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ABSTRACT

In this study, we examine whether and how CEO tenure affects firms' corporate social responsibility (CSR) performance. Using a sample of U.S. firms for the 1999–2013 period, we find that firms' CSR performance is significantly higher in CEOs' early tenure than in their later tenure. We also find that the relationship between CEO tenure and CSR performance is stronger when the board is more independent and CEOs have a longer expected employment period, supporting both the signaling interpretation of the career concern hypothesis and the career horizon hypothesis. Consistent with the trend of increasing awareness of the importance of CSR, we find that the relationship between CEO tenure and CSR performance has become more significant in recent years. Finally, we show that better CSR performance in a CEO's early tenure is associated with a lower CEO turnover probability, suggesting that commitment to CSR during CEOs' early tenure could enable them to mitigate career concerns.

1. Introduction

Due to the growth in stakeholders' expectations in recent decades, corporate social responsibility (CSR) has become a mainstream business consideration for many firms. For example, an estimated 15 billion U.S. dollars were invested in philanthropy by large U.S. firms in 2010 (Di Giuli & Kostovetsky, 2014). Firms' CSR performance has also received tremendous scrutiny from various parties, including the mass media, socially responsible investment funds, and rating parties such as MSCI (i.e., KLD), which can significantly affect firms' reputation and operations. Nevertheless, firms' CSR performance continues to vary widely, which has prompted a number of studies investigating the determinants of firms' CSR commitment. One strand of studies has shown that a firm's CEO has a significant effect on the CSR process; therefore, the diversity of CEOs' characteristics and incentives provides a powerful explanation for the variations in firms' CSR performance (e.g., Hambrick & Mason, 1984; Donaldson, 1999; McGuire, Dow, & Argheyd, 2003; Carpenter, Geletkanycz, & Sanders, 2004; Deckop, Merriman, & Gupta, 2006; Chin, Hambrick, & Treviño, 2013; Di Giuli & Kostovetsky, 2014; Tang, Qian, Chen, & Shen, 2015; McCarthy, Oliver, & Song, 2017). This study advances this line of inquiry by providing a comprehensive analysis of how CEO tenure, an important dimension of CEO characteristics, affects

CSR performance.

CEO tenure has significant implications for firm operations. In the early stage of a CEO's tenure, both the board of directors and the market are uncertain about the CEO's ability, leading to a career concern problem (Gibbons & Murphy, 1992; Holmstrom, 1982). As CEOs with better performance early in their tenure are likely to enjoy future benefits, including greater future compensation, reappointments, and greater autonomy (e.g., Fama, 1980; Hermalin & Weisbach, 1998), they have strong incentives to signal their superior ability at this stage. In addition, early-tenure CEOs have a longer horizon and thus have strong incentives to undertake long-term investment projects because they can reap the benefits of these investments at a later stage of their tenure. Consequently, CEOs have two distinct incentives in their early tenure: signaling to mitigate career concerns and investing to gain future benefits later in their tenure. While CEOs are likely to inflate earnings to signal their ability in the early stage of their tenure to alleviate career concerns (Ali & Zhang, 2015), our knowledge of whether this likelihood can be applied to CSR is limited, and the results are mixed.¹ In addition, studies have not explicitly tested these two incentives for CSR as suggested by the CEO tenure literature and have not tested whether this strategy is effective. Therefore, we do not know the motives for CEOs to engage in CSR early in their tenure. We aim to fill this void by

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¹ For example, Fabrizi, Mallin, and Michelon (2014) examine only two years of CEO tenure and find that firms with incoming (departing) CEOs have strong (weak) CSR performance. Oh et al. (2014), however, show that the relation between CEO age and CSR performance is insignificant.

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examining the effect of CEO tenure on CSR performance.

Studies have suggested that in a firm setting CSR may be viewed as an investment or signaling mechanism.² The stakeholder theory of CSR suggests that CSR can be viewed as an investment, as CSR can serve to meet stakeholder expectations, which in turn rewards the firm by increasing its future performance (e.g., Bhardwaj, Chatterjee, Demir, & Turut, 2018; Freeman, 1984; Price & Sun, 2017; Wood, 1991). Despite inconclusive empirical results regarding the relationship between CSR and corporate financial performance in the literature, after analyzing approximately 2200 studies, Friede, Busch, and Bassen (2015) concludes that the majority (about 90%) find either a positive effect or, at the minimum, no effect of CSR on financial performance.³ In this study, we also find a significantly positive relationship between CSR and financial performance based on our sample, lending additional support to Friede et al. (2015).⁴ As such, it is reasonable to expect that CEOs consider CSR to be value-added activities. While CEOs may manage earnings early in their tenure, when boards of directors evaluate them based on financial performance (Ali & Zhang, 2015), CEOs may also actively engage in CSR because CSR is an important evaluation criterion (e.g., Chiu & Sharfman, 2016; Hong, Li, & Minor, 2016; Hubbard, Christensen, & Graffin, 2017) and could signal their ability (Lys, Naughton, & Wang, 2015; Spence, 1973; Stiglitz, 2000). In addition, because of the at least non-negative relationship between CSR and financial performance (Friede et al., 2015), engaging in CSR to mitigate career concerns does not necessarily result in lower earnings in the same context (Ali & Zhang, 2015).⁵ Therefore, we argue that CEOs may use CSR performance as a signal to mitigate career concerns in their early tenure (*career concern hypothesis*). As CSR is analogous to long-term investments (e.g., Mahapatra, 1984; McWilliams & Siegel, 2000; Orlitzky, Schmidt, & Rynes, 2003), CEOs have strong incentives to invest in CSR early in their tenure because they can reap the benefits of CSR at a later stage of their tenure (*career horizon hypothesis*). These two effects collectively imply a negative relationship between CEO tenure and CSR performance.

To better understand how CEO tenure affects CSR performance, we further explore two separate channels that are suggested by the hypotheses. Doing so helps disentangle these two effects, which have not been examined in CSR studies. As boards with greater independence are more likely to dismiss CEOs with poor performance (e.g., Hermalin & Weisbach, 1998), the career concern problem is more acute when boards are more independent. In response to more independent boards, CEOs have stronger incentives early in their tenure to mitigate career concerns by sending signals. Therefore, a stronger relationship between CEO tenure and CSR performance in firms with more independent boards supports the career concern hypothesis. The career horizon hypothesis suggests that CEOs' expected length of employment affects their incentive to engage in CSR early in their tenure. Therefore, we expect a significantly stronger effect of CEO tenure on CSR performance when CEOs have a longer *expected* employment period.

