

The Impact of CEO Pay Duration on Corporate LGBTQ Inclusiveness

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Abstract: Many stakeholders now consider diversity and inclusion efforts as an ethical approach for businesses and society. This paper examines the effect of the duration of CEO compensation packages on firms' Corporate Equality Index (CEI) ratings, a measure of corporate diversity and inclusion policies for the lesbian, gay, bisexual, transgender, and queer (LGBTQ) community. We find that CEO pay duration is significantly and positively related to CEI – compensation with a longer duration increases firm's likelihood to embrace diversity and inclusion policies. The impact of CEO pay duration on CEI is more pronounced when the managers are younger, corporate governance is weaker, and various firm risks are higher. Further, diversity and inclusion is positively and significantly associated with higher long-term corporate value and accounting performance. Robustness tests indicate that endogenous factors are unlikely to drive our conclusions or inferences. Overall, our findings provide evidence that CEO long-termism from longer pay duration in compensation packages results in better social diversity and financial outcomes for companies.

Keywords: CEO compensation, CEO pay duration, diversity and inclusiveness, LGBTQ, Corporate value

1. Introduction

Firm characteristics and actions that contribute to maximizing shareholder value have long been studied in academic business research. In the last several decades, interest has increased in factors that lead to greater corporate social performance. It has become a focus of firms in Europe (e.g., Capron & Gray, 2000; Cahan et al., 2016) and in the United States (e.g., Maas, 2018). In this paper, we study an aspect of these important social activities, LGBTQ inclusiveness, through the lens of incentive packages for corporate executives.

Prior research has examined the impact of different aspects of CEO compensation packages on corporate policies, but few studies have specifically examined their impact on LGBTQ inclusiveness. Specifically, in this paper we focus on the impact of CEO long-termism, measured by the mix of short-term and long-term compensation mechanisms in CEO employment contracts, CEO pay duration, on firms' LGBTQ inclusiveness, one specific social performance measure, the Corporate Equality Index (CEI). We also analyze whether CEO pay duration and LGBTQ inclusiveness improve shareholder value.

The impact of CEO compensation packages has been addressed from both agency theory and stakeholder theory perspectives. CEOs' long-termism is driven not by equity-based compensation per se, but by the weighting of compensation towards short-term stock prices as opposed to long-term value (Stein, 1988, 1989). A novel and comprehensive measure of long-termism in CEO incentives, namely CEO incentive horizons, has been introduced in the literature (Gopalan et al., 2014). Studies have revealed significant associations between this measure and various corporate decisions (Edmans et al., 2017; Kolasinski & Yang, 2018; Edmans et al., 2022).

Freeman (1984) identifies stakeholders as any individual or group that can be affected by, or affect, an organization's purpose and performance. Thus, stakeholder theory holds that

stakeholders and their interests need to be represented within a company because stakeholders, including employees, customers, and suppliers, contribute strongly to its performance and ability to generate wealth in the future (Post et al., 2002; Choi & Wang, 2009; Clacher et al., 2011; Brower & Mahajan, 2013). In what is sometimes referred to as a contrarian view, Milton Friedman (1970) famously claimed that ‘the social responsibility of business is to increase its profits’, which implies that corporations should refrain from social expenditures and policies. However, Friedman also argued that the only way to increase profits is by treating stakeholders seriously. Executives are delegated the power to allocate resources and make investment decisions, including those to improve relationships with stakeholders. According to Friedman’s advice, firms can engage in social activities if they are able to quantify the impact of social investments on profits. On the other hand, agency theory suggests that executives can engage in social investment activities to extract private benefits at the expense of shareholders (Masulis and Reza, 2015).

With this theoretical basis, we examine the impact of CEO pay duration on the social issue of LGBTQ inclusion efforts. On the one hand, studies advocating diversity initiatives argue from the instrumental perspective that stakeholders, especially employees, may reward social expenditures; hence, investing in cultural inclusion enhances profitability and firm value (e.g., Edmans, 2020). On the other hand, studies opposing corporate social engagement, in general, argue from the agency cost perspective that these activities are merely managerial self-interested behavior at the expense of shareholders (e.g., Masulis & Reza, 2015; Cespa & Cestone, 2017). Although noting that LGBTQ inclusiveness policies provide long-term benefits, some scholars and practitioners suggest that LGBTQ inclusiveness policies can have financial costs and other adoption deterrents such as negative publicity campaigns and boycotts (Gunther, 2006; Cook & Glass, 2016).

Given that LGBTQ inclusiveness policies may only produce increased shareholder value in the long-term, CEO pay duration provides a context for examining how executive incentives can impact social inclusiveness policies. Therefore, it is essential to study the impact of CEO compensation incentives on LGBTQ inclusiveness policies, and the impact of both CEO compensation and LGBTQ inclusiveness policies on firms' long-term performance. This paper aims to fill this void.

Using a sample of 2,294 firm-year observations covering a period that runs from 2010 through 2018, we find that firms with longer CEO pay duration are associated with more extensive LGBTQ inclusion policies, which is consistent with the instrumental hypothesis. We further test whether the positive relationship between the measure of CEO long-termism and LGBTQ policies is motivated by enhancing shareholder value, or merely another form of managerial self-serving by investigating the net effects of these inclusion measures on firm future value. We find strong evidence that LGBTQ inclusiveness investments and managers' long-term incentives enhance firm value. Consequently, we find that linking managerial equity compensation to future firm performance gives managers an incentive to jointly maximize the financial and social performance of the firm.

We further explore the mechanisms through which CEO pay duration influences LGBTQ engagement. First, we show that the impact of pay duration on LGBTQ is more salient when executives are younger, suggesting that the incentives are more impactful when executives pay duration is aligned with their career horizons. Second, pay duration is a more effective governance mechanism in firms with worse corporate governance structures. Third, we find that the influence of pay duration on LGBTQ inclusiveness is more salient in firms with higher environmental risk

and other risks, which confirms the mechanism that the need for reputation insurance drives LGBTQ inclusion.

Our results are not immune to endogeneity concerns. Firm-level unobserved variables and time-variant unobserved variables, such as the nature of investment opportunities, could be associated with both compensation design and LGBTQ engagement and hence drive our main results. To alleviate such endogeneity concerns, we first use firm-level and executive-level fixed effects to control for unobserved variations at the firm level and at the executive level. After controlling for firm-level and executive-level fixed effects, results indicate that longer CEO pay duration is associated with higher levels of LGBTQ inclusion.

Second, inspired by Edmans, Fang, and Lewellen (2017), we use the estimated value of option and stock grants scheduled to vest in a given year as an alternative measure of a CEO's incentive horizon. This measure directly captures the short-termism perspective caused by the upcoming vesting. It is unlikely to be affected by current LGBTQ engagement because a firm's executive compensation vesting schedules are normally set by the board several years prior, and is unlikely related to a board's anticipation of inclusiveness needs in a specific future year. We find that the value of grants scheduled to vest within one year, which indicates CEO short-termism, is associated with lower LGBTQ inclusiveness engagement.

Our paper contributes to the literature on the impact of CEO incentive horizons and also the literature on company diversity efforts. First, we confirm prior literature indicating that CEO long-term compensation incentives are associated with higher shareholder value. Our results are also consistent with existing studies that suggest executives engage in more beneficial firm policies when CEOs have to wait longer to receive their compensation. Second, although related studies have analyzed the impacts of the duration of executive compensation on corporate investment and

financial decisions, few studies focus on its impact on corporate social issues. We adopt LGBTQ inclusiveness as a relatively new corporate social topic and study its association with CEO incentive horizons. Our evidence shows that longer CEO incentive horizons tend to increase the long-term social investment necessary to improve LGBTQ inclusiveness policies. Third, we contribute to the ongoing debate over whether and when inclusive engagement is consistent with maximizing shareholder value. Our findings suggest that investing in the LGBTQ community, a stakeholder group that has historically faced prejudice and discrimination, increases shareholder value. Our evidence supports the argument from Friedman (1970) that, with proper incentives, maximizing shareholder value can lead corporations to act in socially responsible ways. This is also consistent with the ‘growing the pie’ notion in the modern business literature – that firms can grow the ‘pie’ that benefits both stakeholders and shareholders when they adopt social responsibility as a strategy (Edmans, 2020).

In the next section, we discuss supporting theory and related literature and develop our hypotheses. We discuss our data and research methods in Section 3. In the subsequent Sections 4 and 5, we explain and discuss test results. We conclude in Section 6.

2. Literature Review and Hypothesis Development

2.1 Executive incentives and pay duration

Contractually, owners compensate managers to act in a way that maximizes the long-term value of the owner’s investment in the firm. However, organizational theories are heavily influenced by agency theory’s depiction of managers as agents with their own interests, divergent from those of the organization (Jensen & Meckling, 1976; Indjejikian, 1999). Agency theory presents a skeptical model of managers as generally self-serving and individualistic such that

shareholder principals cannot trust managers as agents. Particularly, managers may make decisions that improve reported short-term results that will increase their compensation, but may be detrimental to the company in the long-term. This managerial myopia directly contrasts with long-termism, and can be a first-order problem occurring in many firms (Edmans, 2009).

