

Article

CEO Current and Prospective Wealth Option Compensation and Corporate Social Responsibility: The Behavioral Agency Model

Maretno Agus Harjoto ¹, Sunghoon Joo ², Sang Mook Lee ³ and Hakjoon Song ^{2,*} 

¹ Graziadio Business School, Pepperdine University, Malibu, CA 90263, USA; maretno.harjoto@pepperdine.edu

² College of Business Administration and Public Policy, California State University Dominguez Hills, Carson, CA 90747-0005, USA; sjoo@csudh.edu

³ Management Department, Pennsylvania State University Great Valley, Malvern, PA 19355-1488, USA; sxl65@psu.edu

* Correspondence: hsong@csudh.edu

Abstract: This study examines the relationship between CEO options compensation and corporate social responsibility (CSR) based on the behavioral agency model (BAM). The BAM assumes that the CEO is bounded by loss-aversion behavior. Using constructs from the BAM, i.e., CEO current and prospective wealth from their options compensation, this study examines the differing effects of CEO current wealth and prospective wealth on firms' CSR strengths, CSR concerns, institutional CSR and technical CSR. Based on a sample of 1565 U.S. firms during 1996 to 2018, the study finds that CEO current wealth is negatively related to firms' CSR strengths and CSR concerns. The study also finds that CEO prospective wealth is positively related to firms' CSR strengths but is unrelated to CSR concerns. CEO current wealth is negatively related to institutional CSR, whereas CEO prospective wealth is positively related to institutional and technical CSR. CEO current (prospective) wealth is more strongly and negatively (positively) related to institutional CSR than technical CSR. This study indicates that designing CEO option compensation to align top managers' interests with the stakeholder interests requires a greater understanding of how CEO bounded rationality behavior toward loss aversion and risk taking is influenced by their option compensation.

Keywords: CSR; behavioral agency model; CEO prospective wealth and current wealth option compensation; CSR strengths and concerns; institutional and technical CSR

JEL Classification: G30; M14; G39; G40



Citation: Harjoto, Maretno Agus, Sunghoon Joo, Sang Mook Lee, and Hakjoon Song. 2024. CEO Current and Prospective Wealth Option Compensation and Corporate Social Responsibility: The Behavioral Agency Model. *Journal of Risk and Financial Management* 17: 1. <https://doi.org/10.3390/jrfm17010001>

Academic Editor: Thanasis Stengos

Received: 8 November 2023

Revised: 14 December 2023

Accepted: 15 December 2023

Published: 19 December 2023



Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Top managers have indicated their commitments toward corporate social responsibility (CSR) or environmental, social and governance (ESG) activities, and they consider CSR as an essential part of corporate strategy.¹ A survey of 1250 top managers in the U.S. and European countries indicates that 87 percent of top managers, especially in the U.S., are committed to maintaining or increasing CSR spending (NAVEX 2022). Seminal studies on the relationship between CEO incentive and CSR performance focused on how top executives' equity compensation affects CSR performance based on the agency theory (Jensen and Meckling 1976) and assumes that managers are risk-averse and therefore they need to be incentivized to engage in CSR activities. Based on the agency theory, Frye et al. (2006) examine the relationship between CEO pay-to-performance sensitivity and CEO turnover for socially responsible firms and find that socially responsible firms tend to have lower CEO pay-to-performance sensitivity. Deckop et al. (2006) examine CEO short-term and long-term compensation and corporate social performance and find that CE short-term pay is negatively related to social performance while CEO long-term pay is positively related to social performance. In contrast, McGuire et al. (2003) and Mahoney and Thorne (2005) find that CEO long-term pay is positively related with weaker CSR

performance. Hence, these studies show that the relationship between CEO pay and firms' CSR performance based on the agency theory is still mixed.

In an attempt to resolve this mixed evidence, recent studies examine the relationship between CEO compensation and CSR from the behavioral agency model (BAM) (Martin et al. 2020; McGuire et al. 2019; Zolotoy et al. 2021). The BAM assumes the agents (CEOs) have a *bounded rationality behavior* and expects the agents to behave based on their *loss aversion* that dictates their risk-taking preference (Pepper and Gore 2015). The BAM explains that the effect of options compensation on CEOs' risk-taking behavior depends on their bounded rationality on loss aversion derived from the behavioral model of prospect theory (Kahneman and Tversky 1979; Tversky and Kahneman 1992). While there is a growing literature which demonstrates that firms' CSR performance is influenced by top managers' incentive structure and risk-taking incentives (Bouslah et al. 2018; Martin et al. 2020; Wiseman and Gomez-Mejia 1998; Zolotoy et al. 2021), relatively little attention is paid to disentangle the relationship between top managers' risk-taking behavior and loss aversion incentives and firms' CSR performance (McGuire et al. 2019). We argue that CEO decisions to engage in CSR, more specifically both CSR strengths and engaging in socially irresponsible behavior (CSR concerns), can be considered as risk-taking behavior.

Studies have shown that the benefits from CSR strengths might be uncertain as CSR strengths do not always bring a positive outcome (Lu et al. 2021) because ethical norms and values in our society continue to change and evolve over time (Godfrey 2005). Finding the insignificant relationship between CEO pay duration and CSR strengths, McGuire et al. (2019) conclude that the long-term benefits of CSR strengths may be more uncertain and less clear. Studies have also indicated that engaging in socially irresponsible behavior such as CSR concerns, corporate tax avoidance, and underfunded employee pension are also considered as risk-taking behavior (Bouslah et al. 2018; Zolotoy et al. 2021; Martin et al. 2020). Hence, engagements in both CSR strengths and CSR concerns can be considered as risk-taking behavior.

Following the BAM, we hypothesize that CEOs with higher current wealth from their options compensation that they have already earned (endowed) tend to have a greater fear (loss aversion) of losing their endowed wealth and hence reduce their desire to take on risk from both CSR strengths and concerns. In contrast, CEOs with higher prospective wealth from their options compensation that they have not yet earned tend to induce them to take on more risk from CSR strengths because the potential long-term gains from CSR strengths could increase a CEO's prospective wealth in the future. However, CEOs may not see the current CSR concerns as relevant to their prospective wealth since the prospective wealth is not yet earned. Therefore, CEO prospective wealth may not be related to current CSR concerns.

The literature has also documented that engaging in institutional CSR (i.e., CSR activities that address broad institutional stakeholders and societal norms such as community, environment, human rights and diversity) has greater payoff uncertainties that are expected to be realized in the distant future compared to those of technical CSR (i.e., CSR activities that address stakeholders who have direct and immediate impact to the firms through transactions and exchanges such as employees, customers, and corporate governance) (Flammer 2018; Godfrey et al. 2009; Mattingly and Berman 2006). Since investing in institutional CSR to meet the societal normative expectations possesses payoffs that may be realized in the distant future (Godfrey et al. 2009), we argue that CEOs with greater prospective wealth option compensation have more incentive to invest in institutional CSR because doing so brings a potential long-term future return instead of immediate returns from technical CSR. In contrast, CEOs' current wealth option compensation induces them to become loss averse and therefore reduces their incentive to invest in institutional CSR.

Using a sample of 1565 U.S. firms from 1996 to 2018, we find evidence to support our hypotheses. We find that CEO current wealth is negatively related to both CSR strengths and CSR concerns. We also find that CEO prospective wealth is positively related to CSR strengths but unrelated to CSR concerns. We also find that CEO current wealth option

compensation is negatively related to institutional CSR and the negative relationship between CEO current wealth to institutional CSR is stronger than technical CSR. We also find that CEO prospective wealth option compensation is positively related to both institutional CSR and technical CSR. However, the positive relationship between CEO prospective wealth and institutional CSR is stronger than technical CSR.

Our research contributes to the literature in three ways. First, our study extends a stream of studies using the BAM to examine the relationship between CEO compensation and firms' CSR performance (DesJardine and Shi 2021; Martin et al. 2020; McGuire et al. 2019; Zolotoy et al. 2021). We establish the mechanisms and empirical evidence that, due to CEOs' loss aversion and risk-taking derived from their current and prospective wealth option compensation, there are both intended and unintended consequences of options compensation on firms' CSR performance. While the negative relationship between CEO current wealth and CSR concerns and the positive relationship between CEO prospective wealth and CSR strengths and institutional CSR are considered as desirable positive outcomes to broader stakeholders beyond the shareholders, the negative relationship between CEO current wealth and CSR strengths and institutional CSR and the insignificant relationship between CEO prospective wealth and CSR concerns could bring unintended negative consequences of CEO options compensation to our society.

Second, we extend McGuire et al. (2019) by using the exact constructs of CEO current and prospective options compensation that is derived from the BAM instead of the pay-performance sensitivity (PPS) and pay duration constructs that are derived from the traditional agency theory that assumes agents (CEOs) are risk averse instead of loss averse (Jensen and Murphy 1990; Gopalan et al. 2014).² Furthermore, we also examine the effects of CEOs' loss aversion and risk-taking from their current and prospective wealth option compensation on the types of firms' CSR (institutional and technical CSR). Thus, our study also extends the literature that examines the role of top management in meeting the interests of two different types of stakeholder groups, i.e., institutional and technical CSR (Flammer et al. 2019; Freeman et al. 2007; McCarthy et al. 2017).