We examine the aforementioned research questions based on a sample of U.S. firms for the period from 1999 to 2013. Consistent with our main hypothesis, we find a significantly negative relationship between CEO tenure and CSR performance after controlling for various CEO characteristics and other determinants documented in prior studies. In terms of economic significance, we find that a one-standard-deviation increase in *LNTENURE* (the natural logarithm of CEO tenure)

leads to a *CSRP* (CSR performance) decrease of 7.18%.⁶ Further analyses suggest that firms' CSR performance is better in the early years of a CEO's service, particularly in the second and third years, than in the later years. In addition, our results reveal that the negative relationship between CSR performance and CEO tenure is more significant in recent years, suggesting that early-tenure CEOs engage in CSR more actively for either signaling or investment purposes because of the increasing awareness of CSR in recent years. Our results also reveal that this effect is more pronounced when boards are more independent and when CEOs have a longer *expected* career horizon,⁷ confirming the career concern and career horizon hypotheses, respectively. Furthermore, our results are robust in a variety of sensitivity tests. Finally, we show that better CSR performance in CEOs' early tenure is associated with a lower turnover probability, suggesting that commitment to CSR early in their tenure could allow CEOs to mitigate career concerns.

Our study makes several contributions to the literature. First, it supports the upper echelon theory of CSR and adds CEO tenure as a determinant of CSR performance (e.g., McGuire et al., 2003; Deckop et al., 2006; Chin et al., 2013; Di Giuli & Kostovetsky, 2014; Tang et al., 2015; McCarthy et al., 2017). Here, this study also suggests that CEO commitment to CSR early in their tenure may be an effective strategy for CEOs to mitigate career concerns. Second, our study extends and complements recent studies on the consequences of CEO tenure for firm operations (Ali & Zhang, 2015; McClelland, Barker, & Oh, 2012; Walters, Kroll, & Wright, 2007) by showing the implications of CEO tenure for CSR. As both boards of directors and the market are increasingly aware of the value-relevance of CSR and consider CSR to be an important CEO performance dimension, the findings from our study are useful for practitioners who are involved in the process of CEO compensation contracting.

The remainder of our paper is organized as follows. We first review the literature and develop our hypotheses. We then describe the research design and the sample selection. Finally, we present the empirical results and conclude the paper.

2. Literature review and hypothesis development

2.1. Review of selected literature on CSR

There are numerous definitions of CSR. Carroll (1979) defines CSR as “social responsibility of business that encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time.” McWilliams and Siegel (2001) view CSR as “actions that appear to further some social goods, beyond the interests of the firm and that which is required by law.” These definitions stress the discretionary notion of CSR (e.g., Donaldson, 1999) engaged in by firms and target the improvement of various social and environmental outcomes. As CSR has become increasingly important for modern firms, many studies have been conducted to explore the motives behind CSR commitment. Among the various views that explain CSR motives, two prominent ones, long-term investment and signaling, are particularly relevant to our study.

The long-term investment view of CSR is derived from stakeholder theory, which suggests that firms should satisfy the needs of stakeholders who affect their operations (Freeman, 1984); stakeholders, in turn, reward firms for their CSR efforts. For example, the literature shows that firms acting in a socially responsible manner have better reputations (Cahan, Chen, Chen, & Nguyen, 2015; Orlitzky et al., 2003), enjoy lower costs of capital (Cheng, Ioannou, & Serafeim, 2014; El

² Lys et al. (2015) provide an excellent discussion of different views of CSR.

³ A meta-analysis by Orlitzky et al. (2003) also supports a positive relationship between CSR and corporate financial performance. More specifically, the meta-analytically determined true score correlation was 0.36.

⁴ For brevity, we did not report the table in this paper.

⁵ In an additional test, we show that our results are unchanged after controlling for earnings management.

⁶ The effect of *LNTENURE* on CSR is computed as -0.083 (the coefficient on *LNTENURE*) $\times 0.865$ (the sample standard deviation of *LNTENURE*).

⁷ As it is very difficult to measure expected employment with empirical studies, we have to use the length of CEO employment as proxy for expected career horizon.

Ghoul, Guedhami, Kwok, & Mishra, 2011; Goss & Roberts, 2011; Jiraporn, Jiraporn, Boeprasert, & Chang, 2014), and gain support from important stakeholders, such as employees (Greening & Turban, 2000) and customers (Maignan, Ferrell, & Hult, 1999). In addition, firms with better CSR performance can obtain legitimacy, that is, they can gain a “license to operate” (e.g., Hartman, Rubin, & Dhanda, 2007). The phrase “doing well by doing good” captures the positive relationship between CSR and firm performance. Nevertheless, firms that invest in CSR may not be able to immediately generate satisfactory financial performance, as they may divert their limited resources from routine profit-generating projects (e.g., Cochran & Wood, 1984; Griffin & Mahon, 1997; McWilliams & Siegel, 2000; Waddock & Graves, 1997; Wang, Choi, & Li, 2008). However, the majority of studies have found either a positive effect or, at the minimum, no effect of CSR on financial performance (e.g., Friede et al., 2015; Orlitzky et al., 2003). Consequently, CSR can be viewed as a long-term investment (e.g., Mahapatra, 1984; McWilliams & Siegel, 2000; Orlitzky et al., 2003).

CSR can also be viewed as a signaling mechanism. Signaling theory suggests that a contracting party could use costly and observable mechanisms to mitigate the asymmetric information problem (e.g., Spence, 1973; Stiglitz, 2000). An important application of signaling theory in a firm setting is dividend policy (e.g., Bhattacharya, 1979; Ross, 1977). As CSR investment is nontrivial, and the premium of CSR is sufficient only to cover the costs of high-quality firms, CSR is well qualified for signaling (e.g., Spence, 1973). For example, King, Lenox, and Terlaak (2005) show that investment in ISO 14001 (an environmental management certification system) could serve as an effective signaling mechanism to demonstrate firms' commitment in the supply chain. Lys et al. (2015) demonstrate that CSR conveys credible information about firms' future financial performance, confirming the signaling hypothesis of CSR.

2.2. CEOs and CSR

Although several organizational factors affect a firm's commitment to CSR, the role of the CEO is particularly important. Upper echelon theory contends that CEOs play a vital role in the CSR process and thus suggests that CEOs' characteristics affect firms' CSR performance (e.g., Carpenter et al., 2004; Donaldson, 1999; Hambrick & Mason, 1984). The early literature has shown that CEOs' economic incentives, as reflected in their compensation packages (e.g., Deckop et al., 2006; McGuire et al., 2003), affect their CSR commitment. Subsequent studies have shown that a CEO's beliefs and psychological bias affect CSR outcomes (e.g., Chin et al., 2013; Di Giuli & Kostovetsky, 2014; McCarthy et al., 2017; Tang et al., 2015). A related study argues that CEOs' career incentives, as captured by age, affect CSR, but that study fails to find a significant relationship (Oh, Chang, & Cheng, 2014). Our study is different from Oh et al. (2014) in that we consider CEOs' careers, rather than their age, as affecting CSR.⁸

While CEOs have a significant effect on firms' CSR performance, firms' CSR performance also influences CEOs' career prospects. As CEOs have a fiduciary duty to increase shareholders' value, financial performance should be the primary metric for evaluating CEOs (Graffin, Boivie, & Carpenter, 2013). However, empirical studies have shown that a considerable portion of the variance in CEO turnover cannot be explained by financial performance (Finkelstein, Hambrick, & Cannella, 2009), suggesting that several non-financial factors should be considered. However, one particularly important dimension that has garnered minimal research focus in the literature is CSR. As CSR performance has been demonstrated to have an increasing effect on firm

financial performance by affecting stakeholders' support of firms, CSR performance has become an important means for boards of directors to interpret CEOs' contributions in promoting firm performance (Hubbard et al., 2017). Hong et al. (2016) show that many U.S. S&P 500 firms include CSR in CEO compensation contracts, providing more direct evidence that boards of directors do evaluate CEOs based on their CSR performance. Chiu and Sharfman (2016) also show that board members are likely to dismiss CEOs with poor CSR performance. These studies collectively suggest that CSR has become an important performance indicator for evaluating CEOs' ability. Despite ample evidence of the inclusion of CSR performance in the evaluations of CEOs, few studies have comprehensively examined how CEOs adjust their CSR strategies over their tenure.