Existing studies propose that executive pay with longer time-horizon features improves long-term firm performance (e.g., Bebchuk & Fried, 2010; Bhagat & Romano, 2010). In particular, emerging literature has built theoretical frameworks for optimal compensation duration. The general view is that equity awards with long vesting periods alleviate managerial short-termism (e.g., Bolton et al., 2006; Manso, 2011; Peng & Roell, 2014; Edmans et al., 2012).

This view is supported by empirical evidence from recent research. For example, Gopalan et al. (2014) develop a pay duration measure and find that firms that provide longer pay duration to their CEOs have lower earnings-increasing accruals. Baranchuk et al. (2014) empirically show that CEOs who are given incentive compensation with longer vesting periods adopt more innovative strategies. Those results support the theoretical prediction of a positive association of longer managerial incentive schemes with innovation (Manso, 2011), which is an important form of corporate long-run investment (Lerner et al., 2011). Also, Huang et al. (2021) find that firms grant longer-duration compensation contracts to their executives in the presence of greater technology spillovers.

Recent studies have also examined the links between executive pay duration managerial incentives and other management decisions. For example, Fu et al. (2022) find that CEO pay duration has a negative association with corporate debt maturity, suggesting that incentive horizons also impact firms' financial policies. Regier (2023) finds that longer executive compensation duration leads to less abnormal investment, increasing investment efficiency. Cadman and Sunder

(2014) document that in the initial public offering setting, short-horizon investors such as venture capitalists provide managers with short-term incentives to maximize the current stock price. They also show a positive relation between CEO incentive horizons and long-run abnormal stock performance. McGuire et al. (2019) investigate how corporate social performance is impacted by CEO compensation characteristics and find that longer CEO compensation duration reduces poor social performance.

Some research provides evidence of the negative effects of executive compensation packages with more short-term incentives. Ladika and Sautner (2020) exploit the staggered adaptation of an accounting rule change to find that CEOs with accelerated option vesting cut investment to boost short-term performance. Edmans et al. (2017) use the number of equities scheduled to vest in a given quarter to identify the CEO's short-term compensation incentives and find that CEOs with more short-term incentives reduce the growth rates of research and development expense and capital expenditures. Likewise, Aktas et al. (2021) show that firms moderate both R&D and capital expenditures when CEOs have shorter career horizons. Also, Schroth (2018) finds that shorter-term managerial compensation characteristics are associated with more frequent unethical manager reporting manipulation. Huang (2012) finds that shorter CEO pay duration is associated with more stock repurchases following good stock price performance.

2.2 Diversity and inclusiveness and corporate theory

Traditional governance prescriptions rooted in agency theory may be helpful in aligning the motivations and focus of CEOs to yield behaviors more consistent with stakeholder theory. Thus, theoretical support exists for examining the impact of CEO pay duration on decisions related to companies' LGBTQ-supportive policies. A firm's diversity efforts may require a sustained commitment over time to produce favorable returns, like other long-term investments. Executives

can view corporate social responsibility and diversity efforts as long-term investment decisions to maximize shareholder value. In this paper, we study how managerial myopia could impact firms' social performance regarding lesbian, gay, bisexual, transgender, and queer (LGBTQ) group inclusiveness. We believe this present study fills a gap in the literature by exploring how managerial myopia, or long-termism, impacts firms' LGBTQ policies and inclusion efforts.

LGBTQ policies represent pro-social policies that support stakeholders other than principals directly. Implementing such policies is behavior consistent with stakeholder theory's focus on management having a sense of responsibility to multiple stakeholders. Foster et al. (2021) note that diversity efforts may not necessarily generate excess benefits in the short-term, but their evidence indicates that a long-term commitment to diversity efforts and policies will generate value over time. Consequently, top management employment agreements that contain compensation incentives based on longer term corporate performance likewise provide more incentives to engage in corporate diversity and inclusion policies.

Growth in the LGBTQ community, particularly among younger people, has made their advocates more important stakeholders as employees and potential customers. A Gallup poll released in early 2022 reported that nearly 21% of Generation Z (respondents born from 1997 to 2003) and 10.5% of Millennials (respondents born from 1981 to 1996) self-identify as LGBTQ (Jones, 2022). Stakeholders both within and outside of organizations attempt to influence equitable employment practices. LGBTQ employees and their allies are an example of an internal stakeholder group (Bidwell et al., 2013), while the Human Rights Campaign (HRC), a national LGBTQ civil rights organization is an example of an external stakeholder group (Hossain et al. 2020).

The last several decades have witnessed a significant increase in attention to cultural inclusiveness for LGBTQ groups, and business scholars have explored the mechanisms and motivation of corporations' involvement in promoting LGBTQ inclusiveness in their companies. Following the theories on corporate social responsibility, LGBTQ inclusiveness might be somewhat explained by agency theory and stakeholder theory. Agency theory depicts managers as agents with their own divergent—from the organization's—interests (Jensen & Meckling, 1976; Eisenhardt, 1989; Davis et al., 2018). Specifically, agency theory assumes a model of people where motivation is largely self-serving and individualistic so principals cannot trust agents. It is possible that these LGBTQ supportive activities are merely managerial self-interested behavior at the expense of shareholders (e.g., Masulis & Reza, 2015; Cespa & Cestone, 2017). For instance, CEOs may engage in LGBTQ activities for their own personal interests, such as enhancing their personal images or pursuing their own social values, which may be conflicted with the best interests of the company and its shareholders.

Stakeholder theory is another refinement of Corporate Social Responsibility (CSR) theory. Early construction of CSR theory indicates that business entities should pursue policies and actions that support the values and objectives of society, or the public good (Bowen, 1953). According to Pichler et al. (2018), this concept was developed into a framework of corporate social performance as evidenced by Preston (1982) and Carroll (1979). To support the values and objectives of society, managers must create and maintain cooperative relationships with stakeholders. Stakeholder theory builds on this concept by stipulating the importance of including and representing stakeholders and their interests within the firm. In the LGBTQ setting, these inclusiveness investments can result in greater support from stakeholders, including customers, suppliers, and

employees, hence contributing to the economic success of an organization (Baker & Anderson, 2010).

2.3 The confluence of corporate diversity performance and executive incentives

We conjecture that the amount and mix of short-term and long-term compensation provide incentives to CEO decision-making, including LGBTQ inclusiveness policies. LGBTQ inclusive policies are aligned with long-term organizational goals because of the documented positive effect they have on performance and value (e.g., Wang & Schwarz, 2010; Pichler et al., 2018; Hossain et al., 2020). However, internal governance mechanisms may be needed to ensure management prioritizes such policies (Campbell-Verduyn & Hütten, 2019; Achyldurdyeva et al., 2021; Batson, 2022). Consequently, this paper focuses on how one governance mechanism might influence managers' priorities.

Longer pay duration motivates long-term value creation and alleviates managerial myopia, according to Gopalan et al. (2014) and Edmans et al. (2017). In a non-financial reporting context, Deckop et al. (2006) find that a short-term pay focus leads to worse corporate social performance. More recently, McGuire et al. (2019) investigated how corporate social performance is impacted by CEO compensation characteristics and found that longer CEO compensation duration reduces poor social performance. Only a handful of papers have explored the effects of compensation structures on corporate inclusiveness activities.

As noted by Carroll (1999), what society views as socially responsible behavior changes over time, and corporate policies may change to reflect changes in societal norms. Nondiscrimination and embracing diversity have increasingly become social norms. Prior research indicates that corporations benefit from a diverse workforce by bringing different perspectives to problem-solving (for example, see Rao & Tilt, 2016; Wiersema & Bantel, 1992). As part of the

nondiscrimination and diversity movement, social acceptance of LGBTQ people, and attitudes toward their treatment, have changed dramatically over the last 30 years. This change was punctuated by the U.S. Supreme Court (2015), *Obergefell v. Hodges* decision in 2015 which legalized same-sex marriage in the United States. However, Foster et al. (2020) found evidence that the impact of LGBTQ-supportive policies and actions of companies were associated with higher market values even before the *Obergefell* decision. Consequently, the LGBTQ community and advocacy groups like the Human Rights Campaign (HRC) have become important stakeholders for corporations.

CEOs who have longer pay duration should be more likely to undertake value-enhancing social inclusiveness activities and less likely to undertake value-reducing social inclusiveness activities (Gopalan et al., 2014; Masulis & Reza, 2015; Edmans et al., 2017). In this paper, we study whether pay duration will impact firm diversity efforts supporting the LGBTQ community.

2.4 Hypotheses

Linking executive compensation to long-term firm performance by vesting schedules for stock grants and options reduces managerial short-termism and provides a good setting to analyze the relationship between pay duration and corporate diversity and inclusiveness policies. Longer pay duration motivates long-term value creation and alleviates managerial myopia, according to Gopalan et al. (2014) and Edmans et al. (2022). Consequently, CEOs who have longer pay duration should be more likely to act with a wider stakeholder view and undertake value-enhancing social inclusiveness activities (Gopalan et al., 2014; Masulis & Reza, 2015). As mentioned above, adopting LGBTQ-supportive policies can be viewed as a long-term investment producing future value.