Third, prior CSR studies emphasize the insurance-like protection of CSR on firm value when firms are experiencing negative events (Godfrey 2005; Godfrey et al. 2009; Lins et al. 2017; Zolotoy et al. 2019). Literature that examines the risk management characteristic of CSR contends that corporate social performance generates positive moral and social capital, which embraces shared beliefs and trust between a firm and its stakeholders, and CSR is likely to reduce firm risk and protect the firm from unexpected negative events. Our study extends this literature by providing a perspective that CEO loss aversion from the options contract can bring both positive and negative consequences on a firm's ability to build social and moral capital through CSR.

The remainder of this paper is organized as follows. In the "Related Literature" (Section 2), we discuss the literature related to CEO options compensation and corporate social responsibility (CSR) based on the BAM. In the "Hypotheses" (Section 3), we state the hypotheses and discuss how they relate back to the theory. In the "Data, sample, and methodology" (Section 4), we describe our data, sample construction, and methodology used in this study. In the "Empirical results" (Section 5), we discuss our findings. In the "Conclusion" (Section 6), we acknowledge the limitations of our research and conclude.

2. Related Literature

The literature linking top executive compensation and CSR have been mainly based on the traditional principal-agent or agency theory (Jensen and Meckling 1976) and focused on how specific components of compensation packages (i.e., salary, bonus, stock awards and stock options) affect CEOs risk aversion that leads to firms' socially responsible or irresponsible activities (Al-Shaer et al. 2023; McGuire et al. 2003; Deckop et al. 2006; Mahoney and Thorne 2005; Mahoney and Thorn 2006; Bouslah et al. 2018). Hill and Jones (1992) extend the traditional agency theory toward the stakeholder agency theory and recommend that top managers need to be incentivized to align the interests of managers with their

broad stakeholders. However, prior research that examines the effect of executive incentive compensation on CSR performance showed mixed evidence. McGuire et al. (2003) find that CEO salary and the percentage of long-term incentive payments (i.e., stock options and other long-term incentives) in the CEO's compensation package have a positive association with socially irresponsible activities. In contrast, Mahoney and Thorne (2005) and Mahoney and Thorn (2006) find that long-term compensation (i.e., stock option grants) is associated with lower socially irresponsible activities and positively related to socially responsible activities. Deckop et al. (2006) find that CSR is negatively related to short-term CEO pay (i.e., bonuses) and positively related to long-term CEO pay (i.e., restricted stocks and stock options). Bouslah et al. (2018) find that CEO risk-taking incentives measured by CEO vega are positively associated with socially irresponsible activities but only during the time period prior to the 2008 financial crisis. Using a sample of FTSE-All-Share companies for the period 2011–2019, Al-Shaer et al. (2023) find that CSR-linked compensation (CEOs who receive compensation from engagement in environmental activities) is positively related to socially responsible activities captured by enhancement in firms' environmental performance.

In an attempt to address the mixed evidence, Wiseman and Gomez-Mejia (1998) propose the behavioral agency model (BAM) and argue that CEOs exhibit a loss aversion behavior and are considering their stock options as a mixed gamble as opposed to risk aversion and a pure gamble with only a potential gain theorized by the classical agency theory (Jensen and Meckling 1976; Fama and Jensen 1983; Shleifer and Vishny 1997). The mixed gamble characteristic of stock options compensation implies that there is a possibility of both gains and losses when CEOs are awarded with stock options because the accumulated current cash value of in-the-money options (current wealth) is at risk of losses and while the options value over and above the current cash value (prospective wealth) can be increased only if a firm's stock price in the future is above the current price (Martin et al. 2013). Accordingly, when CEOs engage in firms' strategic decisions that are expected to bring both potential gain and loss at the same time, their decisions are likely to be influenced by both their *loss aversion behavior* from the possibility of losses to their current (endowed or already earned) option wealth as well as their *risk-taking behavior* from the potential gains from their prospective (future) option wealth. In other words, CEOs are likely to have greater fear of losing their current (endowed) option wealth from risk-taking activities as their current wealth from option compensation increases while CEOs may have a greater appetite for taking on risks when the perceived gains from prospective option wealth in the future are more than losses from their prospective wealth in the current period (Martin et al. 2013; Pepper and Gore 2015).

In the context of corporate irresponsible behaviors, Jain et al. (2023) attempts to advance the BAM by theorizing how the presence of conditions that result in distributive and procedural injustice in CEO compensation can further amplify the positive effects of CEO prospective option wealth on risk taking, thereby destroying stakeholder value. Using a longitudinal cross-sectional sample of 8669 firm-year observations for the period of 2001 to 2018, Jain et al. (2023) find that CEO perceptions of unfairness in compensation amplify excessive risk taking, thereby increasing the likelihood of corporate social irresponsibility. This study has important implications, not only for advancing the BAM, but also for designing executive compensation.

3. Hypotheses

3.1. CEO Option Compensation and CSR Strengths

Extant studies based on the BAM demonstrate that firms' investments (e.g., R&D spending, capital expenditure, and acquisitions) are driven by the top managers' risk-taking behavior from their option compensation. Based on the behavioral agency perspective, Wu and Tu (2007) indicate that CEO option compensation is positively related to firms' R&D spending. DesJardine and Shi (2021) show that CEO current wealth option compensation is negatively related to mergers and acquisitions (M&A) investment while CEO prospective wealth option compensation is positively related to M&A investment. Martin et al. (2020)

show that CEOs' loss aversion behavior due to their current wealth option compensation is related to lower investments in employee pensions, placing employee wealth at risk, to secure internally generated funds with lower cost in place of external financing, while CEOs' risk-taking behavior from their prospective wealth option compensation is related to higher investments in employee pensions as one lever to normalize increased strategic risk.

We examine CEO loss aversion and risk-taking appetites based on the BAM constructs of CEO current and prospective wealth option compensation in the context of CSR decisions. We argue that when considering whether they engage in socially responsible activities (CSR strengths) or socially irresponsible activities (CSR concerns), CEOs also consider the impacts of such activities on their own current wealth and prospective wealth from their stock options compensation. Consistent with the BAM literature, first, we argue that CEOs with higher current (endowed) wealth that they have already earned tend have greater loss aversion toward CSR strengths because they fear that the costs associated with investing in CSR strengths could adversely affect their current wealth while the benefits of CSR strengths are likely to be realized in the distant future and therefore cannot be accounted into the CEO current wealth. Thus, they tend to be loss-averse toward CSR strengths because their current endowed wealth is likely to be adversely affected as CSR investments increase.

Second, we argue that CEOs with higher prospective wealth option compensation tend to engage in CSR strengths since the immediate impact of costs of engaging in CSR strengths during the current period on their prospective wealth is relatively small to none because prospective wealth is not yet earned during the current period, while the potential future long-term gains from CSR strengths could increase their prospective wealth in the future period. Greater prospective wealth option compensation increases CEOs' risk-taking behavior as they have more incentive to focus on the investments that bring long-term payoffs (Martin et al. 2020; Desjardine and Shi 2021) including CSR investments in a form of CSR initiatives or CSR strengths. Hence, we expect that higher CEOs prospective option wealth compensation is positively related to CSR strengths. Thus, our first hypothesis can be stated as follows:

H1. *CEO current (prospective) wealth option compensation is negatively (positively) related to firms' CSR strengths.*

3.2. CEO Option Compensation and CSR Concerns

Existing studies that examine the CEO options compensation and CSR concerns or corporate social irresponsibility in the context of BAM are emerging. McGuire et al. (2019) argue that high pay-performance (PPS) and pay duration make the CEO perceive that their compensation is at a greater risk when CSR concern (weakness) increases. Based on the BAM, they argue that PPS and longer pay duration evoke a loss avoidance framing which discourages CEOs to take actions with significant downside risks such as CSR concerns. Therefore, greater PPS and longer pay duration leads to lower CSR concerns. However, McGuire et al.'s (2019) PPS and pay duration constructs are not derived from the BAM constructs of CEO current and prospective wealth option compensation. The PPS and pay duration constructs are derived from the traditional agency theory that assumes that agents are risk-averse (Jensen and Murphy 1990; Gopalan et al. 2014). Hence, there is a gap between their theoretical conceptualization from the BAM and the constructs that they use on their empirical analysis.