2.3. Hypothesis development

Based on prior studies, we propose a negative relationship between CEO tenure and CSR performance for two reasons. First, CEOs have incentives to use CSR performance to signal their ability to mitigate career concerns. The market, including both the internal and external labor market, is uncertain about newly appointed CEOs' abilities (Gibbons & Murphy, 1992; Holmstrom, 1982). The market assesses these abilities based on various observable performance indicators, including financial and non-financial ones (e.g., Chiu & Sharfman, 2016). As a negative assessment of CEOs' ability is associated with adverse consequences, such as lower pay or dismissal (e.g., Chiu & Sharfman, 2016; Hubbard et al., 2017), CEOs have strong incentives to signal their ability through various means early in their tenures (Fama, 1980; Hermalin & Weisbach, 1998). Although boards of directors may use financial performance as a signal (Ali & Zhang, 2015), they also consider non-financial indicators such as CSR performance when evaluating CEOs (Finkelstein et al., 2009; Hong et al., 2016). In addition, the widespread belief that there is at least a non-negative relationship between CSR and financial performance (e.g., Friede et al., 2015; Orlitzky et al., 2003) suggests that using CSR performance as a signal of the ability to mitigate career concerns does not conflict with managing earnings (Ali & Zhang, 2015). Therefore, we argue that in their early tenure, CEOs have incentives to promote CSR performance to mitigate career concern problems because CSR is an important performance criterion (e.g., Hong et al., 2016) and can signal CEOs' ability (Bénabou & Tirole, 2010; Borghesi, Houston, & Naranjo, 2014; Lys et al., 2015; Spence, 1973; Stiglitz, 2000). We consider this effect to be the *career concern hypothesis* of CSR.

Our second argument for the negative relationship between CEO tenure and CSR is the horizon problem. Newly appointed CEOs have longer horizons than those in the later stages of their careers. As investment early in the tenure of CEOs can benefit them at later stages by improving the future performance of firms, early-tenure CEOs have strong incentives to undertake more investment than those at later stages. Consistent with this argument, Pan, Wang, and Weisbach (2016) report a significantly larger investment in the early stages of CEOs' tenure. As CSR creates long-term benefits for the firms, we argue that early-tenure CEOs have stronger incentives to engage in CSR than those in later stages (*career horizon hypothesis*). These two hypotheses collectively suggest a negative association between CEO tenure and CSR. Based on the above arguments, we formally state our first hypothesis as follows:

Hypothesis 1. There is a negative relationship between CEO tenure and CSR performance.

In the following section, we attempt to elucidate how CEO tenure affects CSR performance, as suggested by the two hypotheses. The career concern hypothesis suggests that CEOs' incentives to signal their performance are driven mainly by the demand to mitigate career concerns. One of a firm's most important monitoring mechanisms is the board, which is a firm's apex of authority and also disciplines CEOs

⁸ CEO age and tenure capture different incentives and represent different constructs. In our sample, we show that the correlation coefficient of these two constructs is approximately 0.3, suggesting a significant difference between them.

(Fama, 1980; Hermalin & Weisbach, 1998).⁹ As independent boards are more likely to dismiss CEOs with unsatisfactory performance (e.g., Hermalin & Weisbach, 1998), CEOs' incentives to mitigate career concerns in the early years of their service should increase with more independent boards. Consequently, we argue that board independence exacerbates career concern problems; thus, newly appointed CEOs' incentives to signal through CSR are stronger in these firms. Note that the results based on board independence may not necessarily support the career horizon hypothesis because the CEOs who expect a short employment period, e.g., those who are close to retirement, may not have incentives to actively engage in CSR, even if they are facing the same pressures from independent directors.

The career horizon hypothesis suggests that CEOs who have held their positions longer have stronger incentives to assume investment in such areas as CSR in the early stage of their tenure than those who have held their positions for less time. We examine this hypothesis by comparing the relationship between CEO tenure and CSR performance in two groups of CEOs with different lengths of employment. We use the actual employment period as a proxy for the expected horizon. In accordance with the career horizon hypothesis, we predict that the association between CEO tenure and CSR performance is stronger for CEOs with an *expected* longer employment period than those with a shorter horizon.

Our second and third hypotheses are as follows:

Hypothesis 2. The negative relationship between CEO tenure and CSR performance is stronger for firms with a larger proportion of independent directors.

Hypothesis 3. The negative relationship between CEO tenure and CSR performance is stronger for CEOs with a longer employment period than for those with a shorter employment period.

3. Sample, key variables, and empirical model

3.1. Sample

We construct our sample by merging several datasets. We extract the CEO information from the Compustat ExecuComp database (which includes the top executives¹⁰ from the S&P 1500 U.S. firms in each year). We identify the CEOs in the dataset (CEOANN = 1) and define CEO tenure as years after assumption of the CEO title. We then merge the sample of executive data with corporate social ratings data from the KLD database. We acquire firm board data from RiskMetrics. The accounting data are extracted from Compustat, and the financial analyst data are from I/B/E/S. We require that all of the variables specified in our empirical model be available in these datasets. These procedures generate 11,012 firm-year observations for the period from 1999 to 2013.

3.2. Measure of CSR performance (CSR_P)

Many studies have used the CSR ratings provided by KLD because of its methodological merit.¹¹ Following such studies, we measure CSR_P based on corporate social ratings data from KLD. KLD assigns strengths (positive ratings coded 1, and 0 otherwise) and concerns (negative ratings coded 1, and 0 otherwise) to firms on various dimensions of

⁹ Other parties, such as financial analysts, can also monitor CEOs. However, these analysts cannot directly punish CEOs who exhibit unsatisfactory performance.

¹⁰ The dataset normally records the compensation for the firm's five top executives for each year. In certain rare cases, the database provides compensation data for a maximum of nine executives.

¹¹ For example, Waddock (2003) contends that KLD is “the de facto research standard at the moment” for CSR research (Waddock, 2003, p. 369).

CSR, according to predetermined criteria. KLD initially covered S&P 500 firms and expanded to the S&P 1500 in 2002. In accordance with prior studies (e.g., Chatterji, Levine, & Toffel, 2009; Kim, Li, & Li, 2014; Tang et al., 2015), we measure firm CSR performance based on the following five CSR dimensions: community, diversity, employee relations, environment, and product. In our study, a firm's CSR performance is then defined as an aggregated score by summing the strengths and subtracting the sum of the concerns (e.g., Hubbard et al., 2017; Tang et al., 2015).