Equity-based compensation itself does not drive CEO long-termism. The mix of compensation dependent on short-term stock prices as opposed to long-term value can incentivize CEO behavior and decisions (Stein 1988, 1989). Gopalan et al. (2014) introduced a comprehensive measure, CEO incentive horizons, to gauge the extent of long-termism in CEO incentives. Studies have revealed significant associations between this measure and various corporate decisions (Edmans et al., 2017; Kolasinski & Yang, 2018; Edmans et al., 2022). The general view is that equity awards with long vesting periods alleviate managerial short-termism (e.g., Bolton et al., 2006; Manso, 2011; Lerner et al., 2011; Edmans et al., 2020). However, in a recent study, Flugum and Southern (2021) found that some CEOs refer to stakeholder-based performance only when not meeting earnings expectations and other objective financial measures. Thus, LGBTQ inclusion efforts may merely reflect agency issues or a window-dressing attempt in response to recent poor performance.

To test our hypotheses, we follow Gopalan et al. (2014) and use CEO pay duration as a proxy for CEO long-termism/myopia. CEOs with longer pay duration need to wait longer before they can exercise equity-based compensation, so they are incentivized to conduct policies to improve future performance. If LGBTQ activities can increase stakeholder support and improve long-term firm value, LGBTQ inclusion efforts are viewed more as a positive long-term investment by CEO with longer pay duration. In contrast, according to agency theory, if LGBTQ activities are due to managerial self-interest, longer pay duration can deter such efforts. Based on overall previous research related to LGBTQ inclusion, we present the following hypothesis.

Hypothesis 1a: If shareholder theory is the dominant theory for corporate LGBTQ activities, CEO pay duration is positively related to the Human Rights Campaign's CEI.

Hypothesis 1b: if agency theory is the dominant theory for corporate LGBTQ activities, CEO pay duration is negatively related to the Human Rights Campaign's CEI.

A fundamental question currently being intensively debated in both academia and practice is whether cultural inclusiveness engagement is in line with shareholder value maximization. Although research evidence indicates that LGBTQ inclusiveness policies provide long-term benefits, both scholars and practitioners note that LGBTQ inclusiveness policies can have financial costs and other adoption deterrents such as negative publicity campaigns and boycotts (Gunther 2006; Cook & Glass 2016). Based on prior evidence, we predict and hypothesize a positive relationship between corporations' LGBTQ efforts, measured by the Human Rights Campaign's (2023) Corporate Equality Index (CEI), and long-term corporate value as measured by Tobin's q.

Hypothesis 2: Corporate Equality Index (CEI) is positively related to shareholder value as measured by Tobin's q.

Existing studies propose that executive pay with longer time-horizon features improves long-term firm performance (e.g., Bebchuk & Fried, 2010; Bhagat & Romano, 2010). In particular, emerging literature has built theoretical frameworks for optimal compensation duration. Consequently, we also predict and hypothesize a positive relationship between executives' compensation mix, or pay duration, and long-term corporate value as measured by Tobin's q.

Hypothesis 3: CEO pay duration is positively related to shareholder value as measured by Tobin's q.

3. Methodology

3.1 Sample construction and main dependent and independent variables

Our sample starts with all Compustat observations from the fiscal years 2010 to 2018. We begin our sample year with 2010 to avoid data from the Great Recession period of 2008 – 2009 (Manikas & Patel, 2018) and to include years for which the Human Rights Campaign (HRC)

LGBTQ diversity measure is available for many publicly-traded companies. The World Health Organization declared the COVID-19 virus a global pandemic on March 11, 2020 (Xia et al., 2020). Consequently, firm performance and valuations for 2020, and perhaps 2021, were abnormally affected by the pandemic. Likewise, much social upheaval occurred in 2020 following the deaths of George Floyd and Breonna Taylor in police actions in the USA. Consequently, 2020 and shortly beyond may constitute a substantially different environment that could confound the impact of CEO pay duration on all diversity and inclusion efforts. Our measures of firm future performance include one-year and two-year forward variables. Thus, our main analysis sample includes data through 2018 to allow the calculation of future performance in 2019 and 2020.

We use the HRC Corporate Equality Index (CEI) as the primary dependent variable and a proxy for LGBTQ equality efforts and policies in our analyses. Employees of the HRC, a civil rights organization, evaluate many organizations' publicly stated company policies and benefits related to the LGBTQ community. Companies' CEI ratings are based on points awarded for specific criteria that include equitable employee benefits, educational opportunities, nondiscrimination policies, organizations' use of accountability metrics, and organizations' public support for LGBTQ equality. To provide information on employers' LGBTQ diversity and inclusion policies and efforts, the HRC announces organizations' CEI ratings publicly to help potential employees, investors, and other stakeholders understand these firms' LGBTQ diversity efforts. Firms with the highest level of inclusivity are given a CEI score of 100, while a zero indicates the lowest level of support for the LGBTQ community.

Our independent variable of interest, CEO pay duration, is the weighted average duration of components of the CEO's annual compensation (salary, bonus, restricted stock, and stock options) as in Eq. (1) of Gopalan et al. (2014):

$$Pay\ duration = \frac{(Salary+Bonus) \times 0 + \sum_{i=1}^{n_s} Restricted\ stock_i \times t_i + \sum_{j=1}^{n_o} Option_j \times t_j}{Salary+Bonus + \sum_{i=1}^{n_s} Restricted\ stock_i + \sum_{j=1}^{n_o} Option_j} \quad (1)$$

Salary and *Bonus* are the dollar values of yearly salary and bonus which have zero duration. *Restricted stock_i* is the dollar value of the i^{th} equity of restricted stocks with vesting period t_i (in months), and *Option_j* is the dollar value of the j^{th} equity compensation of stock options with vesting period t_j (in months). In year t , an executive may be awarded multiple equity grants with various vesting periods, and n_s and n_o are the total numbers of such grants in stocks and options, respectively. Thus, the numerator is an overall deferred compensation amount, while the denominator is an overall current compensation value in dollars. The dollar value of equity awards is estimated at the end of the fiscal year.

CEO compensation variables are obtained from ISS Incentive Lab. This compensation database contains in-depth information from corporate reports and proxy statements about executive equity awards such as vesting schedules and their condition metrics for S&P 500 and S&P 400 (midcap) firms (e.g., Bettis et al., 2018). Among other control variables, firm characteristic information is obtained from Compustat. CEO age, gender, and executive team diversity are obtained from the Compustat Execucomp database while BoardEx was used to capture board size. Table 1 summarizes the steps taken to obtain our sample. We constructed the main sample that contains 2,295 firm-year observations. Sample size varies slightly in further analysis due to the requirements of additional variable availability.

[Insert Table about 1 here]

3.2 Statistical methods

To test our hypotheses, we use the model expressed in Equation 2 as the full model:

$$CEI_{it} = \alpha_1 + \alpha_2 payduration_{it} + \alpha_3 \ln CEO_delta_{it} + \alpha_4 \ln CEO_vega_{it} + \alpha_5 \log at_{it} +$$

$$\alpha_6 \text{lev}_{it} + \alpha_7 \text{CEOgender}_{it} + \alpha_8 \text{CEOage}_{it} + \alpha_9 \text{CEOdualbdchair}_{it} + \alpha_{10} \text{bdsiz}_{it} + \alpha_{11} \text{agediversity}_{it} + \alpha_{12} \text{genderdiversity}_{it} + \alpha_{13} \text{instituper}_{it} + \varepsilon_{it} \quad (2)$$

Because pay duration may be correlated with other dimensions of executive compensation, we include $\ln\text{CEO_delta}$ and $\ln\text{CEO_vega}$ to proxy for managerial risk-taking incentives that have been shown to affect corporate decisions. CEO_delta is the change in the dollar value of a CEO's stock and option holdings with respect to a 1% change in current stock prices. CEO_vega is the change in the dollar value of a CEO's stock and option holdings with respect to a 1% change in the annualized standard deviation of stock returns (Coles et al., 2006).

The resource-based view of corporate social activities suggests that larger companies spend more resources on social investments (McWilliams & Siegel, 2000). Thus, we include the natural logarithm of total assets at the end of the year to control for size. Corporate capital structure can also pose a constraint that discourages managers from spending corporate resources on social philanthropy (Krüger, 2015). Hence, Equation 2 also includes firm financial leverage as a control variable.

Social-contextual factors related to companies' governance structure and their CEOs, may impact long-term focus and pro-social views that underpin CEO decisions and compensation. Consequently, we control for other factors that could affect LGBTQ inclusion efforts and policies. For example, CEOs' gender and age may impact their decisions.