Using the BAM framework, Zolotoy et al. (2021) examine the relationship between CEO current wealth and corporate social irresponsibility in the context of corporate tax avoidance. They argue that the CEO current wealth increases their loss aversion of losing their current wealth from tax penalties if they engage in tax avoidance when the firm is currently paying relatively lower taxes than its peers. They also argue that CEO current wealth increases their risk-taking behavior to obtain lower taxes by engaging in tax avoidance if the firm is currently paying relatively higher taxes compared to its peers as an attempt to

increase current wealth from tax avoidance. Thus, CEO current wealth is negatively related to tax avoidance when the firms' current effective tax is lower than the average tax rate of peer firms and vice versa. While Zolotoy et al. (2021) are using the correct construct of CEO current wealth from the BAM to measure CEO loss aversion, they do not examine the relationship between CEO prospective wealth and tax avoidance.

We extend these emerging corporate social irresponsibility studies using BAM framework by simultaneously examining the differing impacts of CEO current wealth and prospective wealth on the firms' CSR concerns (weaknesses). Since irresponsible behavior or CSR concerns can bring significant and immediate adverse effect on firms' current stock prices and increase firms' systematic risk (Stäbler and Fischer 2020; Harjoto et al. 2022b; Oikonomou et al. 2012), we argue that CEOs with higher current wealth option compensation tend to have greater loss aversion with CSR concerns. Losses from CSR concerns during the current period can adversely affect CEO current wealth immediately. Due to the fear of losing the value of their current wealth from stock options compensation that they have already earned, CEOs tend to avoid CSR concerns.

The relationship between CEO prospective wealth and CSR concerns from the perspective of BAM's risk taking is less apparent. On one hand, CSR concerns during the current period could have potential negative effects on stock prices in the future period because of reputational damage and future litigation costs, which may adversely affect their prospective wealth value in the future; thus, CEOs may put in some efforts to reduce CSR concerns as one lever to normalize increased strategic risk taking from other activities such as research and development and capital expenditures.

However, we argue that since prospective wealth is not yet earned, CEOs practically have nothing to lose and also nothing to gain in their prospective wealth from CSR concerns that occur in the current period. In other words, CSR concerns during the current period are expected to have no effect on CEO prospective wealth since the current value of prospective wealth is close to zero (Martin et al. 2013). Thus, we expect that CEOs do not care as much about firms' CSR concerns since CEOs expect that CSR concerns during the current period would not affect the prospective wealth value during the current period. Thus, our second hypotheses are stated as:

H2a. *CEO current wealth option compensation is negatively related to firms' CSR concerns.*

H2b. *CEO prospective wealth option compensation is not related to firms' CSR concerns.*

3.3. CEO Option Compensation and Institutional and Technical CSR

Existing studies have demonstrated that firms' CSR investments can be categorized as institutional and technical CSR engagements. Scott and Meyer (1983) define firms' institutional environment as the natural environment (community, environment, and the public interest groups) that imposes normative expectations on firms' behavior while the firms' technical environment is related to the firms' resource exchange with their stakeholders (employees, customers, shareholders, and suppliers). Freeman et al. (2007) and Mattingly and Berman (2006) make a distinction between CSR activities targeting primary stakeholders (i.e., customers, shareholders, employees, and suppliers), which is referred to as technical CSR, and those targeting secondary stakeholders (i.e., community and broad society), which is referred to as institutional CSR. More importantly, Godfrey et al. (2009) argue that technical CSR (e.g., activities enhancing employee satisfaction) should produce exchange capital, which brings more tangible and immediate positive payoffs to increase the firm's profits, whereas institutional CSR (e.g., environmental protection activities) is expected to produce long-term moral capital that could bring positive potential payoffs in the long run.

Institutional CSR investments such as generous charitable contributions are likely to attract positive public attention by signaling firms' commitments to social responsibility toward broader external stakeholders. Such positive signals from institutional CSR can

produce significant support from society at large in the long run (Flammer 2018; Godfrey et al. 2009). However, the immediate payoffs from institutional CSR are expected to be more uncertain than the payoffs from technical CSR. Firms that invest in institutional CSR tend to put a higher weight on large positive outcomes in the long term and hence, institutional CSR exhibits more uncertain immediate payoffs. On the other hand, investment in technical CSR is more likely to have a direct and immediate positive effect on firms' profits because those activities targeting employees, customers, and vendors have more predictable payoffs compared to institutional CSR. That is, activities to enhance technical CSR are considered a less risky investment compared to institutional CSR.

Based on the BAM, we expect that CEOs' current wealth option compensation induces them to become more loss averse to investing in institutional CSR, and that CEOs with higher current wealth will tend to choose technical CSR over institutional CSR because technical CSR could potentially bring immediate payoffs, although the immediate costs associated with both technical and institutional CSR are still expected to have an adverse effect on CEO current wealth. Therefore, we expect that greater CEO current wealth option compensation is more negatively related to investment in institutional CSR than technical CSR. In contrast, CEOs with greater prospective wealth option compensation have more incentive to invest in institutional CSR because institutional CSR tends to bring positive returns in the long run that increase their prospective wealth value in the future (i.e., CSR is expected to increase a firm's future value at the expense of the firm's current value). Higher CEO prospective wealth may or may not induce the CEO to invest in technical CSR since the payoffs from technical CSR are expected to be realized immediately. Thus, investment in technical CSR is expected to have no effect on CEO prospective wealth in the future period. Therefore, we expect that CEO prospective wealth is more positively linked to institutional CSR than technical CSR. Our third hypotheses can be stated as follows:

H3a. *CEO current wealth option compensation is more negatively related to institutional CSR than technical CSR.*

H3b. *CEO prospective wealth option compensation is more positively related to institutional CSR than technical CSR.*

4. Data, Sample, and Methodology

4.1. Data Source and Sample Selection

We start our data compilation from the MSCI ESG Stats database (formerly known as the Kinder, Lydenberg, and Domini Research and Analytics Inc. or KLD Stats), which contains yearly CSR ratings of large U.S. public companies since 1991. This database initially covered approximately 650 companies that included the constituents of the Domini 400 Social SM Index and the Standard & Poor's (S&P) 500 Index over the period from 1991 to 2000. Since then, the MSCI ESG STATS has steadily increased the number of firms in the sample by adding the constituents of the Russell 1000 Index in 2001, the Large Cap Social Index in 2002, and both the Russell 2000 Index and the MSCI USA Investible Market Index (IMI) in 2003.

There are 66,141 firm-year observations in the MSCI ESG STATS over the period from 1991 to 2018. We merge the MSCI ESG STATS with Compustat to construct firm-level control variables. This step yields 40,639 firm-year observations. In addition, we use the Institutional Shareholder Services (ISS) Director and ExecuComp for CEO and board of directors control variables, which started in 1996.

Although the MSCI ESG STATS covers the period from 1991 to 2018, the ISS data containing variables for corporate governance and board characteristics are available from 1996, which limits our sample period from 1996 to 2018. We also exclude firms that operate in controversial industries (alcohol, gambling, tobacco, etc.) since firms that operate in these industries have no discretion to avoid CSR concerns and they are inherently different (El Ghoul et al. 2011). After we delete observations with missing values, our final sample

used in our main analysis consists of 9966 firm-year observations (an unbalanced panel of 1565 U.S. firms) from 1996 to 2018.

4.2. Empirical Measures

4.2.1. CSR Measures

Our main measures of environmental, social, and governance (ESG) or CSR performance of a firm are the CSR strengths and CSR concerns scores, which reflects the extent of the firm's engagement in CSR activity. The MSCI ESG STATS database classifies the ESG performance of a firm into thirteen dimensions of CSR: community, diversity, employee relations, environment, product, human rights, corporate governance, alcohol, gambling, firearms, military, tobacco, and nuclear power. The first seven dimensions represent qualitative issue areas and the rest of the dimensions characterize controversial business issues.³ We use the first six of these qualitative issue areas to calculate the CSR strengths and CSR concerns scores. We exclude the corporate governance dimension since governance is generally not part of a firm's CSR (Kim et al. 2012; Di Giuli and Kostovetsky 2014; Lins et al. 2017)⁴.

The MSCI ESG STATS assigns a binary rating to a set of strength and concern categories in each dimension. As the number of strength and concern categories for any given dimension varies over time, a simple summation approach does not allow for inferring that a CSR score of +2 is twice as good as +1 across firms and over time. Thus, we follow Deng et al. (2013) and Lins et al. (2017) and scale total strength (or concern) scores by the number of strength (or concern) categories in that year⁵. The adjusted CSR strengths and CSR concerns scores therefore range from −1 to +1.

To examine H3a and H3b, we disaggregate the adjusted CSR score into institutional CSR score and technical CSR score. Consistent with prior studies (Flammer 2018; Godfrey et al. 2009; Mattingly and Berman 2006), we calculate technical CSR score using three dimensions of total net CSR strengths minus CSR concerns scores for employee relations, products, and corporate governance, while we measure institutional CSR score using those of human rights, community, diversity, and environment. All disaggregated CSR scores are also calculated as adjusted scores as previously described.

