | (0.831) | |
| Jump*PS | | 0.005 | | | 0.006 | |
| | | (0.605) | | | (0.601) | |
| Material CSR*Jump*PS | | -0.027 | | | -0.027 | |
| | | (0.007) | | | (0.007) | |
| Firm size | -0.004 | -0.005 | -0.016 | -0.005 | -0.005 | -0.013 |
| | (0.538) | (0.505) | (0.011) | (0.511) | (0.472) | (0.032) |
| Firm age | -0.000 | -0.000 | -0.001 | -0.000 | -0.000 | -0.001 |
| | (0.888) | (0.764) | (0.001) | (0.924) | (0.817) | (0.000) |
| Leverage | 0.000 | 0.000 | 0.002 | 0.000 | 0.001 | 0.002 |
| | (0.960) | (0.884) | (0.457) | (0.919) | (0.836) | (0.296) |
| R&D intensity | 0.522 | 0.529 | 0.495 | 0.533 | 0.542 | 0.496 |
| | (0.068) | (0.064) | (0.032) | (0.059) | (0.054) | (0.033) |
| R&D missing dummy | 0.010 | 0.010 | -0.003 | 0.010 | 0.010 | -0.007 |
| | (0.585) | (0.571) | (0.841) | (0.572) | (0.552) | (0.564) |
| Free cashflow | -0.079 | -0.080 | -0.144 | -0.088 | -0.090 | -0.146 |
| | (0.549) | (0.546) | (0.208) | (0.502) | (0.489) | (0.198) |
| SG&A | 0.120 | 0.118 | -0.127 | 0.124 | 0.123 | -0.099 |
| | (0.091) | (0.092) | (0.041) | (0.084) | (0.084) | (0.117) |
| CEO duality | 0.005 | 0.003 | 0.004 | 0.005 | 0.003 | 0.005 |
| | (0.697) | (0.791) | (0.710) | (0.696) | (0.792) | (0.584) |
| Analyst coverage | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.002 |
| | (0.900) | (0.962) | (0.192) | (0.785) | (0.823) | (0.129) |
| Diversification | 0.041 | 0.039 | -0.040 | 0.043 | 0.042 | -0.036 |
| | (0.104) | (0.119) | (0.040) | (0.085) | (0.094) | (0.062) |
| Market concentration | 0.055 | 0.063 | -0.034 | 0.052 | 0.060 | -0.055 |
| | (0.177) | (0.124) | (0.202) | (0.196) | (0.139) | (0.037) |
| Constant | 0.252 | 0.258 | 0.096 | 0.281 | 0.291 | 0.165 |
| | (0.021) | (0.028) | (0.132) | (0.008) | (0.011) | (0.009) |
| Industry fixed effects | YES | YES | YES | YES | YES | YES |
| Year fixed effects | YES | YES | YES | YES | YES | YES |
| Log pseudo likelihood | -1855.84 | -1851.75 | -931.12 | -1927.74 | -1923.68 | -1002.03 |
| Observations | 2,414 | 2,414 | 2,414 | 2,414 | 2,414 | 2,414 |
| First Stage: DV: Jump in Material CSR | | | | | | |
| Industry % of jump firms | 3.071 | 3.071 | 2.801 | | | |
| | (0.000) | (0.000) | (0.000) | | | |
| State % of jump firms | | | | 3.180 | 3.180 | 2.273 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | (0.000) | (0.000) | (0.000) |
| Firm size | -0.022 | -0.022 | -0.010 | -0.047 | -0.047 | -0.040 |
| | (0.412) | (0.411) | (0.718) | (0.068) | (0.068) | (0.130) |
| Firm age | 0.002 | 0.002 | 0.002 | 0.004 | 0.004 | 0.004 |
| | (0.283) | (0.283) | (0.202) | (0.020) | (0.020) | (0.008) |
| Leverage | 0.011 | 0.011 | 0.012 | 0.005 | 0.005 | 0.007 |
| | (0.380) | (0.378) | (0.317) | (0.654) | (0.654) | (0.555) |
| R&D intensity | 0.715 | 0.717 | 1.182 | 1.085 | 1.085 | 1.374 |
| | (0.241) | (0.240) | (0.105) | (0.072) | (0.072) | (0.051) |
| R&D missing dummy | 0.035 | 0.035 | 0.030 | 0.088 | 0.088 | 0.072 |
| | (0.591) | (0.591) | (0.634) | (0.166) | (0.166) | (0.237) |
| Free cashflow | -0.637 | -0.640 | -0.399 | -0.480 | -0.481 | -0.330 |
| | (0.103) | (0.102) | (0.394) | (0.214) | (0.214) | (0.482) |
| SG&A | 0.261 | 0.260 | 0.107 | -0.056 | -0.056 | -0.164 |
| | (0.164) | (0.166) | (0.596) | (0.760) | (0.760) | (0.397) |
| CEO duality | -0.006 | -0.006 | -0.006 | -0.028 | -0.028 | -0.022 |
| | (0.919) | (0.915) | (0.908) | (0.608) | (0.608) | (0.677) |
| Analyst coverage | 0.014 | 0.014 | 0.012 | 0.011 | 0.011 | 0.010 |
| | (0.003) | (0.003) | (0.015) | (0.012) | (0.012) | (0.035) |
| Diversification | 0.181 | 0.181 | 0.234 | 0.113 | 0.113 | 0.177 |
| | (0.082) | (0.082) | (0.018) | (0.273) | (0.273) | (0.070) |
| Market concentration | -0.140 | -0.140 | -0.089 | -0.002 | -0.002 | 0.068 |
| | (0.370) | (0.370) | (0.552) | (0.991) | (0.991) | (0.642) |
| Constant | -1.595 | -1.595 | -1.600 | -1.455 | -1.455 | -1.175 |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Wald test of independent equations | 1.47 (0.226) | 1.43 (0.231) | 26.35 (0.000) | 0.02 (0.896) | 0.00 (0.945) | 25.14 (0.000) |