When societal career constraints are considered, women tend to exhibit higher levels of self-actualization compared to men (Hall & Hansen, 1997; Hogan & McWilliams, 1978). Krems et al. (2017) find that men have a fundamental motive of status-seeking in their self-actualizing whereas women report other-focused social motivations (e.g., affiliation) in their self-actualizing. From a corporate governance context, men are more likely to exhibit agentic [agency theory]

behavior patterns, whereas women tend to act more in line with communal behavior patterns (Zaccone & Pedrini, 2019). Consequently, females could be more likely to prioritize social stakeholders in corporate decision-making. Given this thread of research, we control for the relationship between CEO gender and corporations' LGBTQ efforts by including an indicator variable for CEO gender (CEO_gender), coded as 0 for men, and 1 for women.

Younger generations have been socialized into social media norms where identities and self-value are in part driven by social interactions (Bolton et al., 2013; Anderson et al., 2016; Dolot, 2018). Ng & Sears (2012) analyze survey results from CEOs and HR executives from 286 large Canadian organizations and conclude that CEO age impacts the implementation of companies' diversity policies. Similarly, younger generations are exposed to more heterogeneous groups during their formative years which influences how they are motivated (Bolten et al., 2013). Specifically, scholars note that younger generations that are just recently becoming top-level managers were raised with more parental involvement, higher exposure to fights for equal rights for LGBTQ people, and in a more socially-minded environment (Gabrielova & Buchko, 2021). In short, younger generations are intrinsically motivated to prioritize pro-social behaviors compared to older generations. Thus, CEO age (CEO_age) may impact commitment to LGBTQ diversity, pay duration, and firm value. In our main analysis, we include CEO_age as a continuous variable to control for CEO age.

Another corporate governance issue is whether the CEO is also chairman of the board of directors. The existing literature (Fama & Jensen, 1983; Jensen, 1993) suggests that CEO duality is a symbol of CEO entrenchment and subpar governance. However, a single person holding both the powerful positions of CEO and chairman of the board may have more influence on policies regarding diversity and inclusion. Consequently, we include an indicator variable,

CEOdualbdchair, to control for this characteristic: coded 0 when separate individuals hold those positions, and 1 when the CEO is also the Chairman of the Board.

Diversity and LGBTQ initiatives have attracted the attention of many scholars across various corporate governance perspectives. Some prior research has found higher productivity from firms with more top management team diversity (Luanglath et al., 2019). Li (2013) finds that more diverse top management teams are able to more effectively pursue multiple firm innovations. Prudêncio et al. (2021) studied Brazilian firms and found that gender diversity on the Board of Directors and higher average age of the TMT have a favorable effect on corporate social responsibility, while age diversity on the board has a negative influence on CSR. Further, Wu et al. (2011) investigated Chinese firms and showed that compensation disparity among the top management team negatively affects the firm's ability to achieve strategic change, but found no effect from age diversity in the top management team.

Stock ownership by institutional investors may also impact corporate behavior. If institutional investors are mainly interested in short-term or long-term results, then the percentage of stocks owned by institutional investors could impact companies' LGBTQ inclusion efforts. Also, institutional investors may have more influence on corporate policies, such as managerial compensation, than other investors and may use their influence to impact management's LGBTQ policies (Hartzell & Starks, 2003). Thus, we control for the percentage of shares owned by institutional investors. The detailed constructions of these control variables can be found in Appendix.

4. Results for CEI analyses

4.1 Summary statistics and correlations

Table 2 provides descriptive statistics on the CEI measure, CEO pay duration and other incentive measures, and control variables. All continuous variables are winsorized at the 1st and 99th percentiles. We document that, on average, firms' CEI score is 69.804 out of 100, while the median for CEI is 85. On average, CEOs have to wait for about 2 years to receive their incentives, as the mean (median) pay duration is 2.085 (2.193). CEO_delta and CEO_vega indicate that CEOs are well incentivized: a 1% stock price change impacts a CEO's wealth by about \$2.083 million on average, whereas a 1% change in stock volatility impacts a typical CEO's wealth by about \$62,861. We use the logarithm of these terms in regression analyses.

[Insert Table 2 here]

In Table 3 we present the Pearson correlation coefficients between CEI and other variables. In this table, correlation coefficients are shown in the rows with variable names and p-values are reported in parentheses in the following row. This table indicates that CEI is positively related to *payduration*.

[Insert Table 3 about here]

4.2 CEI analysis

Table 4 presents the results of regression analyses on the sample with CEI as the dependent variable. The columns in Table 4 present results for models controlling for industry and year fixed effects. For comparison purposes, Column 1 presents results for a base model including our independent variable of interest, *payduration*, and the other two variables included to control for incentives built into CEO compensation contracts, *lnCEO_delta* and *lnCEO_vega*. Model 2 includes all other control variables.

[Insert Table 4 about here]

The results indicate pay duration has a positive and significant impact on CEI in both models. Thus, we find evidence supporting Hypothesis 1a regarding inclusion efforts. Longer-term CEO compensation incentives are associated with higher CEI ratings, which suggests that in general, higher LGBTQ inclusiveness is associated with longer-term CEO perspectives. The impact on CEI is not trivial. For example, a one-standard-deviation increase in CEO pay duration (about 1.022) roughly leads to a two-point increase in CEI score, as seen in Column (2).

Other variables in the model control for other factors affecting CEI. *lnCEO_delta* and *lnCEO_vega* are also negative in both models, and both highly significant in Model 2. These results corroborate our findings on the positive effect of long-termism on firm social inclusion activities as they provide some evidence that CEO compensation packages that are more strongly related to current stock price are associated with lower CEI ratings. Also, these results indicate that CEO pay duration leads to higher investment in social inclusiveness activities even beyond the impact of current stock prices on executive compensation. Lastly, the findings indicate that the effects of vega and delta on CEI run in opposite directions relative to the effects of pay duration, also highlighting the importance of CEO pay duration as a new aspect to be incorporated into executive-incentive studies.

Column 2 in Table 4 reports results with control variables in the models. The size variable, *logat*, is positively and significantly related to CEI; as expected from the existing literature, firms with more resources are more able to invest in social activities. Leverage, *lev*, is negative and marginally significant in both models, indicating that constrained resources may limit diversity and inclusion efforts.

Several other control variables related to CEO characteristics - board of directors' size, top management team characteristics - show associations with CEI. CEO gender is positive and

significantly related to CEI, indicating women CEOs are associated with higher higher firm-level LGBTQ intensity. Also, CEO age is highly significant and negative in model 2, indicating that younger CEOs are associated with higher CEI ratings. In addition, CEO-Board chair duality is significantly and positively related to higher CEI ratings. We interpret this as perhaps the power of a single individual in both positions can champion the adoption of diversity efforts for a company more easily. Likewise, the board size variable is positive and significant in the two models, indicating that larger boards are associated with higher CEI ratings. Also, gender diversity in the top management team is significantly related to higher CEIs.

Results for Model 2 indicate that higher percentages of institutional investor ownership of company stock are associated with significantly lower CEIs. These results reflect the potential impact of powerful shareholder groups. Perhaps when a high percentage of a company is owned by institutional investors, managers feel more pressure to focus on short-term results and are less likely to invest in efforts necessary for a high CEI. This finding is generally consistent with the tenor of this paper, that myopia, regardless of whether it stems from managers or shareholders, has a negative effect on corporate social inclusiveness.

4.3 Further analysis for the impact of other variables and CEO pay duration on CEI

To further investigate the impact of other factors on the relationship between CEO pay duration and CEI, we conducted additional analyses. We repeatedly split the sample into two groups based on the medians of specific control variables included in the models. We then compare the statistical results of regression analysis with the two groups. The baseline tests in Table 4 suggest that CEO long-termism due to pay duration is a determinant of firm LGBTQ inclusiveness. We conjecture that the long-termism of CEO is also related to the age of CEO and other corporate leaders, as younger corporate leaders are less likely to be myopic with their longer perceived career

horizons. Using long-term incentives to executives could be more effective for younger executives, when these longer pay duration can be aligned with their longer career prospects.

[Insert Table 5 about here]

We first split the sample based on median CEO age in our sample, which is 60. Columns 1 and 2 present the regression results for the two groups, CEOs 60 years old or under, and CEOs over 60 years old, respectively. Results from those two regressions indicate that pay duration is significantly and positively related to CEI only for companies with relatively younger CEOs. Also, $\ln\text{CEO_delta}$ is only significant and negatively associated with CEI for executives older than 60.

Columns 3 and 4 present the regression results for two groups based on top management team age diversity (coefficient of variation less than or equal to the median of 0.096. Because top managers tend to be relatively older people, companies that also have relatively younger top managers would likely have higher age diversity. Results from those regressions again indicate that pay duration is significantly and positively related to CEI for companies with relatively higher top management team age diversity, but not significant for companies with relatively lower top management team age diversity. Taken together, Table 5 results also show a pattern that meets our expectation, which is that executive pay duration is a more effective incentive mechanism when matched with career horizons. For older executives, the effect of long-term incentives, which are intended to make them less myopic, might be limited.