3.3. CEO tenure measure

We measure CEO tenure as the natural logarithm of the number of years of a CEO's service (*LNTENURE*). As the first year that a CEO assumes the position is coded 1, the value of *LNTENURE* is equal to or larger than 0.

3.4. Main empirical model

To investigate the effect of CEO tenure on CSR performance (**H1**), we estimate the following regression model:

$$CSR_{P_{i,t}} = \alpha + \beta LNTENURE_{i,t-1} + \gamma CEO_Controls_{i,t-1} + \phi Firm_Controls_{i,t-1} + Industry_FE + Year_FE + \varepsilon_{i,t} \quad (1)$$

To examine the incremental effect of *LNTENURE*, we control for several determinants of CSR performance that have been specified in the literature. The first set of determinants of CSR_P includes CEO incentives and characteristics variables. Studies (e.g., Deckop et al., 2006; McGuire et al., 2003) have suggested that CSR is subject to managers' discretion; thus, the CEO's compensation incentive affects the level of CSR. CEOs with higher proportions of variable income (*CEOVARPAY*), such as bonuses, stocks, and options, have strong incentives to boost short-term performance by reducing CSR investments (McGuire et al., 2003), which implies a negative relationship between *CEOVARPAY* and CSR performance. We control for CEO age because younger CEOs have stronger incentives to invest in CSR than do older ones (Oh et al., 2014). McGuire et al. (2003) argue that CEOs with a greater financial stake in the firm are likely to care more about financial performance than about stakeholders' interests. We include CEO ownership (*CEOOWN*) in the regression model and expect a negative relationship between CEO ownership and CSR performance.

We control for a set of governance mechanisms in our model. We control for the number of analysts following the firm with *LOGCOVERAGE* because as a monitoring party, financial analysts could exert pressure on firms to engage in CSR (Adhikari, 2016). As outside directors are delegates of various stakeholders and are keen to meet stakeholders' expectations, firms with more independent directors should have better CSR performance (Zhang, Zhu, & Ding, 2013). As institutional investors have a significant effect on firm CSR performance (Harjoto, Jo, & Kim, 2015), we add the percentage of institutional ownership (*INSTOWN*) as a control variable in our empirical model.

We also include several firm characteristics in our model. We expect that firms with larger size (*SIZE*) and better prospects, including higher profitability (*ROA*), higher market-to-book ratios (*MB*), and greater sales growth (*SALEGROW*), are more likely to invest in CSR because they tend to have ample resources to support CSR. As a firm with idle financial resources is better able to afford CSR, we expect a negative association between firm leverage (*LEV*) and CSR, and similarly, we expect firms with more cash (*CASH*) to be more likely to invest in CSR. Furthermore, we control for CSR-related expenditures, such as R&D levels (*R&D*), and we expect a positive relationship between *R&D* and CSR_P. As the opportunities and risks associated with CSR vary with the industry, we control for firms' industry memberships based on two-digit SIC industry classifications. To control for time-series variation, we include year-fixed effects in the empirical model. Detailed definitions of

statistics are consistent with the notion that our sample includes more mature firms.

We present the correlation matrix in Table 2. As shown in Table 2, the correlation coefficient between *LNTENURE* and *CSR* is -0.0671 with less than 5% significance, supporting our first hypothesis. Table 2 also shows that CSR performance is significantly positively associated with board independence (*INDBOARD*), firm size (*SIZE*), profitability (*ROA*), and *MB*. Firms whose CEOs have a larger proportion of variable pay in their compensation package (*CEOVARPAY*) have better CSR performance. Conversely, older CEOs (*CEOAGE*) and CEOs with larger financial stakes in their firms (*CEOOWN*) are less likely to actively engage in CSR. In an untabulated test, we find that all of the independent variables have VIF scores less than 10,¹² suggesting that multicollinearity is less likely to be an issue in our study.

4.2. Main results

Panel A of Table 3, Column (1) reports the regression results of Eq. (1), which examines the effect of CEO tenure on firms' CSR performance. The coefficient of *LNTENURE* is significantly negative (-0.083 with t-value of -2.74), suggesting that a firm's CSR performance is negatively associated with CEO tenure. This finding supports the notion that a firm's CSR performance is greater in the early years of CEO tenure and lower in later years, which is consistent with our hypothesis H1.

The coefficient of *CEOAGE* is negative but not significant, consistent with the results in Oh et al. (2014). This result also confirms that CEO age and tenure are different constructs. The other coefficients of control variables are generally consistent with prior studies. For example, CSR performance is higher in larger and more profitable firms and in firms with more independent boards, resulting in greater analysis and more R&D investment.

To further elucidate our findings, we estimate Eq. (1) after replacing *LNTENURE* with indicator variables for each of the first five years of the CEO's tenure (Ali & Zhang, 2015), i.e., *YEARONE*, *YEARTWO*, *YEARTHREE*, *YEARFOUR*, and *YEARFIVE*, which equal one if the observation is for the first, second, third, fourth, and fifth years of the CEO's tenure, respectively, and zero otherwise. As shown in Table 3, Panel A, Column (2), the coefficients of *YEARTWO* and *YEARTHREE* are significantly positive (0.169 with a t-value of 2.08, and 0.147 with a t-value of 1.78, respectively), suggesting that a firm's CSR performance peaks in the second and third years, in contrast to the later years of a CEO's tenure. In addition, the coefficient of *YEARONE* is positive but marginally significant¹³ (0.138 with t-value of 1.41). In contrast, the coefficients of *YEARFOUR* and *YEARFIVE* are insignificant. Collectively, the regression results show that CSR performance peaks in the first three years of a CEO's tenure; subsequently, the performance decreases with the CEO's tenure.

4.3. Endogeneity test

The results thus far may be subject to endogeneity concerns because some omitted correlated variables such as past financial performance may affect CSR performance and CEO career simultaneously.¹⁴ To address this issue, we use the following two approaches.

The first approach is to include more control variables, including financial performance (*ROA_Avg*), firm size (*SIZE_Avg*), firm leverage (*LEV_Avg*), market to book ratio (*MB_Avg*), and R&D (*RD_Avg*) over the previous three years. The inclusion of these additional control variables averaged over the past three years helps mitigate the omitted correlated

variables that may affect CSR performance and CEO tenure simultaneously. We run the regression based on the reduced sample.¹⁵ As shown in Panel B of Table 3, our main findings remain unchanged after controlling for these variables.

In addition, we also use an instrument variable (IV) approach to address the endogeneity issue. In the first stage regression, we use the industry average of CEO tenure in the previous year (*LNTENURE_IndAvg*) as an instrumental variable, which could affect a firm's CEO tenure, but is unlikely to be associated with a firm's CSR performance. In the second stage regression, we use the predicted *LNTENURE* (*LNTENURE_Predict*) derived from the first-stage regression to examine its effect on *CSR*. The results of the regressions are reported in Panel C of Table 3. The coefficient on *LNTENURE_Predict* is significantly negative (-0.573 with a t-value of -2.82), indicating that the relationship between CSR performance and CEO tenure holds after controlling for endogeneity based on a 2SLS approach. However, regardless of our effort to address the endogeneity problem, we caution against assuming that this issue has been fully resolved by using these two methods.