Notes: p-values are shown in parentheses

**TABLE A3 Random Effects Models of the Effects of Material CSR, Standards Release and Jump in Material CSR on Firm Performance**

| **Stakeholders' Response** | Model 1 **Overall shareholder** | Model 2 **Customer** | Model 3 **Conventional shareholder** | Model 4 **Prosocial shareholder** | Model 5 **Customer** | Model 6 **Conventional shareholder** | Model 7 **Prosocial shareholder** | Model 8 **Customer** |
|---|---|---|---|---|---|---|---|---|
| Variables | DV=Annual stock return | DV=Sales growth | DV=Annual stock return **H1a** | DV=Annual stock return **H1b** | DV=Sales growth **H1c** | DV=Annual stock return **H2a** | DV=Annual stock return **H2b** | DV=Sales growth **H2c** |
| Material CSR | 0.018 | 0.008 | 0.013 | 0.023 | 0.006 | 0.007 | 0.007 | 0.019 |
| | (0.000) | (0.002) | (0.005) | (0.000) | (0.032) | (0.394) | (0.476) | (0.009) |
| Post | 0.018 | -0.028 | 0.012 | -0.007 | -0.030 | | | |
| | (0.296) | (0.023) | (0.478) | (0.702) | (0.018) | | | |
| Material CSR*Post | | | 0.022 | -0.002 | 0.007 | | | |
| | | | (0.021) | (0.814) | (0.233) | | | |
| Prosocial shareholder (PS) | | | | 0.001 | | | 0.003 | |
| | | | | (0.819) | | | (0.683) | |
| Material CSR*PS | | | | 0.007 | | | -0.000 | |
| | | | | (0.026) | | | (0.951) | |
| Post*PS | | | | -0.010 | | | | |
| | | | | (0.120) | | | | |
| Material CSR*Post*PS | | | | -0.016 | | | | |
| | | | | (0.007) | | | | |
| Jump | | | | | | -0.026 | -0.018 | 0.007 |
| | | | | | | (0.064) | (0.401) | (0.507) |
| Material CSR*Jump | | | | | | 0.024 | -0.019 | -0.032 |
| | | | | | | (0.178) | (0.257) | (0.003) |
| Jump*PS | | | | | | | 0.005 | |
| | | | | | | | (0.621) | |
| Material CSR*Jump*PS | | | | | | | -0.028 | |
| | | | | | | | (0.010) | |
| Firm size | -0.004 | -0.019 | -0.004 | -0.003 | -0.019 | -0.005 | -0.005 | -0.018 |
| | (0.410) | (0.000) | (0.349) | (0.493) | (0.000) | (0.536) | (0.537) | (0.001) |
| Firm age | 0.000 | -0.001 | 0.000 | 0.000 | -0.001 | -0.000 | -0.000 | -0.001 |
| | (0.879) | (0.000) | (0.944) | (0.907) | (0.000) | (0.894) | (0.784) | (0.001) |
| Leverage | 0.004 | 0.002 | 0.004 | 0.004 | 0.002 | 0.001 | 0.001 | 0.003 |
| | (0.122) | (0.097) | (0.129) | (0.122) | (0.101) | (0.809) | (0.729) | (0.130) |
| R&D intensity | 0.342 | 0.078 | 0.339 | 0.346 | 0.077 | 0.523 | 0.534 | 0.554 |
| | (0.041) | (0.551) | (0.043) | (0.039) | (0.557) | (0.066) | (0.059) | (0.009) |
| R&D missing dummy | -0.003 | -0.008 | -0.003 | -0.004 | -0.008 | 0.011 | 0.011 | 0.002 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | (0.761) | (0.291) | (0.773) | (0.728) | (0.293) | (0.550) | (0.541) | (0.845) |
| Free cashflow | -0.202 | -0.200 | -0.202 | -0.200 | -0.200 | -0.155 | -0.155 | -0.235 |
| | (0.008) | (0.002) | (0.008) | (0.009) | (0.002) | (0.254) | (0.255) | (0.029) |
| SG&A | 0.031 | 0.063 | 0.032 | 0.032 | 0.063 | 0.140 | 0.138 | -0.097 |
| | (0.434) | (0.197) | (0.421) | (0.415) | (0.194) | (0.044) | (0.046) | (0.217) |
| CEO duality | -0.000 | -0.005 | 0.000 | -0.000 | -0.005 | 0.004 | 0.003 | 0.004 |
| | (0.982) | (0.292) | (0.990) | (0.992) | (0.300) | (0.733) | (0.811) | (0.698) |
| Analyst coverage | -0.002 | 0.000 | -0.002 | -0.002 | 0.000 | 0.001 | 0.000 | 0.003 |
| | (0.013) | (0.492) | (0.011) | (0.013) | (0.507) | (0.717) | (0.750) | (0.016) |
| Diversification | 0.038 | -0.024 | 0.039 | 0.038 | -0.024 | 0.042 | 0.040 | -0.024 |
| | (0.025) | (0.030) | (0.022) | (0.023) | (0.032) | (0.114) | (0.124) | (0.152) |
| Market concentration | 0.045 | -0.009 | 0.046 | 0.047 | -0.009 | 0.057 | 0.063 | -0.046 |
| | (0.089) | (0.556) | (0.087) | (0.081) | (0.567) | (0.163) | (0.123) | (0.058) |
| Constant | 0.166 | 0.461 | 0.167 | 0.158 | 0.461 | 0.283 | 0.284 | 0.272 |
| | (0.004) | (0.000) | (0.004) | (0.009) | (0.000) | (0.002) | (0.003) | (0.000) |
| Industry | YES | YES | YES | YES | YES | YES | YES | YES |
| Year | YES | YES | YES | YES | YES | YES | YES | YES |
| Observations | 10,263 | 10,263 | 10,263 | 10,263 | 10,263 | 2,414 | 2,414 | 2,414 |
| Number of firms | 1,410 | 1,410 | 1,410 | 1,410 | 1,410 | 850 | 850 | 850 |
| Wald $\chi^2$ | 16835.35 | 2974.09 | 16440.59 | 17532.51 | 2960.77 | 693.17 | 710.16 | 326.70 |

Note: Standard errors are clustered by firm, p-values are shown in parentheses.

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## ESSAY 2: Shareholder Value and Society Value: How Does It Influence Firm's Choice on CSR Investment Strategies?


### ABSTRACT

Making CSR investment is a corporate strategy adopted by most companies. Given the limitation of resources one company own, it is hard for the company to engage in all kinds of CSR activities. Thus, managers need to make decision on how to allocate limited corporate resources to various CSR activities. In this study, I explore what drives a firm to select different CSR investment strategies, in terms of the financial materiality of CSR. I posit that firms with stronger financial orientation, which are reflected by more analyst coverage and higher institutional ownership, are more likely to engage in financially material CSR investment, but firms with stronger social orientation, which are reflected by higher female board proportion and more liberal CEOs, are more likely to engage in financially immaterial CSR investment. In addition, these effects are moderated by firm's financial distress. Our empirical results support most of arguments.

# INTRODUCTION

In recent years, corporate social responsibility (CSR) is routinely included in corporate strategies by many companies. Stakeholders, such as customers, employees, suppliers, and communities, usually view CSR as legitimate corporate activities and are more willing to provide more resources and efforts to firms with higher CSR performance (Campbell, 2007). Recent studies also found that shareholders and analysts have also taken companies' social performance into consideration when make investing decisions (Cordeiro & Tewari, 2015; Luo, Wang, Raithel, & Zheng, 2015).