4.2.2. CEO Current Wealth and CEO Prospective Wealth Measures

We follow closely the constructs of CEO current wealth and prospective wealth from the BAM (Martin et al. 2013, 2020). The CEO current wealth is calculated using the number of options from each option grant, multiplied by their corresponding spread (for in-the-money options) on the final day for firm i and the fiscal year t (Martin et al. 2013, 2020). CEO prospective option wealth represents the potential additional wealth that could be realized over and above the current period cash value of stock options due to future increases in a firm's stock price and is calculated based on the number of options held $\times [(1.08^{\text{time}} \times \text{stock price}) - \text{stock price}]$ for firm i and year t , where 8% represents the average annual returns for the Dow Jones Industrial Index (DIA) that corresponds to our sample period of 1996 to 2018 (Martin et al. 2013, 2020). To examine the tradeoff between CEO prospective wealth and CEO current wealth and to reduce the collinearity between CEO prospective and current wealth, we also use the ratio of CEO prospective wealth to CEO current wealth as an alternative measure of CEO risk-taking incentive and loss aversion (see model (2) below).

4.2.3. Empirical Models

To test all our hypotheses, we estimate the following regression Equations (1) and (2) of our empirical model specifications:

$$\begin{aligned}
CSR_{it} = & \beta_0 + \beta_1 CEO \text{ Current Wealth}_{it} + \beta_2 CEO \text{ Prospective Wealth}_{it} + \beta_3 Size_{it} + \beta_4 ROA_{it} \\
& + \beta_5 Dividend_{it} + \beta_6 Leverage_{it} + \beta_7 Market \text{ to Book}_{it} + \beta_8 Intangible_{it} \\
& + \beta_9 CEO \text{ Cash Pay}_{it} + \beta_{10} CEO \text{ Ownership}_{it} + \beta_{11} CEO \text{ Tenure}_{it} + \beta_{12} WCEO_{it} \\
& + \beta_{13} CEO \text{ Duality}_{it} + \beta_{14} Board \text{ Size}_{it} + \beta_{15} Board \text{ Independence}_{it} \\
& + \beta_{16} Board \text{ Tenure}_{it} + \beta_{17} Board \text{ Female}_{it} + \beta_{18} Social \text{ Capital}_{kt} \\
& + \beta_{19} Religiosity_{kt} + \delta_i + \sum_{t=1996}^{2018} \gamma_t Year_t + \varepsilon_{it},
\end{aligned} \tag{1}$$

$$\begin{aligned}
CSR_{it} = & \beta_0 + \beta_1 CEO \text{ Prospective Wealth Ratio}_{it} + \beta_2 Size_{it} + \beta_3 ROA_{it} + \beta_4 Dividend_{it} \\
& + \beta_5 Leverage_{it} + \beta_6 Market \text{ to Book}_{it} + \beta_7 Intangible_{it} \\
& + \beta_8 CEO \text{ Cash Pay}_{it} + \beta_9 CEO \text{ Ownership}_{it} + \beta_{10} CEO \text{ Tenure}_{it} + \beta_{11} WCEO_{it} \\
& + \beta_{12} CEO \text{ Duality}_{it} + \beta_{13} Board \text{ Size}_{it} + \beta_{14} Board \text{ Independence}_{it} \\
& + \beta_{15} Board \text{ Tenure}_{it} + \beta_{16} Board \text{ Female}_{it} + \beta_{17} Social \text{ Capital}_{kt} \\
& + \beta_{18} Religiosity_{kt} + \delta_i + \sum_{t=1996}^{2018} \gamma_t Year_t + \varepsilon_{it},
\end{aligned} \tag{2}$$

where i , k , and t denote firm, county, and year, respectively. Our dependent variables are CSR strengths, CSR concerns, institutional CSR and technical CSR. Our main independent variables are CEO current wealth, CEO prospective wealth, and the ratio of CEO prospective wealth to CEO current wealth for firm i at year t . To control for unobserved, time-invariant heterogeneity, we include firm fixed effects (δ_i) in our model specification. We also use year fixed effects to control for factors changing each year that are common to all firms for a given year. Industry fixed effects are subsumed by firm fixed effects, thereby industry fixed effects are not included in both Equations (1) and (2).

Following the BAM (Martin et al. 2013, 2020), we include several control variables. We include the firm size (*Size*) as the natural logarithm of total assets. We include return on assets (*ROA*) as a proxy for firms' profitability. In addition, we include dividend payout policy (*Dividend*) and the financial risk (*Leverage*) of the firm as other control variables. When firms spend more resources to financial stakeholders (shareholder and creditors) and face more financial risk, they are less likely to engage in CSR activities. We control for growth opportunities (*Market to Book*) and intangible assets (*Intangible*) of the firm. When firms have higher growth opportunities or intangible assets, they can implement CSR commitments as a competitive strategy or product differentiation strategy. We also include CEO characteristics such as CEO cash compensation (*CEO Cash Pay*), CEO stock ownership (*CEO Ownership*), CEO tenure (*CEO Tenure*), CEO gender (*WCEO*), and CEO as board chairperson (*CEO Duality*).

Finally, prior studies suggest that CSR orientations of the board are important determinants of CSR performance (Rao and Tilt 2016; Shaukat et al. 2016; Endrikat et al. 2021). We therefore control for the size of the board (*Board Size*), the proportion of outside directors to total directors (*Board Independence*), the average number of years that directors served on the board (*Board Tenure*), and the proportion of female directors to total directors (*Board Female*). Based on literature that examines the impact of local social capital and religiosity on firms' CSR (Artiach et al. 2010; Harjoto and Rossi 2019; Di Giuli and Kostovetsky 2014; Jha and Cox 2015; McGuire et al. 2012; Zolotoy et al. 2019), we also include these control variables in our regressions. *Social Capital* is the level of social capital in a county (Jha and Cox 2015); *Religiosity* is the percentage of religious adherents in a county (McGuire et al. 2012); *Year* represents the year dummy variables. *FF49* represents the Fama–French 49 industry dummy variables. The ε_{it} is the random error term for firm i at year t . We use heteroscedasticity robust standard errors clustered at the firm-year level across all regression models. We discuss how we measure each variable in the following sub-sections and provide definitions of each variable in Appendix A.

5. Empirical Results

5.1. Descriptive Statistics

Panel A of Table 1 provides descriptive statistics of our dependent variables, firms' CSR performance. The average of firms' CSR strength scores (0.429) is greater than CSR concern scores (0.293) in our sample. On average, our sample firms have 0.086 technical CSR scores and 0.136 institutional CSR scores, which indicates that firms in our sample have stronger institutional CSR performance than technical CSR. Panel B of Table 1 displays descriptive statistics of our main test (independent) variables. On average, the CEO current wealth and prospective wealth in our sample firms are \$12.543 million and \$187.277 million, respectively.

Table 1. Descriptive statistics.

Panel A Dependent Variable						
	Obs.	Mean	Std. Dev.	p25	Median	p75
CSR Strength	9966	0.429	0.629	0.000	0.167	0.583
CSR Concern	9966	0.293	0.376	0.000	0.200	0.478
Technical CSR	9966	0.086	0.525	−0.229	0.000	0.250
Institutional CSR	9966	0.136	0.690	−0.325	0.000	0.367
Panel B Test Variable						
	Obs.	Mean	Std. Dev.	p25	Median	p75
CEO Current Wealth (in \$1000)	9966	12,543	21,058	1165	4806	12,129
CEO Prospective Wealth (in \$1000)	9966	187,277	326,818	6899	46,239	201,198
Panel C Control Variable						
	Obs.	Mean	Std. Dev.	p25	Median	p75
Size	9966	8.052	1.611	6.848	7.939	9.029
ROA	9966	0.101	0.084	0.051	0.093	0.143
Dividend	9966	0.015	0.025	0.000	0.006	0.022
Leverage	9966	0.217	0.190	0.066	0.199	0.322
Market to Book	9966	4.083	63.649	1.676	2.494	3.913
Intangible	9966	0.204	0.202	0.029	0.147	0.325
CEO Cash Pay	9966	0.318	0.236	0.142	0.241	0.430
CEO Ownership	9966	1.314	3.677	0.001	0.220	0.917
CEO Tenure	9966	7.514	7.192	2.000	6.000	10.000
WCEO	9966	0.038	0.190	0.000	0.000	0.000
CEO Duality	9966	0.613	0.487	0.000	1.000	1.000
Board Size	9966	9.507	2.540	8.000	9.000	11.000
Board Independence	9966	0.758	0.136	0.667	0.778	0.875
Board Tenure	9966	9.109	14.108	6.333	8.500	11.100
Board Female	9966	0.125	0.100	0.000	0.111	0.182
Social Capital	9966	−0.534	0.820	−1.127	−0.509	−0.015
Religiosity	9966	0.526	0.110	0.439	0.528	0.596

Panel C of Table 1 lists descriptive statistics for control variables that are included in all our multivariate regression analyses. The mean of the natural log of the firm's total assets (*Size*) is 8.052, which implies that, on average, our sample firms' total assets are approximately over \$3.14 billion. The averages of ROA and dividends to total assets are 10.1% and 1.5% respectively. Firms in our sample have a 21.7% total debt to total assets ratio and a market to book value of equity ratio of 4.083. The average intangible asset to total asset is 20.4%. The average CEO cash (salary and bonus divided by total compensation) is 31.8% and the average CEO share ownership is 1.314%. The average CEO tenure is 7.5 years and 3.8% of CEOs in our sample are women. Approximately 61.3% of CEOs also serve as chairpersons of the board (*CEO Duality*). On average, the firms in our sample have nine (9.5) board members and 75.8% of directors on boards are independent directors. The average board tenure is nine (9.109) years and 12.5% of directors on board are women.

directors. On average, our sample firms are located in counties with social capital of -0.534 , and 52.6% of the county population indicated that they attended religious congregations.