4.4. Time trend

As our sample spans 14 years, it is worth examining whether CEOs have engaged more actively in CSR in response to the increasing importance of CSR in the business world. To check the time trend, we re-examine Eq. (1) by comparing an earlier sub-sample from 1999 to 2005 and a more recent sub-sample from 2006 to 2013.¹⁶ The results of the sub-sample analyses are shown in Table 4. Although columns (1) and (2) show that the coefficients of *LNTENURE* are both significantly negative for an earlier and a more recent sample period (-0.089 with t-value of -1.99 and -0.101 with t-value of -2.59 , respectively), the relationship between CEO tenure and a firm's CSR performance is more pronounced in recent years, which indicates CEOs' increasing tendency to use CSR for either signaling or investment purposes early in their tenure.

4.5. The effect of career concern

To test hypothesis H2, we re-examine Eq. (1) by interacting *LNTENURE* with *INDBOARD*. As shown in column (1) of Table 5, the coefficient of *LNTENURE*INDBOARD* is significantly negative (-0.493 with a t-value of -2.77), indicating that a more independent board enhances the association between CEO tenure and CSR performance, consistent with the career concern hypothesis. Note that the coefficient of *LNTENURE* is positive. Nevertheless, the net effect remains negative.¹⁷ The result also suggests that early-tenure CEOs may not actively engage in CSR when few outside directors sit on the board.

4.6. The effect of CEOs' horizon

To test hypothesis H3, we re-examine Eq. (1) by interacting *LNTENURE* with *HorizonDummy*, where *HorizonDummy* is an indicator variable that equals one if the CEO's maximum tenure is larger than that of the industry median, and zero otherwise. The coefficient of *LNTENURE*HorizonDummy* is significantly negative (coefficient of -0.160 with t-value of -2.08), as shown in Table 6. The results lend support to hypothesis H3 and suggest that CEOs are likely to invest in CSR in the early years of their tenure; thus, they can reap the benefits of those investments later in their tenure.

¹² We find that the VIF scores range from 1.206 to 2.727, suggesting that multicollinearity is less likely to be an issue in our study.

¹³ Studies suggest that CEOs may not be able to exert their influence on CSR in the first year of their tenure (Chin et al., 2013).

¹⁴ We thank one anonymous reviewer for making this important point.

¹⁵ Our sample reduces significantly after including the control variables, which is also why we do not use the augmented model in the main result.

¹⁶ We split our sample into two periods of an equal number of years.

¹⁷ The coefficient of *LNTENURE* is 0.275 and that of *LNTENURE*INDBOARD* is -0.493 . As the mean of *INDBOARD* is 0.737, the net effect is -0.088 ($-0.493 * 0.737 + 0.275$).

4.7. The consequences of CSR engagement in early tenure

Our results so far suggest a significantly negative association between CEO tenure and CSR performance. An interesting yet unexplored question is whether CEOs could benefit from their CSR investment early in their tenure. In other words, we ask whether investing in CSR early in their tenure could successfully mitigate CEOs' career concerns and therefore lower the probability of their dismissal later in their tenure. We use the following specification to examine this question:

$$\begin{aligned}
 Prob(Dismissal)_{i,t} = & \alpha + \beta CSRPEarlyTenure_i \\
 & + \gamma ROA(earlytenure)_i + \varphi Firm_Controls_{i,t} \\
 & + Industry_FE + Year_FE + \epsilon_{i,t}
 \end{aligned}
 \tag{2}$$

We use the probability of compulsory dismissal (*Dismissal*) as the dependent variable, in accordance with Chiu and Sharfman (2016). Our independent variable of interest is *CSRPEarlyTenure*, which is equal to the average CSR performance over the first three years of their tenure. We also include the financial variable averaged over the first three years (i.e., *ROA(earlytenure)*) as controls in the model because financial performance is an important evaluation criterion. The other control variables in Eq. (1) are also included. We report the results in Table 7.

As shown in Table 7, the coefficient of *CSRPEarlyTenure* is negative at a significance level of less than 1%, suggesting that CEOs' commitment to CSR early in their tenure could reduce the probability of their dismissal. This result therefore extends prior studies (e.g., Oh et al., 2014) and shows that engagement in CSR early in their tenure could allow CEOs to mitigate career concerns.

4.8. Robustness tests

To supplement our main findings and mitigate the measurement error problem, we also perform tests using alternative measures of CSR performance. Our *CSRPEarlyTenure* measure is the summation of five dimensions of CSR indicators, without considering the weight of each CSR dimension. In an additional test, we use an aggregate measure of *CSRPEarlyTenure* that is based on seven dimensions¹⁸ of the CSR measure and find that our results hold. To gauge the weight problem, in accordance with Deng, Kang, and Low (2013), we calculate the equal-weight CSR performance and use this measure as our alternative *CSRPEarlyTenure* measure. The results based on Deng et al. (2013) hold, suggesting that our inference is not sensitive to the measurement problem.

Studies have suggested that CEOs may not be able to exert their influence on CSR in the first year of their tenure (Chin et al., 2013). Therefore, our inferences may be biased due to our use of a sample including CEOs in the first year of their tenure. To mitigate this concern, we repeat our analyses based on a reduced sample consisting of CEOs with tenures of more than one year, and the results hold. In addition, we report t-values based on standard errors that are adjusted by clustering at the firm and year levels (Petersen, 2009), and we find that our results are quantitatively similar.

To provide further evidence regarding how long CEOs actively engage in CSR in their early careers, we create an array of thresholds, ranging from the first three years of tenure to the first six years, as early tenure is normally defined as the first six years in the literature (Ali & Zhang, 2015; Pan et al., 2016). We replace our variable of interest with early tenure dummies using different thresholds in the main empirical model, and the results are qualitatively similar to our main findings.

Table 3
CEO tenure and CSR performance.

Panel A: The effect of CEO tenure on CSR performance				
Dep. Var. = <i>CSRPEarlyTenure</i>	(1)		(2)	
	Coefficient	t-statistic	Coefficient	t-statistic
<i>Intercept</i>	-4.798***	-3.94	-2.561***	-7.30
<i>LNTENURE</i> _{t-1}	-0.083***	-2.74		
<i>YEARONE</i> _{t-1}			0.138	1.41
<i>YEARTWO</i> _{t-1}			0.169**	2.08
<i>YEARTHREE</i> _{t-1}			0.147*	1.78
<i>YEARFOUR</i> _{t-1}			0.093	1.11
<i>YEARFIVE</i> _{t-1}			0.112	1.32
<i>INDBOARD</i> _{t-1}	1.077***	5.90	0.754***	4.16
<i>CEOAGE</i> _{t-1}	-0.005	-1.43	-0.006	-1.63
<i>CEOOWN</i> _{t-1}	-0.020***	-3.31	-0.011*	-1.85
<i>CEOVARPAY</i> _{t-1}	-0.214	-1.63	0.019	0.15
<i>INSTOWN</i> _{t-1}	-1.050***	-7.64	-1.192***	-8.99
<i>LOGCOVERAGE</i> _{t-1}	0.220***	3.96	0.407***	8.07
<i>CASH</i> _{t-1}	0.312	1.26	0.232	0.96
<i>LEV</i> _{t-1}	0.553***	3.94	-0.210	-1.41
<i>MB</i> _{t-1}	-0.007	-0.92	0.062***	8.15
<i>R & D</i> _{t-1}	6.772***	11.77	9.667***	18.54
<i>ROA</i> _{t-1}	2.163***	6.20	4.399***	12.67
<i>SALEGROW</i> _{t-1}	-0.857***	-7.24	-1.136***	-9.39
<i>SIZE</i> _{t-1}	0.561***	21.11	0.382***	15.20
<i>Industry-fixed effect</i>	Included		Included	
<i>Year-fixed effect</i>	Included		Included	
N	11,012		11,012	
Adj. R-Square	0.255		0.260	