When look at firms' initiatives of engaging in CSR activities, different streams of research provide different arguments. Some studies emphasize the financial incentives of doing CSR and argue that firms can "do well by doing good" through investing in CSR activities (Freeman, Harrison, Wicks, Parmar, & De Colle, 2010; Kramer & Porter, 2011). Other studies attend to the normative perspective of doing CSR and suggest that companies have normative reasons to address social issues, independent of pursuing financial benefits (Margolish & Walsh, 2003). However, few study looks at how different initiatives impact corporate CSR strategies differently. We know little about how different initiatives would shape a firm's managerial decision on choosing their way of doing CSR. Carroll (1979) argued that a firm's social responsibility should include different categories including economic, legal, ethical, and discretionary aspects. Given CSR activities cover a wide range of voluntary activities, it is necessary to study how do managers make decisions on which specific CSR area they would like to participate in. In particular, what do drive managers' resource allocation decisions on CSR investment?

In this study, I try to address this question by exploring how firms' financial orientation and social orientation drive firms' decision on allocating resources to different CSR activities, in terms of the financial materiality of CSR issues. Specifically, I draw on the literature on stakeholder theory, particularly instrumental and normative perspectives of engaging in CSR activities and satisfying stakeholders' expectation (Harrison, Bosse, & Phillips, 2010; Jones, 1995). I posit that firms with stronger financial orientation are more likely to engage in financial material CSR investment, but firms with stronger social orientation are more likely to engage in financial immaterial CSR investment. In addition, these effects are moderated by firm's financial distress.

I tested hypotheses by employing a sample of 1031 publicly listed firms in the United States between year 2010 and 2016. Follow Khan, Serafeim, and Yoon (2016), I matched the Sustainability Accounting Standards Board (SASB)'s industry-level materiality standards to KLD database, which is widely used in CSR studies, to calculate the firm-level financial materiality CSR index. This method helps me to create a fine-grained proxy for different CSR strategies a firm take and enables me to examine how different initiatives for firms to address social issues shape firms' choice on what kind of CSR activities they do. I found that when firms have more analyst coverage or higher institutional ownership, they are more likely to invest in material CSR activities; when they have more female directors in their board or their CEO is more liberal, they are more likely to invest in immaterial CSR activities. I also found that whether firms are experiencing financial distress moderates the above relations, such that financial distress strengthens the positive relationship between firm's analyst coverage (institutional ownership) and investment in financially

material CSR activities; in addition, financial distress weakens the positive relationship between firm's female board director percentage (CEO liberalism) and investment in financially immaterial CSR activities.

This study makes several contributions. First, this paper contributes to CSR literature by exploring the different drivers of a company that impact managers' choice on specific CSR investment. Combining with stakeholder theory, I investigate how different value orientations could lead firms to make different social involvement decision, which constitute an important dimension of resources allocation strategy for a firm. Second, this paper adds to the literature on financial implications of CSR. There is a long-lasting discussion regarding how firm social performance creates value (Berman, Wicks, Kotha, & Jones, 1999; Brammer & Millington, 2008; McWilliams & Siegel, 2001). This study attends to the antecedent of value-enhancing CSR activities and explores how instrumental and altruistic pressures shape firms' strategies respectively in choosing CSR activities which have a direct link with financial performance or not. Third, empirically, I employ a novel dataset that measures the firm-level CSR materiality from financial perspective. This measurement presents a fine grained differentiation between CSR activities that are expected to bring financial benefits and CSR activities are not. My study therefore provides a more nuanced empirical understanding on the variance of firms' CSR strategy, in terms of whether CSR investments they make are related to financial benefits.

## THEORY AND HYPOTHESES

Dealing with environmental, social, and governance issues which are essential to social wellbeing is increasingly adopted by companies in recent years as corporate strategies. That partially comes from the growing pressures from stakeholders of company (Compbell, 2007; Matten & Moon 2008; Husted, Montiel, & Christmann, 2016). However, as different stakeholders usually have inconsistent or even conflict interests with each other (Li, Xia, & Zajac, 2018; Oliver, 1991; Rowley, 1997), they tend to exert pressures on companies to behave in a socially responsible way, with different purposes. For example, for shareholders of a company, they invest profitable companies and seek for financial returns. Consistent with this target, shareholders would regard CSR activities as one of corporate strategies to achieve competitive advantage over peers of the company and expect CSR practices to generate economic value. They would support firms to devote resources to CSR activities which can generate instrumental benefits. On the contrary, for stakeholders who are more prosocial, they view CSR from a normative perspective and expect firms to address social issues to increase the welfare of the whole society. Therefore, different value orientations facilitated by different stakeholder groups may drive firms to engage in heterogeneous CSR activities.

While prior studies have attended to the classification of different CSR activities that target different stakeholders (Becker-Olsen, Cudmore, & Hill, 2006; Du, Swaen, Lindgreen, & Sen, 2013; Groza, Pronschinske, & Walker, 2011; Hawn & Ioannou, 2016; Mattingly & Berman, 2006), the categorizations of CSR are relatively coarse-grained, without considering the heterogeneity of CSR evaluation across different industries. For instance, some studies classify

all firms' community and diversity dimensions of CSR as institutional CSR, and classify their governance, employee relations, and product quality dimensions as technical CSR (Chang, Kim, & Li, 2014; Mattingly & Berman, 2006; Godfrey, Merrill, & Hansen, 2009).

However, the materiality of different CSR activities likely varies systematically across industries (Eccles & Serafeim, 2013). In this study, I adopt a novel classification of CSR activities which consider the difference of CSR materiality across different industries. In particular, I follow Khan et al. (2016)'s method: classify CSR activities into two categories: material CSR and immaterial CSR in each industry. This classification is developed by a non-profit organization—the Sustainability Accounting Standards Board (SASB), whose purpose is to provide industrial reporting standards of material sustainability issues from investor viewpoint (SASB, 2017). According to SASB's definition, material CSR issues is defined as issues that "are reasonably likely to impact the financial conditions or operating performance of a company and therefore are most important to investors" (SASB, 2017). Conversely, the rest of CSR issues which are irrelevant to one company's financial performance belong to immaterial CSR issues. By identifying material and immaterial CSR issues in each industry, this classification approach provides a finer grained measurement to differentiate CSR issues which are closely associated with financial performance from those which are not.