5.2. Multivariate Regression Analyses

We empirically test our hypotheses using a multivariate ordinary least square regression analysis. All regressions include the Fama–French 49 industry and year dummies and heteroscedasticity-corrected standard errors with two-way clustering based on firm-year (Petersen 2009). We also include estimation results using the firm fixed effect model in columns (2) and (4) to address omitted variable bias that could affect both CEO prospective and current wealth and CSR performance.

Table 2 presents the relationship between CEO current wealth and prospective wealth and the ratio of CEO prospective wealth to CEO current wealth (*CEO Prospective to Current Wealth Ratio*) and CSR strengths and CSR concerns. In column (1), we find that a \$1 million increase in the CEO current wealth option compensation reduces CSR strengths by 2.071. We also find that a \$1 million increase in CEO prospective wealth option compensation increases CSR strengths by 0.227⁶. In column (3), we also find that the ratio of CEO prospective wealth to current wealth is positively related to CSR strengths (0.036). The magnitudes of these slope coefficients are economically significant relative to the mean of CSR strengths (0.429). Hence, we find evidence to support our first hypothesis (H1) that CEO current wealth increases CEOs loss aversion from losing the value of their current wealth that leads to lower incentive to engage in CSR strengths, while CEO prospective wealth increases their risk-taking behavior that leads to higher incentive to engage in CSR strengths.

Column (2) of Table 2 shows that CEO current wealth is also negatively related to CSR concerns. A \$1 million increase in CEO current wealth reduces CSR concerns by 0.542 and this magnitude is quite significant relative to the mean of CSR concerns (0.293). Thus, we find evidence to support our H2a. We find that CEO prospective wealth is not significantly related to CSR concerns. Hence, we find evidence to support our H2b argument that CSR concerns during the current period are expected to have little effect on CEO prospective wealth since the current value of prospective wealth is close to zero (Martin et al. 2013). Therefore, CEO prospective wealth is unrelated to firms' CSR concerns since CEO prospective wealth has little relation to firms' irresponsible behavior (CSR concerns). We examine the effect of CEO prospective and current wealth ratio on CSR concerns in column (4) and find that greater CEO prospective wealth relative to current wealth is associated with lower CSR concerns. However, the economic significance of the magnitude of the slope coefficient (-0.007) is low relative to the mean of CSR concerns (0.293). We interpret negative but low economic significance as evidence that CEOs are considering the tradeoff between losing their current wealth from CSR concerns and experiencing no potential effect on their prospective wealth from CSR concerns during the current period.

Examining the relationship between the control variables and firms' CSR, we find that larger, more profitable firms and firms that pay higher dividends and have less leverage tend to have higher CSR. These findings are consistent with the extant literature (e.g., Jo and Harjoto 2012; Jha and Cox 2015; Cheung et al. 2016; McGuire et al. 2019; Benlemlih 2019). Firms with greater intangible assets tend to have lower CSR. Consistent with Martin et al. (2020), we find that CEO tenure is negatively related to CSR performance, while women CEOs are positively related to firms' CSR performance. Consistent with the literature (Harjoto et al. 2015; Byron and Post 2016; McGuire et al. 2019), we find that board size and a higher proportion of women directors on boards are positively related to CSR performance. Consistent with McGuire et al. (2012) and Zolotoy et al. (2019), we find firms located in counties with higher religiosity tend to have lower CSR. Overall, most of our findings related to the control variables are consistent with the extant literature.

Table 2. Relationship between CEO current and prospective wealth and CSR strength and concerns.

Dependent Variable	CSR Strength	CSR Concern	CSR Strength	CSR Concern
Model	(1)	(2)	(3)	(4)
CEO Prospective Wealth	0.227 *** (7.426)	0.022 (1.375)		
CEO Current Wealth	−2.071 *** (−5.426)	−0.542 ** (−2.472)		
CEO Prospective to Current Wealth Ratio			0.036 *** (3.401)	−0.007 *** (−5.050)
Size	0.091 *** (5.598)	0.073 *** (7.278)	0.104 *** (6.604)	0.073 *** (7.396)
ROA	0.230 *** (2.926)	−0.089 * (−1.727)	0.190 ** (2.444)	−0.110 ** (−2.117)
Dividend	1.062 *** (3.182)	0.380 * (1.838)	1.178 *** (3.397)	0.400 * (1.937)
Leverage	0.051 (0.978)	−0.062 ** (−2.136)	0.071 (1.327)	−0.058 ** (−1.992)
Market to Book	0.000 (1.022)	−0.000 ** (−2.401)	0.000 (0.849)	−0.000 ** (−2.404)
Intangible	−0.110 * (−1.783)	−0.027 (−0.792)	−0.114 * (−1.828)	−0.029 (−0.844)
Board Size	−0.004 (−0.910)	−0.002 (−0.616)	−0.005 (−1.170)	−0.002 (−0.676)
CEO Cash Pay	0.051 ** (2.456)	−0.016 (−1.084)	0.048 ** (2.280)	−0.015 (−1.050)
CEO Ownership	0.001 (0.491)	−0.002 (−1.241)	0.002 (0.523)	−0.002 (−1.244)
CEO Tenure	−0.001 (−0.602)	0.002 *** (2.732)	−0.002 (−1.372)	0.002 ** (2.312)
WCEO	0.205 *** (3.530)	0.032 (1.025)	0.192 *** (3.265)	0.031 (0.972)
CEO Duality	0.009 (0.633)	0.010 (1.175)	0.011 (0.731)	0.010 (1.132)
Board Independence	0.021 (0.421)	0.064 * (1.914)	0.023 (0.457)	0.065 * (1.948)
Board Tenure	−0.000 (−1.163)	0.000 (0.394)	−0.000 (−0.895)	0.000 (0.449)
Board Female	0.750 *** (7.977)	−0.459 *** (−8.555)	0.772 *** (8.099)	−0.455 *** (−8.451)
Social Capital	0.067 *** (3.102)	−0.025 ** (−2.070)	0.068 *** (3.189)	−0.024 ** (−2.009)
Religiosity	−0.500 *** (−3.723)	0.281 *** (3.555)	−0.544 *** (−4.015)	0.276 *** (3.489)
Intercept	−0.150 (−1.017)	−0.418 *** (−4.504)	−0.202 (−1.383)	−0.414 *** (−4.503)
Year FE	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Observations	9966	9966	9966	9966
Adj. R-squared	0.625	0.593	0.620	0.593

Note: *CEO Prospective Wealth* indicates CEO prospective wealth compensation scaled in \$ million. *CEO Current Wealth* indicates CEO current wealth compensation scaled in \$ million. *CEO Prospective to Current Wealth Ratio* indicates the ratio of CEO prospective wealth compensation to CEO current wealth compensation scaled in \$ million. *Social Capital* and *Religiosity* are backfilled. Standard errors are heteroscedasticity robust standard errors (clustered at the firm-year level); t-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level, respectively.

Next, we examine whether CEO current (prospective) wealth is more negatively (positively) related to institutional CSR compared to technical CSR. Columns (1) and (2) of Table 3 also show that CEO current wealth option compensation is negatively related to institutional CSR, which provides support to our H3a that current wealth option compensation reduces CEO motivation to invest in institutional CSR. The slopes difference between institutional CSR minus technical CSR is negative (−1.894) and is statistically significant at the 1% level. Therefore, we also find that CEO current wealth is more negatively related to institutional CSR than technical CSR, which supports H3a.

Columns (1) and (2) of Table 3 also show that CEO prospective wealth option compensation is positively related to both institutional and technical CSR. More importantly, CEO

prospective wealth is more positively related to institutional CSR than technical CSR, which supports H3b. The test of slope difference between institutional CSR minus technical CSR is positive (0.096) and statistically significant at the 1% level. Columns (3) and (4) also show that the ratio of CEO prospective to current wealth compensation is more positively related to institutional CSR than technical CSR. The test of slope difference between institutional CSR minus technical CSR is positive (0.013) and is statistically significant at the 1% level. Overall, we find evidence to support our hypothesis H3b that CEO prospective wealth option compensation is more positively related to institutional CSR that is expected to bring realized gains in the long-term future period than to technical CSR that is expected to bring realized gains immediately.