Panel B: Endogeneity issue: inclusion of additional control variables		
Dep. var. = <i>CSRPEarlyTenure</i>	Coefficient	t-statistic
<i>Intercept</i>	-3.005***	-5.11
<i>LNTENURE</i> _{t-1}	-0.109***	-3.16
<i>INDBOARD</i> _{t-1}	1.204***	5.54
<i>CEOAGE</i> _{t-1}	-0.007*	-1.77
<i>CEOOWN</i> _{t-1}	-0.020***	-2.74
<i>CEOVARPAY</i> _{t-1}	-0.609***	-3.91
<i>INSTOWN</i> _{t-1}	-1.181***	-7.33
<i>LOGCOVERAGE</i> _{t-1}	0.091	1.37
<i>CASH</i> _{t-1}	0.985***	3.25
<i>LEV</i> _{t-1}	0.591*	1.91
<i>MB</i> _{t-1}	0.001	0.10
<i>R & D</i> _{t-1}	-5.217*	-1.75
<i>ROA</i> _{t-1}	0.907*	1.70
<i>SALEGROW</i> _{t-1}	-0.875***	-4.78
<i>SIZE</i> _{t-1}	0.058	0.53
<i>LEV_Avg</i>	-0.477	-1.39
<i>MB_Avg</i>	-0.006	-0.50
<i>RD_Avg</i>	13.129***	4.41
<i>ROA_Avg</i>	0.182	0.37
<i>SIZE_Avg</i>	0.669***	6.02
<i>Industry-fixed effect</i>	Included	
<i>Year-fixed effect</i>	Included	
N	8406	
Adj. R-Square	0.283	

Panel C: Endogeneity issue: 2SLS approach				
Dep. Var.	(1)		(2)	
	First-stage		Second-stage	
	= <i>LNTENURE</i> _{t-1}		= <i>CSRPEarlyTenure</i>	
	Coefficient	t-statistic	Coefficient	t-statistic
<i>Intercept</i>	0.775***	9.41	-0.928*	-1.68
<i>LNTENURE_Predict</i>			-0.573***	-2.82
<i>LNTENURE_IndAvg</i> _{t-1}	0.575***	13.81		
<i>INDBOARD</i> _{t-1}			1.043***	4.71

(continued on next page)

¹⁸ The additional two dimensions are human rights and corporate governance.

Table 3 (continued)

Panel C: Endogeneity issue: 2SLS approach				
Dep. Var.	(1)		(2)	
	First-stage		Second-stage	
	$= LNTENURE_{t-1}$		$= CSR_{t-1}$	
	Coefficient	t-statistic	Coefficient	t-statistic
$CEOAGE_{t-1}$			-0.013***	-3.15
$CEOOWN_{t-1}$			-0.025***	-3.60
$CEOVAPAY_{t-1}$			-0.347**	-2.21
$INSTOWN_{t-1}$			-1.551***	-9.57
$LOGCOVERAGE_{t-1}$			0.447***	7.68
$CASH_{t-1}$			-0.057	-0.19
LEV_{t-1}			0.089	0.47
MB_{t-1}			0.042***	3.93
$R \& D_{t-1}$			9.702***	13.00
ROA_{t-1}			2.177***	5.07
$SALEGROW_{t-1}$			-0.943***	-5.28
$SIZE_{t-1}$			0.512***	18.89
Industry-fixed effect	Included		Included	
Year-fixed effect	Included		Included	
N	8406		8406	
Adj. R-Square	0.047		0.251	

Note: Panel A presents the regression results on the effect of CEO tenure on CSR performance. Panel B shows the regression results of model (1) including firm-level characteristics averaged over the previous three years. Panel C presents the IV approach to address potential endogeneity issues in Panel A. Column (1) of Panel C reports the first-stage regression result and Column (2) presents the regression results using predicted CEO tenure based on first-stage regression as the independent variable of interest. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels or better, respectively. The definitions and measurements of all of the variables are provided in Appendix I.

Table 4

CEO tenure and CSR performance: time trend.

Dep. Var. = CSR_{t-1}	(1)		(2)	
	Sample from 1999 to 2005		Sample from 2006 to 2013	
	Coefficient	t-statistic	Coefficient	t-statistic
Intercept	-1.853	-0.91	-7.616***	-4.33
$LNTENURE_{t-1}$	-0.089**	-1.99	-0.101***	-2.59
$INDBOARD_{t-1}$	0.573**	2.52	1.638***	6.16
$CEOAGE_{t-1}$	-0.006	-1.05	-0.003	-0.58
$CEOOWN_{t-1}$	0.007	0.88	-0.033***	-4.33
$CEOVAPAY_{t-1}$	0.445**	2.52	-0.728***	-4.05
$INSTOWN_{t-1}$	-0.853***	-4.25	-1.079***	-6.07
$LOGCOVERAGE_{t-1}$	0.097	1.20	0.371***	5.09
$CASH_{t-1}$	0.662	1.55	0.309	1.03
LEV_{t-1}	-0.064	-0.31	0.783***	4.25
MB_{t-1}	0.011	1.27	-0.004	-0.30
$R \& D_{t-1}$	5.538***	6.30	7.065***	9.72
ROA_{t-1}	3.871***	7.54	0.758	1.64
$SALEGROW_{t-1}$	-0.645***	-4.47	-0.940***	-5.38
$SIZE_{t-1}$	0.190***	4.80	0.717***	20.89
Industry-fixed effect	Included		Included	
Year-fixed effect	Included		Included	
N	3676		7336	
Adj. R-Square	0.223		0.303	

Note: This table presents the results for the effect of CEO tenure on CSR performance in two different periods. We report the regression results based on Eq. (1) in the sample in the early period (column 1) and recent period (column 2), respectively. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels or better, respectively. The definitions and measurements of all of the variables are provided in Appendix I.

Table 5

CEO tenure and CSR performance: the effect of career concern.