**Financial Orientation and Material CSR Investment**

When companies are under strong pressure of meeting market expectation, they are more likely to conform to corporate strategies that increase current profits (Jensen, 2005; Porter, 1992). Studies have found that once facing

financial pressures, companies are more likely to cut R&D and advertising expenses (Graham, Harvey, & Rajgopal, 2005), change competitive strategy decisions (Zhang & Gimeno, 2010), or engage in earnings management (Degeorge, Patel, & Zeckhauser, 1999), leading to improvement in their financial performance. In this study, I look at two factors that could exert financial pressure on a company and thus make the company to be financially oriented: institutional ownership and analyst coverage.

Institutional shareholders control the bulk of outstanding equity of companies (Smith, 1996). As improved investment performance is required by their clients, institutional fund managers have strong incentives to gain financial returns. Meanwhile, as shareholders who own a large amount of equity, institutional shareholders not only monitor a company, but also get involved into the company's strategic decisions (Holderness & Sheehan, 1988; Johnson, & Greening, 1999). Therefore, institutional shareholders tend to push companies to make corporate decisions that create financial gains in a short term. Consistent with this, in the context of CSR, institutional shareholders might drive companies' socially responsible practices as well. Studies actually found that institutional shareholders have positive influence on companies' social engagement, such that they likely encourage companies for which they hold equity to invest more in dealing with environmental or social concerns (Chen, Dong, & Lin, 2020; Dyck, Lins, Roth, & Wagner, 2019). Given the strong financial pressures borne by institutional fund managers at the same time, it is reasonable to expect that they would like firms to go for CSR activities which can bring financial benefits (i.e. material CSR). Therefore, we argue that if one firm has higher institutional ownership, it is more likely to have stronger

financial orientation, and thus more likely to allocate more resources to material CSR.

Financial analysts are another dominant group of stakeholders who are considered to create financial pressures on firms (He & Tian, 2013; Irani & Oesch, 2016). Unlike institutional shareholders, who directly influence firms' decisions and actions by buying or selling stocks, financial analysts influence firms' behavior in an indirect way. They specialize in certain single industry, forecast performance of firms they covered, and issue reports regularly for investors about whether to buy, hold, or sell a firm's stock (Schipper, 1991). Studies have found that managers often have strong incentive to meet analysts' earnings forecasts, even these forecasts are overly optimistic (Dechow, Hutton, & Sloan, 2000; Graham et al., 2005; Fuller & Jensen, 2010). It then follows that analyst coverage exerts pressures on firm managers to increase performance in a short term, in order not to be dropped from coverage. Based on the aforementioned discussion, we propose that when firms have more analyst coverage, they tend to invest more to CSR activities that are related to financial returns, which is consistent with strategies they choose to respond to financial pressures from financial analysts. Taken together, I expect that:

*Hypothesis 1: The stronger the financial orientation of the firm, the higher investment firm would like to make in financially material CSR activities.*

**Social Orientation and Immaterial CSR Investment**

Besides financial orientation driven by institutional shareholders and financial analysts, there is social orientation existing in decision-making process within a firm, which emphasizes normative incentives for managers and firms

to make strategic decisions, especially social-related decisions. From normative stakeholder theory perspective, managers have normative reasons to act in the interests of stakeholders, independent of pursuing financial benefits (Margolish & Walsh, 2003). In this study, I look at two factors that may create social orientation pressures on firms: the percentage of female directors in the board and the CEO political ideology, which, as a result, shape their CSR actions. First, female directors in the board play an important role in driving firms' social orientation. Studies have argued that female and male directors have different cognitive frames and thus tend to make heterogeneous decisions regarding firms' operation (Carpenter, 2002; Groysberg & Bell, 2013; Post & Byron, 2015). In particular, female is more supportive toward ethical behavior and has stronger social preferences compared to male (Beutel & Marini, 1995; Chodorow, 1974). Consist with this argument, female board representation is examined to be positively associated with firms' CSR performance (Hillman, Cannella, & Harris, 2002; Coffey & Wang, 1998). Given female's prosocial nature, female directors might exert pressures on firms to behave more ethically in business operations, regardless of whether the ethical behavior has financial implications. Therefore, I expect that when firms have higher female board representation percentage, they are more likely to invest in immaterial CSR activities.

Second, CEOs' political ideology is closely related to firms' social orientation as well. Upper echelons theory proposes that executives vary in their personal characteristics, experience, and values. These heterogeneities in turn shape executives' choices and affect organizational outcomes (Hambrick & Mason, 1984; Hambrick, 2007). CEOs' political ideology, which represents one CEO's personal value, explains how they view the world and why they do what

they do (Jost, 2006). As the leader of an organization, CEOs likely integrate their ideology orientation into managerial decisions, thus affecting their firms' social orientation. Researchers on political ideology have argued that comparing with people who are conservative, those who are more liberal care more about social issues in general such as diversity, human rights, environment and so on (Jost, 2006; Schwartz, 2013). Building on this research, Chin, Hambrick, and Trevino (2013) have proposed that liberal CEOs are likely to do better in CSR than conservative CEOs, even the firm's recent performance is not good. That is because liberal CEOs are believed to care less about the financial benefits of CSR activities and on the contrary, see CSR as necessary part for business operations (Gupta, Briscoe, & Hambrick, 2017; Gupta, Fung, & Murphy, 2021). Based on this, I expect that firms with liberal CEOs will be more social orientated. As a result, these firms tend to invest more to CSR issues which less relevant to financial benefits. Combining two factors contributing to social orientation of a firm, female director representation and CEO liberalism, I would predict that:

*Hypothesis 2: The stronger the social orientation of the firm, the higher investment firm would like to make in financially immaterial CSR activities.*

**The Impact of Financial Distress**

Although facing different orientations of making decisions about social involvement, firms experiencing poor recent performance and thus failing to meet market expectations are under high pressures of seeking ways to create value. Firms with declining performance usually face challenge from their investors about their undesirable financial results. As a result, firms would take actions to increase value and meet investors' expectation. Indeed, prior research

has argued that firms tend to respond to financial distress by reducing cost and limiting new strategic initiatives (D'aveni, 1989; Schendel, Patton, & Riggs, 1976; Starbuck, 1992). Similarly, if firms do not perform well in the current period, the intense pressure they face will also exert influence on their decisions about CSR strategies. While CSR investment is associated with cost increasing, a threshold level of CSR must be warranted to meet legitimate requirements from stakeholders (Campbell, 2007; Palazzo & Richter, 2005). Therefore, firms are more willing to invest in CSR activities that can bring high financial returns when they are under financial distress. Based on these arguments, I expect that financial distress will influence the relationship between financial orientation (social orientation) and material (immaterial) CSR investment we discussed above, such that the effect of financial orientation on CSR investments will be strengthened; and the effect of social orientation will be weakened. Thus:

*Hypothesis 3: Financial distress strengthens the positive relationship between firm's financial orientation and investment in financially material CSR activities.*

*Hypothesis 4: Financial distress weakens the positive relationship between firm's social orientation and investment in financially immaterial CSR activities.*

## METHOD

### Data and Sample

To test the hypotheses outlined above, I used the sample of the U.S. publicly listed firm covered by MSCI KLD database from 2010 to 2016. I compiled data from multiple sources. I first followed Khan et al. (2016)'s

method: mapped industry-level material CSR topics identified by SASB's CSR materiality standards with MSCI KLD database which provides firm-level CSR index. In this way, I obtained the material CSR index for each firm. I then obtained institutional ownership data from Thomson Reuters Institutional Ownership database in Wharton Research Data Services (WRDS). I obtained analyst coverage data and female board director data from I/B/E/S database and Institutional Shareholder Services (ISS) database respectively. Political ideology was measured by CEOs political donations, which were gathered from the U.S. Federal Election Commission (FEC). Financial data came from the Compustat database. After further dropping observations with missing data, our final sample included 1031 unique firms corresponding to 4870 firm-year observations between year 2010 and 2016.

## Dependent Variables

***Material and immaterial CSR score.*** Followed Khan et al. (2016), I first used SASB's CSR Materiality Standards to identify material CSR issues in each industry for 77 industries in total. Then I mapped all material CSR issues listed in SASB's standards to the MSCI KLD data to obtain firm-level material CSR strengths and concerns. I then calculated the material CSR score for each firm by subtracting the aggregate concerns from the aggregate strengths score of material CSR. Lastly, immaterial CSR score was calculated by each firm's total CSR score minus its material CSR score.

## Independent Variables

***Institutional ownership.*** Following other studies (Ramalingegowda, & Yu, 2012; Walls, Berrone, & Phan, 2012), I measured institutional ownership using Thomson Reuters Institutional Ownership database of 13F filings with the

U.S. Security and Exchange Commission, as one of measurement of firms' financial orientation. In particular, I focused on institutional owners with at least 1 percent equity to screen out investors with negligible holdings, and then calculated institutional ownership as the percentage of the total number of shares outstanding for a firm.

***Analyst coverage.*** The variable analyst coverage, which is another measurement of financial orientation in this study, was measured as the number of analysts following a firm in each year. Consistent with the literature (Guo, Pérez-Castrillo, & Toldrà-Simats, 2019; He & Tian, 2013), I calculated the number of analysts as the mean of the 12 monthly numbers of analysts that follow a focal firm.

***Female director percentage.*** In this study, I use female director percentage as one proxy for firm's social orientation. The variable of female director percentage was calculated as the percentage of non-CEO directors on the board who are female (Oliver, Krause, Busenbark, & Kalm, 2018).

***CEO political ideology.*** CEO political ideology is another proxy for firm's social orientation. It was measured by CEOs' political donations for ten years before they became CEOs. Specifically, I obtained political donations data from the U.S. Federal Election Commission (FEC), one independent agency that monitor and disclose campaign finance information. I then collected the donation information for each CEO in my sample by checking donors' full name, employer information, location, and other related information which can help confirm the identity of a donor. Then I followed Chin et al. (2013), calculated four indicators of CEOs' political ideology: (a) the number of donations to

Democrats over total donations to both Democrats and Republicans, (b) the dollar amount of donations to Democrats over total dollar donations to both parties, (c) the number of years of donations to Democrats over total years of donations to both parties, and (d) the number of distinct recipients to whom the CEO made donations over total number of distinct recipients of both parties. The political ideology index was calculated by the average of four indicators, which measures how liberal a CEO is. Higher political ideology index means one CEO's ideology is more liberal. On the contrary, lower index means a CEO is more conservative. For these CEOs who did not make any donations for the ten years before they became CEOs, their political ideology index equals 0.5, given the index ranging from 0 to 1 and 0.5 means a neutral ideology that neither liberal nor conservative (Gupta, Briscoe, & Hambrick, 2018).

**Control Variables**

I controlled firm-level attributes that may matter for firms' CSR decision. *Firm size* was measured as the logarithm of a firm's total assets (McWilliams & Siegel, 2001). *Firm age* was the number of years since a firm's first appearance in the Compustat database. To account for the impact of other expenditure on firms' CSR, I controlled *R&D expenditure* and *capital expenditure*, which was measured by a firm's R&D expense (capital expenditure) amount over its total assets. I controlled three characteristics that reflects firms' discretionary resources, including *free cashflow*, which was measured as operating income less taxes, interest and dividends paid divided by total assets; *financial slack,* which was measured as the total debt of a firm divided by the total equity; and *dividend,* which was an indicator variable measuring whether a firm paid out dividends during the fiscal year. To account

for the impact of intangible assets on firms' CSR performance, I also controlled the *market to book ratio*, measured as the market value of firm's equity divided by the book value of its equity.

As firms' prior financial performance may influence their CSR decisions next year, the financial conditions of a firm should be included as controls (Orlitzky, Schmidt, & Rynes, 2003; Waddock & Graves, 1997). *Return on assets* measures a firm's accounting performance, which was calculated by net income divided by total assets. *Tobin's q* is the proxy for market performance, which was calculated by a firm's market value of its assets divided by book value (Awaysheh, Heron, Perry, & Wilson, 2020). I also controlled *firm growth*, which was measured by the percentage of sale growth of a firm.

Lastly, following prior research on the link between corporate governance mechanism of the firm and CSR (Flammer, Hong, & Minor, 2019; Petrenko, Aime, Ridge, & Hill, 2016), I controlled for CEO and board characteristics that may affect the incentive of engaging in CSR. In particular, I included three variables proxying for CEO's characteristics that may impact their decisions on CSR practices: *CEO ownership*, measured as the percentage of shareholdings owned by the CEO, *CEO compensation*, measured as the ratio of bonus and stock-based compensation in the total CEO compensation, and *CEO duality*, measured as whether the CEO served as the chairman of board at the same time. In addition, I controlled *independent directors*, which was measured as the percentage of outside representation on the board of directors.

**Estimation Methods**

To account for nonindependence in firm observations, I used generalized estimating equations (GEE) to test hypotheses in this study (Liang & Zegar, 1986). Following other studies (Chin et al., 2013; Gupta et al., 2018), I specified a Guassian distribution with an identity link function and exchangeable correlation structure to estimate coefficients for all regressions. Robust standard errors are applied in regressions to deal with the possible heteroscedasticity. Given some of independent variables, such as *CEO political ideology* and *female director percentage*, are timely stable within a firm, fixed effects model is not suitable for this study. As a robustness check, I also employed random effects models to for all regressions. The results are much similar with GEE regressions.