Table 3. The relationship between CEO option compensation and technical and institutional CSR.

Dependent Variable	CSR Technical	CSR Institutional	CSR Technical	CSR Institutional
Model	(1)	(2)	(3)	(4)
CEO Current Wealth	−0.495 (−1.581)	−2.389 *** (−6.812)		
	Coefficient Difference Test (CSR Institutional—CSR Technical) −1.894 *** (−5.065)			
CEO Prospective Wealth	0.116 *** (4.480)	0.212 *** (7.684)		
	Coefficient Difference Test (CSR Institutional—CSR Technical) 0.096 *** (3.169)			
CEO Prospective to Current Wealth Ratio			0.012 *** (3.606)	0.025 *** (3.419)
			Coefficient Difference Test (CSR Institutional—CSR Technical) 0.013 *** (2.359)	
Controls	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES
Observations	9966	9966	9966	9966
Adj. R-squared	0.484	0.519	0.481	0.511

Note: *CEO Prospective Wealth* indicates CEO prospective wealth compensation scaled in \$ million. *CEO Current Wealth* indicates CEO current wealth compensation scaled in \$ million. *CEO Prospective to Current Wealth Ratio* indicates the ratio of CEO prospective wealth compensation to CEO current wealth compensation scaled in \$ million. *Social Capital* and *Religiosity* are backfilled. Standard errors are heteroscedasticity robust standard errors (clustered at the firm-year level); t-statistics are reported in parentheses. *** indicates statistical significance at 1% level.

Overall, our findings provide evidence that different types of CEO options compensation, i.e., current and prospective wealth, bring different incentives that influence CEO loss aversion and risk-taking behavior on investing in institutional versus technical CSR. Consequently, different types of CEO options compensation are expected to bring different outcomes to firms' external and internal stakeholders. While higher prospective option wealth is associated with both higher institutional and technical CSR, CEOs with higher prospective wealth tend to emphasize institutional CSR over technical CSR. CEO current wealth discourages CEOs to invest in both technical CSR and especially institutional CSR. Our findings from Table 2 indicate that while CEO current wealth discourages CEOs to engage in CSR concerns, CEO current wealth also discourages CEOs to engage in institutional CSR that would bring greater benefits to broader society. While CEO prospective wealth encourages CEOs to engage in CSR strengths, it does not discourage CEOs to engage in socially irresponsible behavior (CSR concerns).

6. Conclusions

In this study, we utilize more precise constructs from the BAM by arguing that CEOs' loss aversion and risk-taking behavior from their current and prospective wealth option

compensation influence their decisions to engage in positive CSR activities (CSR strengths), socially irresponsible activities (CSR concerns), CSR that brings benefits to broader stakeholders in the society at large (institutional CSR), and CSR that provides benefits to stakeholders who are directly related to the firms' operations (technical CSR). Our findings complement those of [Jain et al. \(2023\)](#) which show that CEO perceptions of unfairness in compensation amplify the positive effects of CEO prospective option on excessive risk-taking behavior, thereby increasing the likelihood of corporate social irresponsibility. Using KLD ESG concerns as one of proxies for socially irresponsible activities of firms, [Jain et al. \(2023\)](#) find that CEO current option wealth is negatively associated with CSR concerns.

Our empirical findings bring important managerial and social implications by demonstrating that CEO option compensation structure brings outcomes that are both desirable and undesirable to the company and the broader stakeholders and society. From the managerial perspective, studies have shown that firms' CSR, especially CSR strengths, generates positive social and moral capital that can act as the insurance-like protection against negative events ([Godfrey et al. 2009](#); [Jia et al. 2020](#); [Shiu and Yang 2017](#)). However, CEO loss aversion from their current wealth options contract that leads to avoiding investment in CSR strengths and a lack of risk-taking appetite for their prospective wealth that leads to an insignificant relationship between prospective wealth and CSR concerns can bring negative consequences to a firm's ability to build social and moral capital through CSR to protect the firms from negative events.

From the societal perspective, while CEO current wealth can curb CEO desires to engage in socially irresponsible activities (CSR concerns), it also reduces the desire to engage in socially responsible activities (CSR strengths) because such activities are expected to adversely affect CEO current wealth. From the business ethics perspective ([Hsieh 2017](#); [Lichtenberg 2010](#)), CEO current wealth incentivizes CEOs to engage in the negative duty of corporations (do no harm). However, it does not promote the positive duty of corporations to provide social values for the betterment of our society at large ([Berkey 2021](#); [Wettstein 2010](#)). Comparably, while CEO prospective wealth compensation incentivizes CEOs to engage in CSR strengths and institutional CSR (positive duty), it does not significantly discourage CEOs from doing harm (CSR concerns). In conclusion, our study indicates that the current top management incentive structure, especially related to stock options, calls for further improvements both from the corporate governance perspective, regulatory perspective, and the stakeholder perspective to better align top managers' interests with their priorities and commitments to meet broader stakeholders' interests.

We recognize that our study has potential limitations. One such limitation may result from endogeneity issues. Although we try to fully address these issues using firm fixed effects and year fixed effects in our model specifications, we cannot completely rule out endogeneity concerns that arise from omitted variables, simultaneity, and measurement error. We also acknowledge some weaknesses of the KLD database such as its unbalanced panel structure, certain construct-validity issues, and KLD's own assessment of a firm's CSR based on surveys and KLD's in-house analysis ([Cai et al. 2011](#); [Chatterji et al. 2009](#)). Therefore, we are careful not to overreach in our conclusions. Despite these limitations, the KLD database is one of the most commonly used data sources for quantitatively measuring the CSR engagement of firms. As our study provides a connection between CEO option payoff (i.e., CEO current wealth and prospective wealth option compensation) and CSR, future research can explore the intertwining effects of multiple determinants on firms' CSR investments such as local culture including social capital and religiosity, CEO traits (e.g., narcissism) and CEO incentive structure, investor sentiment, and specific contexts.

Author Contributions: Conceptualization, M.A.H. and H.S.; methodology, S.J.; software, S.J.; validation, S.J., S.M.L. and H.S.; formal analysis, S.J.; investigation, S.J.; resources, H.S.; data curation, S.M.L.; writing—original draft preparation, M.A.H.; writing—review and editing, H.S.; visualization, S.J.; supervision, S.M.L.; project administration, H.S.; funding acquisition, M.A.H. All authors have read and agreed to the published version of the manuscript.

Funding: Harjoto acknowledges financial support from the 2023 Pepperdine Provost Grant and the Tsao Family Foundation.

Data Availability Statement: Data is available upon request.

Conflicts of Interest: Authors declare no conflict of interest.

Appendix A. Variable Definition

Variable	Definition
<i>CSR Strength</i>	The adjusted CSR strength score is the sum of yearly adjusted strength scores in six qualitative issue areas which include community, diversity, employee relations, environment, product and human rights dimensions from the MSCI ESG STATS database.
<i>CSR Concern</i>	The adjusted CSR concern score is the sum of yearly adjusted concern scores in six qualitative issue areas which include community, diversity, employee relations, environment, product and human rights dimensions from the MSCI ESG STATS database.
<i>Technical CSR</i>	Technical CSR score is the sum of three technical CSR dimensions, which include employee relations, products, and corporate governance.
<i>Institutional CSR</i>	Institutional CSR score is the sum of four institutional CSR dimensions, which include human rights, community, diversity, and environment.
<i>CEO Prospective Wealth</i>	CEO prospective option wealth is calculated based on Martin et al. (2013, 2020) : $Prospective\ wealth = number\ of\ options\ held \times [(1.08^{time} \times stock\ price) - stock\ price]$, where 8% represents the average annual returns for the Dow Jones Industrial Index (DIA) that corresponds to our sample period of 1996 to 2018.
<i>CEO Current Wealth</i>	CEO current wealth is calculated using the number of options from each option grant, multiplied by their corresponding spread (for in-the-money options) on the final day of the fiscal year (Martin et al. 2013, 2020).
<i>CEO Prospective to Current Wealth Ratio</i>	The ratio of CEO prospective wealth to CEO current wealth.
<i>Size</i>	Natural logarithm of total assets.
<i>ROA</i>	Operating income after depreciation divided by total assets.
<i>Dividends</i>	The sum of dividends to common and preferred shares divided by total assets.
<i>Leverage</i>	Book value of debts (sum of current liabilities and long-term debt) divided by total assets.
<i>Market to Book</i>	Market value of equity divided by book value of equity.
<i>Intangible</i>	Intangible assets divided by total assets.
<i>CEO Cash Pay</i>	CEO salary and bonus divided by CEO total compensation (Devers et al. 2008).
<i>CEO Tenure</i>	Number of years since CEO is appointed.
<i>WCEO</i>	A dummy variable equals to one if CEO is female, and zero otherwise.
<i>CEO Ownership</i>	CEO share ownership divided by total shares outstanding.
<i>CEO Duality</i>	A dummy variable equals to one if CEO is also the chair of the board, and zero otherwise.
<i>Board Size</i>	Total number of directors on the board.
<i>Board Independence</i>	Proportion of outside directors to total directors on the board.
<i>Board Tenure</i>	Average number of years directors served on the board.
<i>Board Female</i>	Proportion of female directors to total directors on the board
<i>Social Capital</i>	US county-level index of social capital which is available at Northeast Regional Center for Rural Development (NRCRD) for four (4) reference years (1997, 2005, 2009, and 2014). The index is the first principal component from a principal component analysis based on the following 4 variables: (1) the county-level voter turnout in the presidential elections, (2) the county-level response rate to the Census Bureau's census, (3) the associational density variable which represents the aggregate for religious organizations, civic and social associations, business associations, political organizations, professional organizations, labor organizations, bowling centers, physical fitness facilities, public golf courses, and sport clubs in each county, and (4) the number of non-profit organizations without including those with an international approach in each county. Using the same procedures of filling in missing data for CPRATIO in-between reference years, we estimate missing year data for in-between four (4) reference years (1997, 2005, 2009, and 2014) by either interpolating or backfilling.
<i>Religiosity</i>	Percentage of religious adherents in a county. Source: Association of Religion Data Archive (ARDA).