Dep. Var. = CSR_{t-1}	Coefficient	t-statistic
Intercept	-2.751***	-3.86
$LNTENURE_{t-1}$	0.275**	2.07
$LNTENURE_{t-1} * INDBOARD_{t-1}$	-0.493***	-2.77
$INDBOARD_{t-1}$	1.952***	5.35
$CEOAGE_{t-1}$	-0.006	-1.63
$CEOOWN_{t-1}$	-0.022***	-3.73
$CEOVAPAY_{t-1}$	-0.202	-1.53
$INSTOWN_{t-1}$	-1.060***	-7.71
$LOGCOVERAGE_{t-1}$	0.226***	4.07
$CASH_{t-1}$	0.312	1.26
LEV_{t-1}	0.547***	3.91
MB_{t-1}	-0.007	-0.89
$R \& D_{t-1}$	6.755***	11.74
ROA_{t-1}	2.168***	6.22
$SALEGROW_{t-1}$	-0.846***	-7.15
$SIZE_{t-1}$	0.558***	21.00
Industry-fixed effect	Included	
Year-fixed effect	Included	
N	11,012	
Adj. R-Square	0.255	

Note: This table presents the regression results for whether CEO career concern affects the effect of CEO tenure on CSR performance. We report the regression results based on Eq. (1) by interacting CEO tenure with board independence. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels or better, respectively. The definitions and measurements of all of the variables are provided in Appendix I.

Table 6

CEO tenure and CSR performance: the effect of horizon.

Dep. Var. = CSR_{t-1}	Coefficient	t-statistic
Intercept	-2.821***	-5.52
$LNTENURE_{t-1}$	-0.003	-0.06
$LNTENURE_{t-1} * HorizonDummy_{t-1}$	-0.160**	-2.08
$HorizonDummy_{t-1}$	0.173	1.39
$INDBOARD_{t-1}$	1.283***	7.18
$CEOAGE_{t-1}$	-0.005	-1.08
$CEOOWN_{t-1}$	-0.017***	-2.95
$CEOVAPAY_{t-1}$	-0.336***	-2.69
$INSTOWN_{t-1}$	-1.166***	-8.63
$LOGCOVERAGE_{t-1}$	0.191***	3.59
$CASH_{t-1}$	0.299	1.21
LEV_{t-1}	0.409***	3.03
MB_{t-1}	-0.006	-0.86
$R \& D_{t-1}$	7.180***	11.76
ROA_{t-1}	1.689***	4.95
$SALEGROW_{t-1}$	-0.856***	-7.27
$SIZE_{t-1}$	0.627***	21.05
Industry-fixed effect	Included	
Year-fixed effect	Included	
N	11,012	
Adj. R-Square	0.255	

Note: The table presents the regression results on whether CEO horizon affects the effect of CEO tenure on CSR performance. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels or better, respectively. The definitions and measurements of all of the variables are provided in Appendix I.

5. Discussion and conclusion

CEOs' two distinct incentives vary at different stages of their tenure. CEOs have a strong need to signal their ability early in their tenure and a lower signaling need later in their tenure. Similarly, CEOs have strong incentives to undertake more investment early in their tenure, as they can reap the benefits later in their tenure. In this study, we examine whether these two incentives arising from CEOs' tenure affect firms' CSR performance.

Table 7
CSR performance and CEO dismissal.

Dep. Var. = $Prob(Dismissal = 1)_t$	Coefficient	z-statistic
<i>Intercept</i>	12.483***	9.39
<i>CSR_P (early tenure)</i>	−0.095**	−4.15
<i>ROA (early tenure)</i>	−0.282*	−1.71
<i>LNTENURE_t</i>	0.034	0.47
<i>INDBOARD_t</i>	−1.364***	−3.12
<i>CEOAGE_t</i>	−0.097***	−9.83
<i>CEOOWN_t</i>	0.207***	4.33
<i>CEOVARPAY_t</i>	−0.256	−0.76
<i>INSTOWN_t</i>	−0.517	−1.57
<i>LOGCOVERAGE_t</i>	−0.030	−0.18
<i>CASH_t</i>	0.175	0.24
<i>LEV_t</i>	−0.739*	−1.93
<i>MB_t</i>	0.007	1.37
<i>R & D_t</i>	1.295	0.82
<i>ROA_t</i>	0.632**	2.18
<i>SALEGROW_t</i>	−0.020	−0.36
<i>Industry-fixed effect</i>	Included	
<i>Year-fixed effect</i>	Included	
N	8428	
Pseudo R-Square	0.193	

Note: The table presents the results for the effect CSR performance (in early tenure) on the likelihood of subsequent CEO dismissal. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels or better, respectively. The definitions and measurements of all of the variables are provided in Appendix I.

Using a sample of U.S. firms for the 1999–2013 period, we find that firms' CSR performance is significantly higher in CEOs' early tenure than in their later tenure. We show that this trend is more significant in recent years, as the market has increasingly recognized the importance of CSR for value creation and thus has considered CSR to be a performance evaluation criterion. Further analyses show that the negative association between CEO tenure and CSR performance is more pronounced when CEOs have a longer expected tenure, supporting the career horizon hypothesis. Our results also reveal that CEOs' CSR performance early in their tenure is better in the presence of a more independent board, which is consistent with the signaling interpretation of the career concern hypothesis. Finally, we confirm that engagement in CSR early in their tenure could be an appropriate strategy for CEOs to mitigate career concerns, as we show a negative association between early tenure CSR performance and CEO dismissal probability.

Our study contributes to the literature and provides important implications for management. First, our study extends prior studies and adds CEO tenure as an important determinant of CSR. Prior studies based on upper echelon theory have shown that CEOs' characteristics affect firms' CSR performance (e.g., Chin et al., 2013; Deckop et al., 2006; Di Giuli & Kostovetsky, 2014; McCarthy et al., 2017; McGuire et al., 2003; Tang et al., 2015). Another related study examines the effect of CEO age on CSR performance, showing that this relation is not significant and should be contingent on industry and monitoring mechanisms (Oh et al., 2014). Our study extends this research stream and highlights the effect of CEO tenure on CSR performance. Additionally, our study enriches the literature by showing that CEOs commit to CSR in their early tenure to mitigate career concerns and investment problems. More importantly, our study advances this line of inquiry by showing that commitment to CSR early in their tenure could be an

effective strategy for CEOs to mitigate career concerns.

Second, our study deepens our understanding of CEOs' CSR decisions when facing career concerns. How career concerns influence CEOs' decision-making has become an interesting and important question as CEOs affect several dimensions of firm outputs. To signal their ability, CEOs are likely to inflate earnings (Ali & Zhang, 2015) because financial performance is an important criterion for assessing their ability. In recent years, many U.S. firms have added CSR performance as another important evaluation criterion, as is reflected in CEO compensation contracts (Hong et al., 2016). An important yet unexplored area is whether CEOs mitigate career concerns using CSR performance. Our study complements Ali and Zhang (2015) and shows that CEOs may promote CSR as a means to signal their ability, enriching the career concern literature and providing implications for CEO compensation design. Our study also complements and extends Chiu and Sharfman (2016), Hong et al. (2016), and Hubbard et al. (2017) because it demonstrates the role of CSR in the CEO performance evaluation process. Future research can extend our study by examining how CEOs use CSR to signal their ability in other circumstances.