We next partition our sample into different groups based on corporate governance measures and study the impact of CEO pay duration on CEI in each group. Prior literature shows that smaller boards and those without the same person serving as CEO and chair are associated with more effective governance (Berhe, 2023). Thus, we split our sample based on two methods: 1) the median of board size, and 2) whether the CEO is also the chairperson of the board. Columns

1 and 2 of Table 6 present the regression results for two groups based on the median board size (less than 11 members, greater than or equal to 11 members).

Results in Columns 3 and 4 report results when the sample is split by CEOdualbdchair indicating whether or not the CEO serves as the chairman of the board of directors. Pay duration's positive coefficient is significant only when the CEO serves dual roles, also typically associated with less effective governance. These interesting results suggest the role of governance in companies. Because incentive compensation is one corporate governance mechanism, longer pay duration appears to have more positive impact on firms with otherwise subpar governance mechanisms in place. It also suggests that longer CEO pay duration is an effective governance mechanism to make less-monitored CEOs to conduct activities that can benefit both societal communities and shareholders over the long-term.

[Insert Table 6 about here]

Lastly, recent studies suggest that corporate social engagement and performance have a special long-term implication that distinguishes them from other long-term investments. These social activities build social capital that fosters trust between a firm and its stakeholders, serving as reputation insurance against future negative events or shocks (Lins et al. 2017). Hence, from this stakeholder perspective, we expect that the impact of CEO pay duration on CEI should be more salient in firms with higher future risk. In these riskier firms, CEOs incentivized with longer holding horizons are more likely to experience crises during the time covered in their compensation package. So, they should have more incentive to engage in corporate inclusiveness activities that build social capital when their compensation is more closely tied to future stock performance.

Table 7 reports tests when we partition our sample into different groups based on two types of risk. Hassan et al. (2019) use computational linguistics to construct measures of various risks by individual U.S. firms, which are the shares of their quarterly earnings conference calls that they devote to these risks. For example, overall firm-level risk simply counts the frequency of mentions of synonyms for risk or uncertainty and is divided by the length of the transcript. For environment risk, it shows the portion of earnings conference calls related to the risks of agriculture, animals, clean air & water, environment & superfund, fuel, gas & oil, hazardous & solid waste, natural resources, real estate and land use, and utilities. For our analysis we multiply the resulting measure by 100,000 to make the coefficients readable. We split our sample by the median of two risk measures, environmental risk and overall risk. Columns 1 and 2 report regression results for the samples split by environmental risk while columns 3 and 4 report results for samples split by overall risk.

[Insert Table 7 about here]

Reported results confirm our expectations. The coefficient for payduration is positive and significant only in Columns 2 and 4 reporting results for the subsamples with risk measures above median levels. In unreported tests, we conduct similar analyses using Hassan et al.'s (2019) measures of overall political risk and overall non-political risk. These results are consistent with those reported in Table 7 and are available upon request. Results with the sample divided by above- and below-median risk measures corroborate stakeholder theory, indicating that, for companies with higher risk, CEOs with longer duration compensation are more incentivized to engage in inclusiveness activities that build social capital.

4.4 Robustness tests

While our baseline results establish the association between a firm's inclusiveness performance and CEO pay duration, we are aware of empirical challenges to our baseline results that can result from endogeneity issues, such as omitted variables, noisy proxies, and simultaneity. We employ two methods to further address endogeneity concerns: using CEO fixed effects or firm fixed effects in panel analysis and examining immediate vesting value, an alternative measure of managerial myopia with much less endogeneity concern.

4.4.1 Endogeneity Tests - Firm-level and Executive-level Fixed Effects

We also conduct analyses similar to that reported in Table 4 to control for firm-level and executive-level fixed effects. This method addresses endogeneity issues by controlling for firm-level and executive-level time invariant heterogeneity in LGBTQ policies. Specifically, we rerun our analyses with firm-level fixed effects and executive-level fixed effects and report the results in Table 8. Column 1 presents results using firm-level fixed effects panel models. These results confirm that longer pay duration is significantly associated with higher CEIs

[Insert Table 8 about here]

The existing literature shows that CEO personal characteristics can impact corporate social investments. Davidson et al. (2019) find that CEO-level fixed effects explain 63% of the corporate social score variation. We have already controlled for some fundamental CEO characteristics, including age and gender, but to better control for the potential influence of CEO characteristics on firm inclusiveness performance, we apply executive-level fixed effects. We find that even when controlling for these executive-level effects in Column 2, CEO pay duration still has a positive and significant impact on LGBTQ inclusiveness. In general, we show that our primary findings are robust to firm-level and executive-level fixed effects and our results are not conditional on firm or executive characteristics.

4.4.2 Endogeneity Tests - Scheduled Vesting

We then further allay endogeneity concerns by employing an alternative proxy for CEO myopia. Edmans et al. (2017) use the dollar amount of restricted stocks and options scheduled to vest or become exercisable to measure short-term CEO incentives: the more shares or options that are scheduled to vest in a given period, executives are more myopic in decision-making. Although this is not strictly a duration measure, as managers can simultaneously have long-term incentives and upcoming vesting grants, an advantage of this method is that equity grants are often determined by boards of directors several years prior to vesting. Thus, they are unlikely to be related to current firm policies, including LGBTQ inclusiveness activities.

Following Edmans et al. (2017), we estimate the value of option and stock grants that are vesting in a given year (*Vesting_value*) based on their vesting schedules that are published on grant dates from previous years. We use the current fiscal year-end financial information to calculate the value of these vesting grants. For example, if we find in Incentive Lab an option grant awarded in 2010 with a three-year vesting schedule, we assume that this grant is vested in 2013.¹ We use stock prices, volatility, dividend ratio, and the risk-free rate at the end of fiscal year 2013 to calculate the grant's value and then obtain the sum of all values of grants with estimated vesting dates in 2013 to obtain *Vesting_value*. We use the natural logarithm of this variable in regressions.

[Insert Table 9 about here]

We replicate the baseline tests in Table 4 by replacing *payduration* with *Vesting_value* and present the results in Table 9. It is also worth noting that we match CEI in year t with vesting values in year t to capture the timely nature of these vesting grants and their effects on CEI. The

¹ For the grants to be vested in equal installments over the vesting period (graded vesting), we allocate these grants to separate years accordingly. However, it is possible that there are other situations for which we are not able to control in calculating vesting value, such as early vesting or grant reloads. We acknowledge these limitations.

effects of scheduled vesting on CEI are negative and significant, as seen in all columns. These findings are consistent with the argument that CEO long-termism/short-termism due to incentives impacts LGBTQ inclusiveness decisions; current short-termism triggered by board decisions made several years in the past, which largely avoids endogeneity, impacts firms' CEI scores. Results in Table 9 suggest that our baseline results, which show the link between incentive horizons and CEI, are generally not sensitive to endogeneity concerns.

4.4.3 Other Robustness Tests

We also conduct several other tests to further confirm the robustness of our findings. First, we investigate the short-term pay focus measure used by Deckop et al. (2006) that links CEO compensation incentives to corporate social performance. Consistent with the general tenor of this paper, they find that a short-term CEO pay focus was negatively related to corporate social performance. We replicate their short-term pay focus measure for CEOs by dividing the dollar value of salary and bonuses received by a CEO for the year by the total dollar value of pay received, which equals the sum of salary, bonus, and the value of stock options received based on the Black-Scholes method.

We report the tests with *Short-term Pay* in Table 10. Models in Columns 1 and 2 of Table 10 replace payduration used in previous tables with *Short-term Pay*, while models in Columns 3 and 4 include both measures. Table 10 shows that *Short-term Pay* reduces CEI. This indicates that CEOs whose main compensation sources are cash and rely less on future firm performance are less likely to highly engage in inclusiveness activities. In addition, payduration is still positive and significant in Columns 3 and 4. These results provide further support to the main findings of the paper that CEO long-termism (myopia) leads to more (less) LGBTQ inclusiveness.

[Insert Table 10 about here]

Second, we use an alternative measure of the Corporate Equality Index. In our sample, 36% of the observations have a score of 100 for CEI. To account for the fact that many firms achieve the highest score on LGBTQ inclusiveness, we construct a dummy variable that is equal to 1 if CEI is 100, and 0 if otherwise. Second, firms' inclusiveness efforts could be impacted by firm age, CEO tenure, and average board age. We construct variables to measure these three factors and find that our results remain robust after we include these variables in our models. (These results are untabulated for the sake of brevity and are available upon request.)

5. CEO Pay Duration, CEI, and Company Value

We hypothesize (Hypotheses 2 and 3) that CEI and CEO pay duration will be positively associated with increased corporate value. To address these hypotheses, we use Tobin's Q as a measure of corporate value. We follow the formula used by Green et al. (2014) and Ryngaert and Thomas (2012) to calculate Tobin's Q as the ratio of market value of assets to book value of assets.

$$\text{TOBINQ} = (\text{MKTVAL} + \text{TA} - \text{SEQ}) / \text{TA} \quad (3)$$

where:

MKTVAL = the market value of common stock,
TA = the book value of the total assets of the firm, and
SEQ = book value of shareholder equity.