Notes

- ¹ The terms “sustainability”, “corporate social responsibility” (CSR), and “environmental, social, and governance” (ESG), have been used interchangeably in the literature to indicate a firm’s voluntary activities associated with its environmental, social, and governance impact and increase its positive contribution to society (Gillan et al. 2021; Khan et al. 2016). Consistent with recent literature, we use CSR and ESG interchangeably (Harjoto et al. 2022a; Tsang et al. 2023; Yahia et al. 2023).
- ² Pay duration measures the weighted average of the vesting periods of salary, bonus, restricted stocks and stock option (Gopalan et al. 2014; McGuire et al. 2019). In contrast, the CEO current wealth is calculated using the number of options multiplied by their corresponding spread (for in-the-money options) and the CEO prospective wealth is calculated based on number of options held $\times [(1.08^{\text{time}} \times \text{stock price}) - \text{stock price}]$, where 8% represents the average annual returns for the Dow Jones Industrial Index (DIA) that corresponds to our sample period (Martin et al. 2013, 2020).
- ³ We exclude firms with any of the six controversial business issues because firm with controversial business issues are inherently different (El Ghoul et al. 2011).
- ⁴ We conduct robustness tests by including corporate governance into our adjusted CSR score. The results including corporate governance dimension into our adjusted CSR score are consistent with the reported results.
- ⁵ We conduct a robustness test using raw CSR scores and our untabulated results are consistent with the reported results.
- ⁶ This positive and significant effect of CEO prospective wealth on CSR strengths provides further evidence beyond the McGuire et al. (2019) study which empirically finds that CEO compensation duration does not significantly affect CSR strengths. We believe that our finding is more consistent with the BAM since we derive our construct for CEO prospective wealth directly from the BAM instead of the construct from the traditional agency model (Gopalan et al. 2014).

References

- Al-Shaer, Habiba, Khaldoun Albitar, and Jia Liu. 2023. CEO power and CSR-linked compensation for corporate environmental responsibility: UK evidence. *Review of Quantitative Finance and Accounting* 60: 1025–63. [\[CrossRef\]](#)
- Artiach, Tracy, Darren Lee, David Nelson, and Julie Walker. 2010. The determinants of corporate sustainability performance. *Accounting & Finance* 50: 31–51.
- Benlemlih, Mohammed. 2019. Corporate social responsibility and dividend policy. *Research in International Business and Finance* 47: 114–38.
- Berkey, Brian. 2021. Sweatshops, structural injustice, and the wrong of exploitation: Why multinational corporations have positive duties to the global poor. *Journal of Business Ethics* 169: 43–56. [\[CrossRef\]](#)
- Bouslah, Kais, Lawrence Kryzanowski, and Bouchra M’zali. 2018. Social performance and firm risk: Impact of financial crisis. *Journal of Business Ethics* 149: 643–69. [\[CrossRef\]](#) [\[PubMed\]](#)
- Byron, Kris, and Corinne Post. 2016. Women on boards of directors and corporate social performance: A meta-analysis. *Corporate Governance: An International Review* 24: 428–42. [\[CrossRef\]](#)
- Cai, Ye, Hoje Jo, and Carrie Pan. 2011. Vice or virtue? The impact of corporate social responsibility on executive compensation. *Journal of Business Ethics* 104: 159–73. [\[CrossRef\]](#)
- Chatterji, Aaron. K., David I. Levine, and Michael W. Toffel. 2009. How well do social ratings actually measure corporate social responsibility? *Journal of Economics & Management Strategy* 18: 125–69.
- Cheung, Adrian. W., May Hu, and Jörg Schwiebert. 2016. Corporate social responsibility and dividend policy. *Accounting & Finance* 58: 787–816.
- Deckop, John R., Kimberly K. Merriman, and Shruti Gupta. 2006. The effects of CEO pay structure on corporate social performance. *Journal of Management* 3: 329–42. [\[CrossRef\]](#)
- Deng, Xin, Jun-Koo Kang, and Buen S. Low. 2013. Corporate social responsibility and stakeholder value maximization: Evidence from mergers. *Journal of Financial Economics* 110: 87–109. [\[CrossRef\]](#)
- DesJardine, Mark, and Wei Shi. 2021. How temporal focus shapes the influence of executive compensation on risk taking. *Academy of Management Journal* 64: 265–92. [\[CrossRef\]](#)
- Devers, Cynthia E., Gerry McNamara, Robert M. Wiseman, and Mathias Arrfelt. 2008. Moving closer to the action: Examining compensation design effects on firm risk. *Organization Science* 19: 548–66. [\[CrossRef\]](#)
- Di Giuli, Alberta, and Leonard Kostovetsky. 2014. Are red or blue companies more likely to go green? Politics and corporate social responsibility. *Journal of Financial Economics* 111: 158–80. [\[CrossRef\]](#)
- El Ghoul, Sadok, Omrane Guedhami, Chuck C. Y. Kwok, and Dev Mishra. 2011. Does corporate social responsibility affect the cost of capital? *Journal of Banking & Finance* 35: 2388–406.
- Endrikat, Jan, Charl De Villiers, Thomas W. Guenther, and Edeltraud M. Guenther. 2021. Board characteristics and corporate social responsibility: A meta-analytic investigation. *Business & Society* 60: 2099–135.
- Fama, Eugene F., and Michael C. Jensen. 1983. Separation of ownership and control. *Journal of Law and Economics* 26: 301–25. [\[CrossRef\]](#)
- Flammer, Caroline. 2018. Competing for government procurement contracts: The role of corporate social responsibility. *Strategic Management Journal* 39: 1299–324. [\[CrossRef\]](#)