## RESULTS

Table 1 reports the descriptive statistics of firms in my sample and shows the correlations between variables in the model. The mean value of *material CSR* is 0.15 and of *immaterial CSR* is 0.78. The correlation coefficient between *material CSR* and *immaterial CSR* is 0.29, which means there is no highly corelated relations when firms make investment decisions on material or immaterial CSR issues.

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Table 2 presents regression results for the effects of financial orientation and social orientation on different CSR choices. Model 1 and Model 2 are baseline models that only include the regression of all control variables on the

dependent variable *material CSR* and *immaterial CSR* respectively. Model 3 and Model 4 are hypothesis-testing models. In Model 3, I test Hypothesis 1, which points that the stronger the financial orientation of the firm, the higher investment firm would like to make in financially material CSR activities. The significant coefficients of *institutional ownership* (β=0.035, p=0.052) and *analyst coverage* (β=0.011, p=0.009) shows that stronger financial orientation leads to higher material CSR investment, which supports Hypothesis 1. The coefficient of *female director* in Model 3 is significant as well, which shows that female director on board facilitates material CSR investment. The coefficient of political ideology in Model 3, however, is insignificant, indicating that liberal CEOs are not likely to invest more to material CSR. Model 4 tests Hypothesis 2, which states that the stronger the social orientation of the firm, the higher investment firm would like to make in financially immaterial CSR activities. The coefficients of two social orientation measurements, *female director* and *political ideology*, are significant (β=2.609, p=0.000; β=0.295, p=0.056), providing support for Hypothesis 2. Meanwhile, the coefficient of either *institutional ownership* or *analyst coverage* in Model 4 is insignificant, indicating that higher financial orientation would not drive firms' immaterial CSR investment.

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Table 3 shows the moderation effect of the firm's financial distress on the relation between financial orientation (social orientation) and firms' material (immaterial) CSR investment. Model 5 and Model 6 are baseline models without interaction items. Model 7 and Model 8 present the results of

testing Hypothesis 3 and 4, which argues financial distress strengthens (weakens) the positive relationship between firm's financial orientation (social orientation) and investment in financially material (immaterial) CSR activities. In Model 7, interaction terms *institutional ownership*financial distress* and *analyst coverage*financial distress* are positively significant (β=0.046, p=0.094; β=0.009, p=0.009), which is consistent with Hypothesis 3. In Model 8, interaction terms female director*financial distress and political ideology*financial distress are both negatively significant (β=-1.638, p=0.000; β=-0.321, p=0.069), thus supporting Hypothesis 4.

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## DISCUSSIONS AND CONCLUSION

In this study, I shed lights on the question of how different orientations within a firm may drive its socially responsible choice. The literature on CSR and stakeholder theory has made extensive discussion regarding the instrumental or normative utilities of keeping good relationships with stakeholders (Donaldson & Preston, 1995; Harris & Freeman, 2008; Jones, Harrison, & Felps, 2018). I extend this stream of studies by exploring what kind of value orientation for a firm will play a role in guiding firms' social-related strategic decisions, in terms of have instrumental implications or not.

Specifically, relying on the SASB's CSR materiality standards that provide classification for CSR issue which is related to financial benefits, I examine how firms' financial orientation and social orientation shape their CSR choice about investment in material or immaterial CSR issues. I argue that

financial orientation leads firms to invest more in material CSR activities, and social orientation leads them to invest more in immaterial CSR activities. In addition, I further investigate whether abovementioned relation is contingent upon firms' financial conditions. My results support these arguments.

This study contributes to several streams of literature. First, it contributes to CSR literature by showing that the heterogeneous functions of CSR can be explained by different dominant value orientations in a firm. Prior studies investigated the impact of different CSR activities on stakeholder response and firm performance (Becker-Olsen et al., 2006; Chang et al., 2014; Godfrey et al., 2009). In this study, I attend to the antecedent of different CSR practices by investigating the drivers of these CSR decisions and find that if firms have strong pressures to gain financial returns, such as have high institutional ownership or covered by more financial analysts, they will take financial implications into consideration when make voluntary prosocial decisions. On the other hand, firms with strong social value orientation, which is reflected by female director and CEO liberalism, will consider less for financial influence when engage in social involvement. This study therefore provides new evidence on firms' choice of addressing certain social issues, adding to the literature on the antecedents of CSR.

Second, this study also contributes to stakeholder theory. Existing studies have found that CSR serves as a tool for the company to obtain legitimacy from their stakeholders (Cambell, 2007; Palazzo & Richter, 2005). But research that explores why different firms choose to devote resources to cater for different stakeholders is quite limited. This study goes beyond the relatively rough categorization of primary and secondary stakeholders and pays

attention to a more nuanced differentiation: whether satisfying different stakeholders in different industries is related to financial implications. It further investigates what is the drivers for firms doing so. It therefore contributes to the discussion about instrumental stakeholder theory and normative stakeholder theory (Gibson, 2000; Laplume, Sonpar, & Litz, 2008).

This study also suggests directions for future research. In this study, I introduc a new categorization of CSR activities into management research. Further studies can explore how other orientations may influence firms' CSR strategies regarding material and immaterial CSR issues. For example, firms with strong innovative culture might have greater capability to make green innovation, which helps control costs and increase operation efficiency of the firm. These firms are thereby more likely to take advantage of their innovation knowledge to deal with CSR issues that is related to core business, which enhances firm value as well. Hence, innovation orientation might be another factor that may drive firms' CSR decision on which type of CSR activities they want to choose. More work in this area is needed to better understand the mechanism of how firms choose nonmarket strategies.

Moreover, future studies may investigate the dynamics of impacts of different orientations within a firm. This study examined how value orientation adopted by firms or their managers shape their CSR decisions. Studies in future could further investigate when a firm's dominant orientation changes, how the firm's CSR strategy is changed accordingly. For example, when a liberal CEO is replaced by a conservative CEO in a firm, or when a firm is targeted by social activists, how the manager would adjust their CSR investment in material or immaterial CSR issues. It would be valuable to develop a dynamic view of the

relationship between firms' financial (social) orientation and CSR investment, which complements the mechanism of how different forces shape firms' CSR decisions differently.

To conclude, I believe this study provides important insights concerning firms' value orientation and nonmarket strategies. The arguments and empirical results in this study provide evidence on the link between financial (social) orientation and financially material (immaterial) CSR investment, which is further moderated by firms' financial conditions. I hope this study will be another step toward a better understanding of how different CSR decisions are shaped by different value orientations.