We then use the following regression formula while controlling for industry and time fixed effects in our full model.

$$\begin{aligned} \text{Tobinq}_{it+1} \text{ or } \text{Tobinq}_{it+2} = & \alpha_1 + \alpha_2 \text{CEI}_{it} + \alpha_3 \text{payduration}_{it} + \alpha_4 \text{Tobinq}_{it} + \\ & \alpha_5 \ln \text{CEO_delta}_{it} + \alpha_6 \ln \text{CEO_vega}_{it} + \alpha_7 \log \text{at}_{it} + \alpha_8 \text{lev}_{it} + \alpha_9 \text{CEOgender}_{it} + \\ & \alpha_{10} \text{CEOage}_{it} + \alpha_{11} \text{CEOdualbdchair}_{it} + \alpha_{12} \text{bdsizediversity}_{it} + \\ & \alpha_{13} \text{agediversity}_{it} + \alpha_{14} \text{instituper}_{it} + \varepsilon_{it} \end{aligned} \quad (3)$$

Table 11 reports regression results with one-year and two-year future Tobin's q as dependent variables. These results are also interesting. As expected, future Tobin's q is positively and highly significantly related to current Tobin's q as reported in Columns 3 and 4. CEI is

positively and significantly associated with higher future long-term corporate value in all models, regardless of whether we include current Tobin's q. However, CEO pay duration is significantly and positively related to future Tobin's q only in Columns (1) and (2) when we do not control for current Tobin's q; the significance disappears in Columns (3) and (4) when we include the current firm long-term market value measured by Tobin's Q. Our results support Hypothesis 2, but at best provide weak support for Hypothesis 3.

[Insert Table 11 about here]

To provide robustness to the long-term market value study, in Table 12 we also study whether CEO pay duration and CEI are associated with future accounting performance, measured as return on assets (ROA) one year and two years in the future. The following regression formula is adopted. The equation similar to Equation (3) but we replace Tobin's q measures with ROA measures.

$$\begin{aligned} \text{ROA}_{it+1} \text{ or } \text{ROA}_{it+2} = & \alpha_1 + \alpha_2 \text{CEI}_{it} + \alpha_2 \text{payduration}_{it} + \alpha_3 \text{Tobinq}_{it} + \\ & \alpha_4 \ln \text{CEO_delta}_{it} + \alpha_5 \ln \text{CEO_vega}_{it} + \alpha_6 \log \text{at}_{it} + \alpha_7 \text{lev}_{it} + \alpha_8 \text{CEOgender}_{it} + \\ & \alpha_9 \text{CEOage}_{it} + \alpha_{10} \text{CEOdualbdchair}_{it} + \alpha_{11} \text{bdsizes}_{it} + \alpha_{12} \text{genderdiversity}_{it} + \\ & \alpha_{13} \text{agediversity}_{it} + \alpha_{14} \text{instituper}_{it} + \varepsilon_{it} \end{aligned} \quad (4)$$

[Insert Table 12 about here]

The coefficients of CEI scores are positive and significant in all columns, suggesting that CEI investments are related to better future profitability. In line with Table 11, CEO pay duration in Table 12 is positive and significant only when we do not include current ROA in the regressions. In summary, we find evidence that long-term incentivized CEOs' decisions to increase LGBTQ inclusiveness can help their firms achieve superior operating performance because these inclusiveness activities are positively related to better future profitability.

6. Conclusion

Many societal and business stakeholder groups view diversity and inclusion efforts as highly ethical pursuits. Given the documented long-term benefits of LGBTQ inclusiveness policies (Wang & Schwarz, 2010; Pichler et al., 2018; Hossain et al., 2020) along with the perceived moral virtue of inclusiveness (Warren & Warren, 2023), increasing scholarly understanding of antecedents of LGBTQ inclusiveness policy adoption is an important academic endeavor.

This study contributes to the literature by providing evidence that CEO pay duration is associated with companies' support of LGBTQ diversity and inclusion policies as measured by the CEI. This finding suggests that stakeholder theory best explains why firms design and engage in LGBTQ inclusion activities, and that long-term shareholders benefit from those activities. Likewise, this study confirms that diversity as measured by CEI correlates with higher long-term corporate value. The impact of CEO pay duration on CEI is increased when CEOs are younger, governance measures in place are weaker, and when firms perceive higher risk and may need more social capital insurance from stakeholders. Overall, our findings provide evidence that longer CEO pay duration in compensation packages results in both better diversity and better financial outcomes for companies.

Lastly, this study also yields important practical implications that contribute to growing interest in understanding whether a firm can develop a social responsibility conscience that comes into play in corporate decision-making. Executive compensation design has been actively debated, including whether executives are rewarded with sufficient equity-based compensation and whether compensation contracts that reward executives for short-term results can incentivize excessive risk-taking (Bebchuk and Fried, 2010). While the existing literature suggests that social performance goals in executive contracts improve corporate social engagement (Maas 2018), we

extend this thread of literature. By linking pay duration to corporate social performance activities, our findings suggest that socially responsible firms can strategically design vesting periods for CEO compensation to influence managers' incentives to manage in socially responsible ways.

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Appendix: Variable Definitions

Variable	Definition
age_diversity	Is the coefficient of variation of ages of the firm's top management team.
assets	total assets at the end of the year, and we use the natural logarithm term in regressions.
bd_size	Number of members on the board of directors.
CEI	HRCF Corporate Equality Index related to that year of operation.
CEO_age	The age of CEO.
CEOdualbdchair	A dummy variable = 0 if the CEO is not chairman of board of directors, 1 if they are also the board chair.
CEO_gender	A dummy variable = 0 if man, 1 if woman.
gender_diversity	The ExecuComp measure of gender diversity on the firms' top management team.
institu_per	Percentage of shares held by institutional investors.
lev	Long-term debt/total assets at the end of the year.
lnCEO_delta	CEO delta is the change in the dollar value of a CEO's stock and option portfolio with respect to a 1% change in current stock prices, and we use the natural logarithm term for regressions.
lnCEO_vega	CEO vega is the change in the dollar value of a CEO's stock and option portfolio with respect to a 1% change in the annualized standard deviation of stock returns, and we use the natural logarithm term in regressions.
payduration	This variable is measured in years. See Gopalan et al. (2014) and section 3.3 for detail.
Tobin's q	Is $(MKTVAL + TA - SEQ) / TA$, where: MKTVAL = the market value of common stock, TA = the book value of the total assets of the firm, and SEQ = book value of shareholder equity.

Table 1 - Sample Construction

	<u>No. of Observations</u>
Total potential Compustat – Capital IQ, North America observations from 2010-2018	77,758
Delete observations without TMT information	<u>-41,447</u>
Observations with CEO_age, gender_diversity and age_diversity	36,311
Delete observations without: CEI, data to compute Executive Pay Duration, CEO_delta and CEO_vega, necessary institutional ownership information, or necessary COMPUSTAT information	<u>-34,016</u>
Observations for main analyses	<u>2,295</u>

Table 2 - Summary Statistics

The main sample contains 2,295 firm-year observations for the period running from 2010 through 2018. See Appendix for detailed variable explanations.

Variable Name	Mean	Std. Dev.	Q1	Median	Q3
CEI	69.804	34.358	35	85	100
payduration	2.086	0.830	1.797	2.193	2.478
CEO_delta (in \$)	2,082,947	18,152,569	131,823	287,486	632,378
CEO_vega (in \$)	62,861	298,464	0	0	0
Assets (in millions)	76,682	244,348	8,115	19,467	46,521
lev	0.248	0.208	0.119	0.220	0.336
CEO_gender	0.045	0.207	0	0	0
CEO_age	59.712	6.071	56	60	63
CEOdualbdchair	0.612	0.487	0	1	1
bd_size	11.119	2.107	10	11	12
gender_diversity	0.162	0.176	0	0	0.320
age_diversity	0.101	0.042	0.072	0.096	0.124
institu_per	0.755	0.140	0.673	0.764	0.842

Table 3 - Correlations

In this table we show correlation coefficients with p-values in parentheses (p<0.01 bolded, p<0.05 underlined, P<0.10 italic). See Appendix for detailed variable explanatons.