- Flammer, Caroline, Bryan Hong, and Dylan B. Minor. 2019. Corporate governance and the rise of integrating corporate social responsibility criteria in executive compensation: Effectiveness and implications for firm outcomes. *Strategic Management Journal* 40: 1097–122. [\[CrossRef\]](#)
- Freeman, Robert E., Jeffrey S. Harrison, and Andrew C. Wicks. 2007. *Managing for Stakeholders: Survival, Reputation, and Success*. New Haven: Yale University Press.
- Frye, Mellisa B., Edward Nelling, and Elizabeth Webb. 2006. Executive compensation in socially responsible firms. *Corporate Governance: An International Review* 14: 446–55. [\[CrossRef\]](#)
- Gillan, Stuart, Andrew Koch, and Laura T. Starks. 2021. Firms and social responsibility: A review of ESG and CSR research in corporate finance. *Journal of Corporate Finance* 66: 101889. [\[CrossRef\]](#)
- Godfrey, Paul. 2005. The relationship between corporate philanthropy and shareholder wealth: A risk management perspective. *Academy of Management Review* 30: 777–98. [\[CrossRef\]](#)
- Godfrey, Paul, Craig B. Merrill, and Jared M. Hansen. 2009. The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. *Strategic Management Journal* 30: 425–45. [\[CrossRef\]](#)
- Gopalan, Radhakrishnan, Todd Milbourn, Fenghua Song, and Anjan V. Thakor. 2014. Duration of executive compensation. *Journal of Finance* 69: 2777–817. [\[CrossRef\]](#)
- Harjoto, Maretno, and Fabrizio Rossi. 2019. Religiosity, female directors, and corporate social responsibility for Italian listed firms. *Journal of Business Research* 95: 338–46. [\[CrossRef\]](#)
- Harjoto, Maretno, Andreas G. F. Hoepner, and Marcus A. Nilsson. 2022a. Bondholders' returns and stakeholders' interests. *Review of Quantitative Finance & Accounting* 59: 1271–301.
- Harjoto, Maretno, Andreas G. F. Hoepner, and Qian Li. 2022b. A stakeholder resource-based view of corporate social irresponsibility: Evidence from China. *Journal of Business Research* 144: 830–43. [\[CrossRef\]](#)
- Harjoto, Maretno, Indrarini Laksmana, and Robert Lee. 2015. Board diversity and corporate social responsibility. *Journal of Business Ethics* 132: 641–60. [\[CrossRef\]](#)
- Hill, Charles W., and Thomas M. Jones. 1992. Stakeholder-agency theory. *Journal of Management Studies* 29: 131–54. [\[CrossRef\]](#)
- Hsieh, Nien-hê. 2017. Corporate Moral Agency, Positive Duties, and Purpose. In *The Moral Responsibility of Firms*. Edited by Eric Orts and N. Craig Smith. Oxford: Oxford University Press.
- Jain, Tanusree, Rashid Zaman, and Maretno Harjoto. 2023. Behavioral agency model and corporate social irresponsibility: Uncovering the implication of fairness in CEO compensation. *Journal of Management*. forthcoming. [\[CrossRef\]](#)
- Jensen, Michael C., and Kevin J. Murphy. 1990. Performance pay and top management incentives. *Journal of Political Economy* 98: 225–64. [\[CrossRef\]](#)
- Jensen, Michael C., and William H. Meckling. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3: 305–60. [\[CrossRef\]](#)
- Jha, Anand, and James Cox. 2015. Corporate social responsibility and social capital. *Journal of Banking and Finance* 60: 252–70. [\[CrossRef\]](#)
- Jia, Yonghong, Xinghua Gao, and Scott Julian. 2020. Do firms use corporate social responsibility to insure against stock price risk? Evidence from a natural experiment. *Strategic Management Journal* 42: 290–307. [\[CrossRef\]](#)
- Jo, Hoje, and Maretno Harjoto. 2012. The causal effect of corporate governance on corporate social responsibility. *Journal of Business Ethics* 106: 53–72. [\[CrossRef\]](#)
- Kahneman, Daniel, and Amos Tversky. 1979. Prospect theory: An analysis of decision under risk. *Econometrica* 47: 263–91. [\[CrossRef\]](#)
- Khan, Mozaffar, George Serafeim, and Aaron Yoon. 2016. Corporate sustainability: First evidence on materiality. *The Accounting Review* 91: 1697–724. [\[CrossRef\]](#)
- Kim, Yongtae, Myung S. Park, and Benson Wier. 2012. Is earnings quality associated with corporate social responsibility? *The Accounting Review* 87: 761–96. [\[CrossRef\]](#)
- Lichtenberg, Judith. 2010. Negative duties, positive duties, and the "New Harms". *Ethics* 120: 557–78. [\[CrossRef\]](#)
- Lins, Karl V., Henri Servaes, and Ane Tamayo. 2017. Social capital, trust, and firm performance: The value of corporate social responsibility during the financial crisis. *Journal of Finance* 72: 1785–824. [\[CrossRef\]](#)
- Lu, Hao, Won-Yong Oh, Anne Kleffner, and Young K. Chang. 2021. How do investors value corporate social responsibility? Market valuation and the firm specific contexts. *Journal of Business Research* 125: 14–25. [\[CrossRef\]](#)
- Mahoney, Lois S., and Linda Thorne. 2006. An examination of the structure of executive compensation and corporate social responsibility: A Canadian investigation. *Journal of Business Ethics* 69: 149–62. [\[CrossRef\]](#)
- Mahoney, Lois S., and Linda Thorne. 2005. Corporate social responsibility and long-term compensation: Evidence from Canada. *Journal of Business Ethics* 57: 241–53. [\[CrossRef\]](#)
- Martin, Geoffrey P., Luis R. Gomez-Mejia, and Robert M. Wiseman. 2013. Executive stock options as mixed gambles: Revisiting the behavioral agency model. *Academy of Management Journal* 56: 451–72. [\[CrossRef\]](#)
- Martin, Geoffrey P., Robert M. Wiseman, and Luis R. Gomez-Mejia. 2020. The ethical dimension of equity incentives: A behavioral agency examination of executive compensation and pension funding. *Journal of Business Ethics* 166: 595–610. [\[CrossRef\]](#)
- Mattingly, James E., and Shawn Berman. 2006. Measurement of corporate social action: Discovering taxonomy in the Kinder Lydenburg Domini ratings data. *Business & Society* 45: 20–46.
- McCarthy, Scott, Barry Oliver, and Sizhe Song. 2017. Corporate social responsibility and CEO confidence. *Journal of Banking & Finance* 75: 280–91.

- McGuire, Jean, Jana Oehmichen, Michael Woff, and Roman Hilgers. 2019. Do contracts make them care? The impact of CEO compensation design on corporate social performance. *Journal of Business Ethics* 157: 375–90. [CrossRef]
- McGuire, Jean, Sandra Dow, and Kamal Argheyd. 2003. CEO incentives and corporate social performance. *Journal of Business Ethics* 45: 341–59. [CrossRef]
- McGuire, Sean T., Nathan J. Newton, Thomas C. Omer, and Nathan Y. Sharp. 2012. Does Local Religiosity Impact Corporate Social Responsibility? Working Paper. Available online: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1926387 (accessed on 28 February 2023).
- NAVEX. 2022. ESG Survey: Growing Environmental Social and Governance (ESG) Commitment in Europe and the United States. Available online: <https://www.navex.com/en-us/company/press-room/esg-global-survey-validates-that-esg-is-a-growing-priority-for-businesses/> (accessed on 15 June 2023).
- Oikonomou, Ioannis, Chris Brooks, and Stephen Pavelin. 2012. The impact of corporate social performance on financial risk and utility: A longitudinal analysis. *Financial Management* 41: 483–515. [CrossRef]
- Pepper, Alexander, and Julie Gore. 2015. Behavioral agency theory: New foundations for theorizing about executive compensation. *Journal of Management* 41: 1045–68. [CrossRef]
- Petersen, Mitchell. 2009. Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies* 22: 435–80. [CrossRef]
- Rao, Kathyayini, and Carol Tilt. 2016. Board composition and corporate social responsibility: The role of diversity, gender, strategy and decision making. *Journal of Business Ethics* 138: 327–47. [CrossRef]
- Scott, W. Richard, and John W. Meyer. 1983. The organization of societal sectors. In *Organizational Environments: Ritual and Rationality*. Edited by John W. Meyer and W. Richard Scott. Beverly Hills: Sage, pp. 129–53.
- Shaukat, Amama, Yan Qiu, and Grzegorz Trojanowski. 2016. Board attributes, corporate social responsibility strategy, and corporate environmental and social performance. *Journal of Business Ethics* 135: 569–85. [CrossRef]
- Shiu, Yung-Ming, and Shou-Lin Yang. 2017. Does engagement in corporate social responsibility provide strategic insurance-like effects? *Strategic Management Journal* 38: 455–70. [CrossRef]
- Shleifer, Andrei, and Robert W. Vishny. 1997. A survey of corporate governance. *Journal of Finance* 52: 737–83. [CrossRef]
- Stäbler, Samuel, and Marc Fischer. 2020. When does corporate social irresponsibility become news? Evidence from more than 1000 brand transgression across five countries. *Journal of Marketing* 84: 46–67. [CrossRef]
- Tsang, Albert, Tracie Frost, and Huijuan Cao. 2023. Environmental, Social, and Governance (ESG) disclosure: A literature review. *British Accounting Review* 55: 101149. [CrossRef]
- Tversky, Amos, and Daniel Kahneman. 1992. Advances in prospect theory: Cumulative representation of uncertainty. *Journal of Risk and Uncertainty* 5: 297–323. [CrossRef]
- Wettstein, Florian. 2010. For better or for worse: Corporate responsibility beyond “Do No Harm”. *Business Ethics Quarterly* 20: 275–83. [CrossRef]
- Wiseman, Robert M., and Luis R. Gomez-Mejia. 1998. A behavioral agency model of managerial risk taking. *Academic Management Review* 23: 133–53. [CrossRef]
- Wu, Jianfeng, and Rungting Tu. 2007. CEO stock option pay and R&D spending: A behavioral agency explanation. *Journal of Business Research* 60: 842–92.
- Yahia, Nadia B., Amna Chalwati, Dorra Hmaied, Abdul M. Khizer, and Samir Trabelsi. 2023. Do foreign institutions avoid investing in poorly CSR-performing firms? *Journal of Banking and Finance* 157: 107029. [CrossRef]
- Zolotoy, Leon, Don O’Sullivan, and Yangyang Chen. 2019. Local religious norms, corporate social responsibility, and firm value. *Journal of Banking and Finance* 100: 218–33. [CrossRef]
- Zolotoy, Leon, Don O’Sullivan, Geoffrey P. Martin, and Robert M. Wiseman. 2021. Stakeholder agency relationships: CEO stock options and corporate tax avoidance. *Journal of Management Studies* 58: 782–814. [CrossRef]

Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.