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# TABLE

**TABLE 4 Descriptive Statistics and Correlations (N=4,870)**

| | | Mean | S.D. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Material CSR | 0.15 | 1.00 | 1.00 | | | | | | | | | | | |
| 2 | Immaterial CSR | 0.78 | 2.36 | 0.29 | 1.00 | | | | | | | | | | |
| 3 | Institutional owp. | -0.34 | 0.69 | 0.03 | 0.05 | 1.00 | | | | | | | | | |
| 4 | Analyst coverage | 12.04 | 7.68 | 0.20 | 0.37 | 0.04 | 1.00 | | | | | | | | |
| 5 | Female director | 0.14 | 0.10 | 0.26 | 0.32 | 0.01 | 0.15 | 1.00 | | | | | | | |
| 6 | Political ideology | 0.40 | 0.30 | 0.05 | 0.06 | -0.02 | 0.01 | 0.03 | 1.00 | | | | | | |
| 7 | Firm size | 8.12 | 1.55 | 0.18 | 0.49 | 0.09 | 0.59 | 0.30 | -0.02 | 1.00 | | | | | |
| 8 | Firm age | 32.19 | 18.05 | 0.10 | 0.26 | 0.12 | 0.06 | 0.24 | -0.11 | 0.39 | 1.00 | | | | |
| 9 | ROA | 0.06 | 0.07 | 0.07 | 0.09 | 0.06 | 0.11 | 0.03 | -0.02 | -0.06 | -0.00 | 1.00 | | | |
| 10 | Tobin's q | 1.90 | 1.02 | 0.11 | 0.04 | -0.00 | 0.18 | 0.01 | 0.02 | -0.20 | -0.13 | 0.53 | 1.00 | | |
| 11 | Growth | 0.06 | 0.18 | 0.02 | -0.04 | -0.02 | 0.04 | -0.09 | 0.05 | -0.05 | -0.16 | 0.28 | 0.18 | 1.00 | |
| 12 | R&D expenditure | 0.02 | 0.04 | 0.11 | 0.08 | -0.02 | 0.04 | -0.08 | 0.11 | -0.19 | -0.13 | 0.04 | 0.27 | 0.06 | 1.00 |
| 13 | Capital expenditure | 0.05 | 0.05 | -0.04 | -0.00 | -0.04 | 0.22 | -0.08 | -0.13 | 0.04 | 0.04 | 0.00 | 0.03 | 0.00 | -0.17 |
| 14 | Free cashflow | 0.08 | 0.06 | 0.04 | 0.00 | 0.01 | 0.12 | -0.04 | -0.05 | -0.18 | -0.13 | 0.63 | 0.41 | 0.26 | 0.08 |
| 15 | Financial slack | 1.81 | 2.72 | 0.07 | 0.11 | -0.01 | 0.05 | 0.18 | 0.03 | 0.27 | 0.11 | -0.13 | -0.07 | -0.03 | -0.12 |
| 16 | Mkt to book ratio | 3.18 | 3.24 | 0.12 | 0.11 | -0.02 | 0.16 | 0.13 | 0.02 | -0.02 | 0.01 | 0.31 | 0.65 | 0.09 | 0.14 |
| 17 | Indpt. director | 0.80 | 0.11 | 0.11 | 0.18 | 0.01 | 0.13 | 0.21 | -0.08 | 0.23 | 0.25 | -0.04 | -0.09 | -0.08 | 0.01 |
| 18 | CEO compensation | 0.75 | 0.21 | 0.11 | 0.22 | 0.00 | 0.32 | 0.13 | 0.01 | 0.35 | 0.09 | 0.12 | 0.12 | 0.11 | 0.01 |
| 19 | CEO ownership | 1.79 | 3.74 | -0.09 | -0.16 | -0.02 | -0.18 | -0.10 | 0.08 | -0.30 | -0.16 | 0.05 | 0.06 | 0.03 | 0.01 |
| 20 | CEO duality | 0.52 | 0.50 | -0.01 | 0.06 | 0.06 | 0.07 | 0.10 | -0.03 | 0.13 | 0.13 | 0.02 | -0.04 | -0.02 | -0.07 |
| 21 | Dividend | 0.65 | 0.48 | 0.10 | 0.20 | 0.09 | 0.09 | 0.20 | -0.12 | 0.35 | 0.40 | 0.12 | -0.04 | -0.15 | -0.27 |

| | | Mean | S.D. | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | Capital expenditure | 0.05 | 0.05 | 1.00 | | | | | | | | |
| 14 | Free cashflow | 0.08 | 0.06 | 0.22 | 1.00 | | | | | | | |
| 15 | Financial slack | 1.81 | 2.72 | -0.07 | -0.16 | 1.00 | | | | | | |
| 16 | Mkt to book ratio | 3.18 | 3.24 | 0.01 | 0.23 | 0.53 | 1.00 | | | | | |
| 17 | Indpt. director | 0.80 | 0.11 | -0.01 | -0.02 | 0.12 | 0.04 | 1.00 | | | | |
| 18 | CEO compensation | 0.75 | 0.21 | 0.00 | 0.10 | 0.07 | 0.15 | 0.23 | 1.00 | | | |
| 19 | CEO ownership | 1.79 | 3.74 | 0.03 | 0.04 | -0.11 | -0.02 | -0.26 | -0.30 | 1.00 | | |
| 20 | CEO duality | 0.52 | 0.50 | -0.02 | -0.01 | 0.02 | -0.01 | 0.14 | -0.02 | 0.22 | 1.00 | |
| 21 | Dividend | 0.65 | 0.48 | 0.04 | -0.14 | 0.14 | 0.06 | 0.15 | 0.08 | -0.08 | 0.10 | 1.00 |