Variables	CEI	paydurat ion	lnCEO_ delta	lnCEO_ve ga	logat	lev	CEO_ge nder	CEO_a ge	CEOdual bdchair	bd_size	gender_di versity	age_diver sity
payduration	0.083 (0.000)											
lnCEO_delta	<u>0.051</u> (0.015)	-0.092 (0.000)										
lnCEO_vega	-0.030 (0.149)	<u>0.051</u> (0.015)	0.027 (0.203)									
logat	0.185 (0.000)	0.017 (0.419)	0.007 (0.749)	-0.039 <i>(0.062)</i>								
lev	-0.093 (0.000)	<u>-0.050</u> (0.018)	-0.005 (0.799)	<u>0.052</u> (0.013)	-0.143 (0.000)							
CEO_gender	0.112 (0.000)	0.069 (0.001)	-0.021 (0.309)	-0.038 <i>(0.066)</i>	-0.031 (0.139)	-0.024 (0.259)						
CEO_age	-0.073 (0.001)	-0.099 (0.000)	0.140 (0.000)	-0.074 (0.000)	0.011 (0.592)	-0.039 <i>(0.061)</i>	-0.061 (0.003)					
CEOdualbdchair	<u>0.046</u> (0.026)	0.031 (0.140)	0.025 (0.235)	-0.006 (0.763)	0.082 (0.000)	-0.075 (0.000)	<u>-0.048</u> (0.023)	0.242 (0.000)				
bd_size	0.203 (0.000)	0.033 (0.111)	0.002 (0.932)	-0.039 <i>(0.064)</i>	0.213 (0.000)	-0.069 (0.001)	0.023 (0.276)	0.032 (0.120)	<u>0.052</u> (0.013)			
gender_diversity	0.122 (0.000)	0.032 (0.129)	<u>0.046</u> (0.026)	<u>-0.049</u> (0.018)	0.019 (0.369)	-0.026 (0.207)	0.242 (0.000)	-0.003 (0.903)	<u>-0.047</u> (0.025)	-0.015 (0.459)		
age_diversity	-0.018 (0.385)	-0.091 (0.000)	0.074 (0.000)	0.010 (0.649)	-0.059 (0.004)	0.007 (0.734)	-0.014 (0.509)	0.259 (0.000)	-0.081 (0.000)	-0.109 (0.000)	0.030 (0.150)	
institu_per	-0.156 (0.000)	-0.063 (0.002)	-0.072 (0.001)	0.097 (0.000)	-0.166 (0.000)	0.021 (0.318)	<u>-0.052</u> (0.013)	<u>-0.050</u> (0.016)	-0.114 (0.000)	-0.253 (0.000)	<u>-0.052</u> (0.014)	0.118 (0.000)

Table 4 - Baseline Test Results

This table reports baseline regression results. We use OLS estimation methods while controlling for year and industry effects. Standard errors are clustered at both the firm level and the year level and reported in parentheses. ***, **, * indicate statistical significance levels at 1%, 5%, and 10% , respectively. See Appendix for detailed variable explanations.

VARIABLES	(1) CEI	(2) CEI
payduration	4.359*** (0.791)	2.043*** (0.749)
CEO_delta	-0.252 (0.389)	-1.256*** (0.394)
CEO_vega	-1.043*** (0.171)	-0.583*** (0.167)
at		8.167*** (0.592)
lev		-6.877* (3.737)
CEO_gender		6.868*** (2.421)
CEO_age		-0.424*** (0.116)
CEOdualbdchair		3.498*** (1.355)
bd_size		0.640** (0.293)
gender_diversity		13.440*** (3.582)
age_diversity		23.740 (15.579)
institu_per		-9.642** (4.761)
Industry Fixed Effects	Yes	Yes
Time Fixed Effects	Yes	Yes
Observations	2,295	2,295
Adjusted R-squared	0.267	0.348

Table 5: Further Tests with Different Age Groups

This table reports results with different subsamples. We use OLS estimation methods to control for industry and year fixed effects in all models. Standard errors are clustered at both the firm level and the year level and reported in parentheses. ***, **, * indicate statistical significance levels at 1%, 5%, and 10% , respectively.. See Appendix for detailed variable explanations.

	(1)	(2)	(3)	(4)
	ceoage <= 60	ceoage > 60	AgeDiversity <= Median	AgeDiversity > Median
VARIABLES	CEI	CEI	CEI	CEI
payduration	2.661** (1.118)	1.332 (1.020)	-0.043 (1.053)	3.827*** (1.129)
CEO_delta	-0.309 (0.638)	-1.967*** (0.613)	-2.119*** (0.563)	-0.778 (0.560)
CEO_vega	-0.423** (0.210)	-0.694** (0.306)	-0.496** (0.234)	-0.636** (0.250)
at	6.142*** (0.766)	11.833*** (1.021)	8.309*** (0.836)	7.927*** (0.919)
lev	-4.910 (4.173)	-10.400 (8.738)	-8.128 (6.199)	-4.046 (4.677)
CEO_gender	9.831*** (2.553)	4.193 (5.030)	5.536 (3.652)	8.155** (3.263)
CEO_age	0.010 (0.265)	-0.067 (0.275)	-0.210 (0.209)	-0.470*** (0.148)
CEOdualbdchair	6.405*** (1.817)	-0.487 (2.215)	3.677* (2.059)	2.940 (1.964)
bd_size	0.750** (0.359)	0.689 (0.505)	0.648* (0.393)	0.579 (0.493)
gender_diversity	10.113** (4.696)	12.383** (5.811)	12.564** (5.259)	14.440*** (4.987)
age_diversity	36.223* (21.654)	44.943* (26.232)	-40.785 (49.613)	16.579 (28.229)
institu_per	-15.086*** (5.734)	-2.253 (9.547)	-10.148 (7.267)	1.897 (7.242)
Industry Fixed Effects	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Observations	1,285	1,010	1,148	1,147
Adjusted R-squared	0.326	0.436	0.344	0.417

Table 6: Further Tests with Different Governance Subsamples

This table reports results with different subsamples. We use OLS estimation methods to control for industry and year fixed effects in all models. Standard errors are clustered at both the firm level and the year level and reported in parentheses. ***, **, * indicate statistical significance levels at 1%, 5%, and 10% , respectively.. See Appendix for detailed variable explanations.

	(1)	(2)	(3)	(4)
	bdsiz < 11	bdsiz >= 11	CEOdualbdchair = 0	CEOdualbdchair = 1
VARIABLES	CEI	CEI	CEI	CEI
payduration	1.523 (1.247)	1.941** (0.963)	0.841 (1.337)	2.246** (0.958)
CEO_delta	-1.818** (0.748)	-0.722 (0.525)	-1.322* (0.695)	-0.896* (0.533)
CEO_vega	-0.565** (0.260)	-0.531** (0.228)	-0.297 (0.282)	-0.753*** (0.223)
at	8.526*** (1.130)	8.520*** (0.753)	6.680*** (1.026)	8.839*** (0.787)
lev	-6.525 (4.700)	-15.195** (6.459)	-6.348 (4.737)	-3.335 (7.003)
CEO_gender	13.211*** (4.083)	2.576 (3.215)	9.557*** (3.240)	1.168 (3.737)
CEO_age	-0.288 (0.209)	-0.418*** (0.148)	-0.150 (0.211)	-0.737*** (0.153)
CEOdualbdchair	2.376 (2.435)	3.722** (1.718)		
bd_size	2.645*** (0.991)	0.616 (0.448)	0.687 (0.459)	0.549 (0.402)
gender_diversity	13.777* (7.055)	13.823*** (4.340)	4.136 (6.225)	23.072*** (4.635)
age_diversity	21.317 (30.315)	19.918 (19.097)	29.807 (25.991)	41.954** (21.265)
institu_per	-20.965** (8.749)	-4.233 (5.974)	-21.990*** (6.982)	1.879 (6.535)
Industry Fixed Effects	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Observations	871	1,424	891	1,404
Adjusted R-squared	0.355	0.336	0.347	0.390

Table 7: Further Tests with Different Risk Subsamples

This table reports results with different subsamples. We use OLS estimation methods to control for industry and year fixed effects in all models. Standard errors are clustered at both the firm level and the year level and reported in parentheses. ***, **, * indicate statistical significance levels at 1%, 5%, and 10% , respectively.. See Appendix for detailed variable explanations.

	(1)	(2)	(3)	(4)
	Enrironmental Risk < Median CEI	Enrironmental Risk >= Median CEI	Total Risk < Median CEI	Total Risk >= Median CEI
VARIABLES				
payduration	1.242 (0.979)	2.831** (1.194)	1.335 (0.969)	3.238*** (1.202)
CEO_delta	-0.868 (0.532)	-1.668*** (0.621)	-0.462 (0.472)	-1.470** (0.677)
CEO_vega	-0.341 (0.248)	-0.708*** (0.251)	-0.426* (0.249)	-0.680*** (0.248)
at	8.237*** (1.023)	9.712*** (0.767)	8.655*** (1.039)	8.297*** (0.768)
lev	-3.344 (4.091)	-25.551*** (8.680)	-1.869 (4.025)	-18.271** (8.537)
CEO_gender	1.539 (3.560)	10.354*** (3.249)	6.833** (3.122)	5.893 (3.646)
CEO_age	-0.553*** (0.175)	-0.331** (0.157)	-0.665*** (0.175)	-0.218 (0.166)
CEOdualbdchair	2.197 (1.962)	3.855** (1.938)	2.558 (1.960)	2.251 (1.964)
bd_size	1.091** (0.479)	0.232 (0.363)	0.355 (0.484)	0.756** (0.369)
gender_diversity	13.833** (5.419)	12.085** (4.885)	13.622** (5.327)	13.747*** (4.771)
age_diversity	60.840*** (22.169)	28.037 (21.824)	74.766*** (22.000)	22.391 (22.982)
institu_per	-12.928** (6.512)	5.599 (7.404)	-8.448 (7.083)	-9.524 (6.959)
Industry Fixed Effects	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Observations	1,122	1,122	1,122	1,122
Adjusted R-squared	0.308	0.444	0.329	0.417

Table 8 - Firm Fixed Effects and Executive Fixed Effects

In this table we report our regression results with firm-level fixed effects in Column 1 and executive-level fixed effects in Column 2. We also control for year fixed effects in all models. Standard errors are clustered at both the firm level and the year level and reported in parentheses. ***, **, * indicate statistical significance levels at 1%, 5%, and 10% , respectively.. See Appendix for detailed variable explanations.