**TABLE 5 The Effects of Financial Orientation and Social Orientation on CSR Materiality**

| Variables | Model 1 DV=Material CSR | Model 2 DV=Immaterial CSR | Model 3 DV=Material CSR | Model 4 DV=Immaterial CSR |
|---|---|---|---|---|
| Institutional owp. | | | 0.035+ | -0.031 |
| | | | (0.052) | (0.350) |
| Analyst coverage | | | 0.011** | 0.007 |
| | | | (0.009) | (0.431) |
| Female director | | | 1.371*** | 2.609*** |
| | | | (0.000) | (0.000) |
| Political ideology | | | 0.036 | 0.295+ |
| | | | (0.671) | (0.056) |
| Firm size | 0.142*** | 0.758*** | 0.083** | 0.696*** |
| | (0.000) | (0.000) | (0.001) | (0.000) |
| Firm age | -0.002 | 0.010** | -0.002 | 0.009** |
| | (0.187) | (0.002) | (0.128) | (0.003) |
| ROA | -0.305 | 0.510 | -0.300 | 0.535 |
| | (0.234) | (0.297) | (0.234) | (0.280) |
| Tobin's q | 0.082** | -0.020 | 0.067** | -0.031 |
| | (0.001) | (0.768) | (0.006) | (0.628) |
| Growth | -0.096 | -0.379** | -0.056 | -0.333* |
| | (0.145) | (0.010) | (0.398) | (0.022) |
| R&D expenditure | 2.063*** | 8.101*** | 1.631** | 7.388*** |
| | (0.001) | (0.000) | (0.008) | (0.000) |
| Capital expenditure | 0.547 | -0.013 | 0.408 | -0.040 |
| | (0.278) | (0.989) | (0.406) | (0.966) |
| Free cashflow | 0.306 | 1.773** | 0.292 | 1.876** |
| | (0.366) | (0.007) | (0.383) | (0.005) |
| Financial slack | 0.005 | -0.062** | 0.005 | -0.064** |
| | (0.591) | (0.005) | (0.630) | (0.002) |
| Mkt to book ratio | -0.003 | 0.057* | -0.004 | 0.055* |
| | (0.757) | (0.035) | (0.682) | (0.035) |
| Indpt. director | 0.661*** | 0.527 | 0.474* | 0.229 |
| | (0.000) | (0.141) | (0.011) | (0.531) |
| CEO compensation | 0.013 | -0.023 | 0.001 | -0.040 |
| | (0.852) | (0.884) | (0.984) | (0.795) |
| CEO ownership | 0.002 | -0.013 | 0.002 | -0.013 |
| | (0.679) | (0.168) | (0.635) | (0.166) |
| CEO duality | -0.048 | 0.099 | -0.056 | 0.090 |
| | (0.230) | (0.208) | (0.153) | (0.245) |
| Dividend | 0.086+ | 0.089 | 0.079 | 0.084 |
| | (0.087) | (0.331) | (0.105) | (0.344) |
| Constant | -2.215** | -7.224*** | -1.784* | -6.885*** |
| | (0.003) | (0.000) | (0.015) | (0.000) |
| Industry | YES | YES | YES | YES |
| Year | YES | YES | YES | YES |
| Observations | 4,870 | 4,870 | 4,870 | 4,870 |
| Number of firms | 1,031 | 1,031 | 1,031 | 1,031 |
| Wald $chi^2$ | 626.31 | 2920.23 | 696.35 | 2575.39 |

Note: Robust standard errors are reported, p-values are shown in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

**TABLE 6 The Moderation Effect of Financial Distress**

| Variables | Model 5 DV=Material CSR | Model 6 DV=Immaterial CSR | Model 7 DV=Material CSR | Model 8 DV=Immaterial CSR |
|---|---|---|---|---|
| Institutional owp. | 0.036+ | -0.031 | 0.017 | -0.027 |
| | (0.050) | (0.353) | (0.452) | (0.547) |
| Analyst coverage | 0.010* | 0.007 | 0.006 | 0.014 |
| | (0.011) | (0.447) | (0.119) | (0.119) |
| Female director | 1.367*** | 2.606*** | 1.603*** | 3.191*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Political ideology | 0.038 | 0.296+ | 0.036 | 0.390* |
| | (0.660) | (0.056) | (0.687) | (0.018) |
| Financial distress | 0.025 | 0.018 | 0.021 | 0.569*** |
| | (0.332) | (0.729) | (0.701) | (0.000) |
| Institutional owp.*Financial distress | | | 0.046+ | -0.016 |
| | | | (0.094) | (0.770) |
| Analyst coverage*Financial distress | | | 0.009** | -0.017* |
| | | | (0.009) | (0.027) |
| Female director*Financial distress | | | -0.670*** | -1.638*** |
| | | | (0.001) | (0.000) |
| Political ideology*Financial distress | | | 0.018 | -0.321+ |
| | | | (0.819) | (0.069) |
| Firm size | 0.084*** | 0.696*** | 0.086*** | 0.689*** |
| | (0.001) | (0.000) | (0.001) | (0.000) |
| Firm age | -0.002 | 0.009** | -0.002 | 0.009** |
| | (0.132) | (0.002) | (0.124) | (0.003) |
| ROA | -0.297 | 0.537 | -0.281 | 0.605 |
| | (0.238) | (0.278) | (0.261) | (0.222) |
| Tobin's q | 0.070** | -0.029 | 0.075** | -0.025 |
| | (0.005) | (0.663) | (0.002) | (0.704) |
| Growth | -0.052 | -0.330* | -0.052 | -0.346* |
| | (0.432) | (0.024) | (0.435) | (0.018) |
| R&D expenditure | 1.610** | 7.373*** | 1.587** | 7.417*** |
| | (0.009) | (0.000) | (0.009) | (0.000) |
| Capital expenditure | 0.369 | -0.069 | 0.361 | -0.182 |
| | (0.451) | (0.942) | (0.455) | (0.846) |
| Free cashflow | 0.283 | 1.870** | 0.248 | 1.875** |
| | (0.398) | (0.005) | (0.460) | (0.004) |
| Financial slack | 0.004 | -0.065** | 0.004 | -0.060** |
| | (0.663) | (0.002) | (0.651) | (0.004) |
| Mkt to book ratio | -0.003 | 0.056* | -0.003 | 0.051* |
| | (0.727) | (0.032) | (0.768) | (0.042) |
| Indpt. director | 0.476* | 0.231 | 0.481* | 0.270 |
| | (0.011) | (0.529) | (0.010) | (0.462) |
| CEO compensation | 0.006 | -0.037 | 0.003 | -0.027 |
| | (0.935) | (0.811) | (0.961) | (0.860) |
| CEO ownership | 0.002 | -0.013 | 0.002 | -0.012 |
| | (0.639) | (0.165) | (0.646) | (0.177) |
| CEO duality | -0.056 | 0.091 | -0.054 | 0.080 |
| | (0.158) | (0.242) | (0.167) | (0.298) |
| Dividend | 0.079 | 0.085 | 0.076 | 0.076 |
| | (0.104) | (0.343) | (0.120) | (0.390) |
| Constant | -1.808* | -6.903*** | -1.827* | -7.068*** |
| | (0.013) | (0.000) | (0.013) | (0.000) |
| Industry | YES | YES | YES | YES |
| Year | YES | YES | YES | YES |
| Observations | 4,870 | 4,870 | 4,870 | 4,870 |
| Number of firms | 1,031 | 1,031 | 1,031 | 1,031 |

| | | | | |
|---|---|---|---|---|
| Wald $chi^2$ | 701.95 | 2616.03 | 728.43 | 4131.28 |

Note: Robust standard errors are reported, p-values are shown in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.1