VARIABLES	(1)	(2)
	CEI	CEI
payduration	1.286** (0.523)	1.168* (0.616)
CEO_delta	-0.074 (0.329)	0.152 (0.558)
CEO_vega	-0.173 (0.152)	-0.394** (0.173)
at	15.305*** (2.306)	11.490*** (2.932)
lev	1.386 (7.570)	8.781 (6.044)
CEO_gender	-3.848 (2.585)	N/A
CEO_age	0.078 (0.102)	3.219*** (0.386)
CEOdualbdchair	-0.042 (1.358)	-2.990 (2.746)
bd_size	-0.246 (0.255)	-0.549** (0.276)
gender_diversity	2.322 (3.682)	1.881 (4.120)
age_diversity	-7.615 (14.878)	1.175 (16.053)
institu_per	-0.919 (5.786)	-13.609** (6.356)
Firm Fixed Effects	Yes	No
Executive Fixed Effects	No	Yes
Time Fixed Effects	Yes	Yes
Observations	2,295	2,295
Adjusted R-squared	0.815	0.846

Table 9 - Impact of Immediate Vesting

This table reports regression results using vesting value as one of the key independent variables. We use OLS estimation methods while controlling for year and industry effects. Standard errors are clustered at both the firm level and the year level and reported in parentheses. ***, **, * indicate statistical significance levels at 1%, 5%, and 10% , respectively.. See Appendix for detailed variable explanations.

VARIABLES	(1) CEI	(2) CEI
Vesting value	-0.448** (0.219)	-0.353* (0.191)
CEO_delta	0.159 (0.493)	-0.958* (0.500)
CEO_vega	-1.050*** (0.218)	-0.556*** (0.207)
at		7.976*** (0.726)
lev		-11.708** (4.671)
CEO_gender		5.981* (3.094)
CEO_age		-0.583*** (0.143)
CEOdualbdchair		4.715*** (1.630)
bd_size		0.827** (0.321)
gender_diversity		12.851*** (4.268)
age_diversity		35.038* (18.890)
institu_per		-13.584** (6.390)
Industry Fixed Effects	No	Yes
Time Fixed Effects	Yes	Yes
Observations	1,521	1,521
Adjusted R-squared	0.284	0.373

Table 10 - The Impact of Short-term Pay

This table reports the effect of short-term pay on CEI. Short-term pay is defined as the sum of salary and bonus divided by total compensation. We use OLS estimation methods while controlling for year and industry effects. Standard errors are clustered at both the firm level and the year level and reported in parentheses. ***, **, * indicate statistical significance levels at 1%, 5%, and 10% , respectively.. See Appendix for detailed variable explanations.

VARIABLES	(1) CEI	(2) CEI	(3) CEI	(4) CEI
Short-term Pay	-22.687*** (5.538)	-12.279** (5.100)	-15.080*** (5.752)	-8.985* (5.298)
payduration			3.510*** (0.851)	1.624** (0.793)
CEO_delta	-0.193 (0.402)	-1.270*** (0.410)	-0.256 (0.402)	-1.302*** (0.410)
CEO_vega	-1.004*** (0.172)	-0.558*** (0.167)	-1.022*** (0.171)	-0.569*** (0.167)
at		8.267*** (0.585)		8.129*** (0.590)
lev		-7.639** (3.663)		-7.141* (3.722)
CEO_gender		7.452*** (2.432)		6.972*** (2.433)
CEO_age		-0.428*** (0.116)		-0.406*** (0.117)
CEOdualbdchair		3.289** (1.356)		3.266** (1.353)
bd_size		0.610** (0.296)		0.614** (0.295)
gender_diversity		13.255*** (3.582)		13.256*** (3.582)
age_diversity		23.772 (15.603)		23.880 (15.617)
institu_per		-9.634** (4.763)		-9.999** (4.774)
Industry Fixed Effects	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Observations	2,295	2,295	2,295	2,295
Adjusted R-squared	0.264	0.347	0.269	0.348

Table 11: Future Performance Study - Tobin's Q

In this table we report results with future performance. The dependent variables are Tobin's Q in one year and Tobin's Q in two years. We use OLS estimation methods to control for industry and year fixed effects. Standard errors are clustered at both the firm level and the year level and reported in parentheses. ***, **, * indicate statistical significance levels at 1%, 5%, and 10% , respectively.. See Appendix for detailed variable explanations.

VARIABLES	(1) Tobin's Q in One Year	(2) Tobin's Q in Two Years	(3) Tobin's Q in One Year	(4) Tobin's Q in Two Years
CEI	0.006*** (0.001)	0.006*** (0.001)	0.001*** (0.000)	0.002*** (0.001)
payduration	0.050* (0.028)	0.064** (0.032)	-0.011 (0.013)	-0.001 (0.020)
Current Tobin's Q			0.931*** (0.046)	0.926*** (0.047)
lnCEO_delta	0.104*** (0.017)	0.124*** (0.021)	0.004 (0.008)	0.024** (0.012)
lnCEO_vega	-0.019*** (0.006)	-0.019*** (0.007)	-0.003 (0.004)	-0.003 (0.005)
logat	-0.273*** (0.029)	-0.289*** (0.032)	-0.026** (0.012)	-0.044** (0.019)
lev	1.200*** (0.395)	1.149*** (0.339)	-0.079 (0.201)	-0.132 (0.176)
ceogender	0.056 (0.127)	0.085 (0.159)	0.044 (0.064)	0.075 (0.112)
ceoage	-0.005 (0.004)	-0.014** (0.006)	-0.003* (0.002)	-0.012** (0.005)
ceodualbdchair	-0.144*** (0.049)	-0.190*** (0.054)	-0.034 (0.022)	-0.082*** (0.032)
bdsiz	0.005 (0.010)	0.012 (0.012)	0.002 (0.005)	0.010 (0.007)
genderdiversity	-0.114 (0.136)	-0.025 (0.161)	-0.029 (0.076)	0.055 (0.115)
age_diversity	-0.744 (0.519)	0.340 (0.903)	0.056 (0.239)	1.110 (0.783)
instituper	-0.884*** (0.174)	-1.079*** (0.196)	-0.205** (0.087)	-0.405*** (0.112)
Industry Fixed Effects	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Observations	2,284	2,282	2,284	2,282
Adjusted R-squared	0.424	0.397	0.877	0.763

Table 12: Future Performance Study - ROA

In this table we report results with future performance. The dependent variables are ROA in one year and ROA in two years. We use OLS estimation methods to control for industry and year fixed effects. Standard errors are clustered at both the firm level and the year level and reported in parentheses. ***, **, * indicate statistical significance levels at 1%, 5%, and 10% , respectively.. See Appendix for detailed variable explanations.

VARIABLES	(1) ROA in One Year	(2) ROA in Two Years	(3) ROA in One Year	(4) ROA in Two Years
CEI	0.022*** (0.005)	0.018*** (0.005)	0.017*** (0.004)	0.014*** (0.004)
payduration	0.366* (0.214)	0.317* (0.177)	0.173 (0.195)	0.176 (0.158)
Current ROA			0.455*** (0.087)	0.309*** (0.084)
lnCEO_delta	0.432*** (0.102)	0.467*** (0.107)	0.195** (0.080)	0.306*** (0.100)
lnCEO_vega	-0.169*** (0.037)	-0.144*** (0.041)	-0.082** (0.035)	-0.086** (0.041)
logat	-1.229*** (0.160)	-0.992*** (0.162)	-0.720*** (0.166)	-0.649*** (0.183)
lev	1.427 (1.303)	1.916* (1.139)	1.556* (0.844)	1.956** (0.845)
ceogender	0.576 (0.538)	1.055* (0.594)	0.529 (0.407)	1.018* (0.543)
ceoage	-0.020 (0.023)	-0.028 (0.026)	-0.021 (0.020)	-0.029 (0.025)
ceodualbdchair	-0.309 (0.306)	-0.037 (0.304)	-0.094 (0.270)	0.115 (0.289)
bdsiz	-0.088 (0.064)	-0.054 (0.070)	-0.038 (0.054)	-0.019 (0.065)
genderdiversity	0.071 (0.779)	-0.239 (0.846)	0.119 (0.674)	-0.185 (0.794)
age_diversity	-9.369*** (3.564)	-2.098 (4.035)	-5.694* (3.199)	0.384 (3.916)
instituper	-2.170* (1.246)	-2.926** (1.399)	-0.622 (0.989)	-1.872 (1.325)
Industry Fixed Effects	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Observations	2,284	2,282	2,284	2,282
Adjusted R-squared	0.241	0.250	0.390	0.313