Our study also provides several managerial implications for practitioners. With increasing relevance of CSR to firm financial performance, both boards of directors and the market have considered how to motivate CEOs to engage in CSR actively. In line with such trend, many firms have taken several measures such as explicitly including CSR performance into CEO performance evaluation process. Against the backdrop, our study highlights CEO tenure as an important factor that could affect firm CSR performance, suggesting that the boards of directors can use tenure-related incentives to motivate CEOs to commit to CSR activities. Our study could also be of interest to external parties such as CSR rating agencies and socially responsible investment funds. These parties have keen interest in understanding, assessing, and predicting firms' CSR performance in order to make informed decisions. Our study together with the emerging studies based on the upper echelon theory of CSR suggests that CEO characteristics are important factors that influence firm CSR performance, and therefore could benefit these parties by improving their respective decision performance.

As with other CSR studies, this study is subject to certain common limitations. The primary limitation is the potential measurement error for CSR performance. Our CSR performance measure based on KLD aligns with prior studies (e.g., Chin et al., 2013; Tang et al., 2015). Despite the popularity of this measure of CSR performance, its reliability remains controversial (e.g., Chatterji, Durand, Levine, & Touboul, 2016). Second, our inferences are based on U.S. firms, and therefore, our findings may not be generalized to other countries. We encourage future research to overcome these limitations by examining this issue in other countries.

Compliance with ethical standards

The authors declare that they have no conflicts of interest in this study.

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Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.

Appendix I. Variable definitions

Variables	Definitions
Dep. Var.	
$CSR P_t$	CSR performance in year t, equal to the total strengths minus the total concerns in the five CSR dimensions in KLD, i.e., community, diversity, employee relations, environment, and product. Following Tang et al. (2015) and Hubbard et al. (2017), $CSR P$ is defined as an aggregated score by summing the strengths and subtracting the sum of the concerns.
$Prob(Dismissal = 1)_t$	The probability that the CEO was fired on a compulsory basis in year t.
Ind. Var.	
$CASH_{t-1}$	Cash holding in year t-1, equal to the ratio of cash to total assets.
$CEOAGE_{t-1}$	CEO age in year t-1.
$CEOOWN_{t-1}$	CEO ownership (in percentage) in year t-1, calculated as the shares held by the CEO divided by total shares outstanding.
$CEOVARPAY_{t-1}$	CEO variable pay ratio in year t-1, equal to the percentage of variable pay relative to total pay.
$CSR P$ (early tenure)	The average CSR performance over the first three years of CEO's tenure.
$HorizonDummy_{t-1}$	Indicator variable that equals to one if the CEO's maximum tenure is larger than the industry median in year t-1, and zero otherwise.
$INDBOARD_{t-1}$	Board independence, measured as the percentage of independent directors on a board in year t-1. $AVRINDBOARD$ is the mean of $INDBOARD$ of a firm in our sample period.
$INSTOWN_{t-1}$	Institutional ownership in year t-1, calculated as the shares held by institutional investors by total shares outstanding.
LEV_{t-1}	The leverage of a firm in year t-1, which is calculated as the sum of short-term debt and long-term debt, divided by total assets.
LEV_{Avg}	The average of LEV over years t-1, t-2, t-3.
$LNTENURE_{t-1}$	The natural logarithm of CEO's tenure in year t-1.
$LNTENURE_{IndAvg}_{t-1}$	The industry average of CEO tenure in year t-1.
$LOGCOVERAGE_{t-1}$	The natural logarithm of the number of analysts following a firm in year t-1.
MB_{t-1}	Market to book ratio in year t-1, measured by the market valuation of a firm, which is calculated as market capitalization at the fiscal year end, divided by book equity.
MB_{Avg}	The average of MB over years t-1, t-2, t-3.
$R \& D_{t-1}$	The R&D investment level for a firm in year t-1, which is calculated as research and development expenses divided by total assets.
RD_{Avg}	The average of $R\&D$ over years t-1, t-2, t-3.
ROA_{t-1}	Return on assets of a firm in year t-1, which is calculated as the operating income after depreciation divided by total assets.
ROA (early tenure)	The average financial performance (ROA) over the first three years of a CEO's tenure.
ROA_{Avg}	The average of ROA over years t-1, t-2, t-3.
$SALEGROW_{t-1}$	Sales growth in year t-1, which is calculated as the total sales in year t, divided by total sales in year t-1.
$SIZE_{t-1}$	Firm size in year t-1, which is calculated as the natural logarithm of the market value of the firm.
$SIZE_{Avg}$	The average of $SIZE$ over years t-1, t-2, t-3.
$YEARFIVE_{t-1}$	Indicator variable that equals one if the observation is for the fifth year of the CEO's service in year t-1, and zero otherwise.
$YEARFOUR_{t-1}$	Indicator variable that equals one if the observation is for the fourth year of the CEO's service in year t-1, and zero otherwise.
$YEARTHREE_{t-1}$	Indicator variable that equals one if the observation is for the third year of the CEO's service in year t-1, and zero otherwise.
$YEARTWO_{t-1}$	Indicator variable that equals one if the observation is for the second year of the CEO's service in year t-1, and zero otherwise.
$YEARONE_{t-1}$	Indicator variable that equals one if the observation is for the first year of the CEO's service in year t-1, and is zero otherwise.

References

- Adhikari, B. K. (2016). Causal effect of analyst following on corporate social responsibility. *Journal of Corporate Finance*, 41, 201–216.
- Ali, A., & Zhang, W. (2015). CEO tenure and earnings management. *Journal of Accounting and Economics*, 59, 60–79.
- Bénabou, R., & Tirole, J. (2010). Individual and corporate social responsibility. *Economica*, 77, 1–19.
- Bhardwaj, P., Chatterjee, P., Demir, K. D., & Turut, O. (2018). When and how is corporate social responsibility profitable? *Journal of Business Research*, 84, 206–219.
- Bhattacharya, S. (1979). Imperfect information, dividend policy and the 'bird in the hand' fallacy. *Bell Journal of Economics*, 10, 259–270.
- Borghesi, R., Houston, J. F., & Naranjo, A. (2014). Corporate socially responsible investments: CEO altruism, reputation, and shareholder interests. *Journal of Corporate Finance*, 26, 164–181.
- Cahan, S. F., Chen, C., Chen, L., & Nguyen, N. H. (2015). Corporate social responsibility and media coverage. *Journal of Banking and Finance*, 59, 409–422.
- Carpenter, M. A., Geletkanycz, M. A., & Sanders, W. G. (2004). Upper echelons research revisited: Antecedents, elements, and consequences of top management team composition. *Journal of Management*, 30, 749–778.
- Carroll, A. B. (1979). A three-dimensional conceptual model of corporate performance. *Academy of Management Review*, 4, 497–505.
- Chatterji, A. K., Durand, R., Levine, D. I., & Touboul, S. (2016). Do ratings of firms converge? Implications for managers, investors and strategy researchers. *Strategic Management Journal*, 37, 1597–1614.
- Chatterji, A. K., Levine, D. I., & Toffel, M. W. (2009). How well do social ratings actually measure corporate social responsibility? *Journal of Economics and Management Strategy*, 18, 125–169.
- Cheng, B., Ioannou, I., & Serafeim, G. (2014). Corporate social responsibility and access to finance. *Strategic Management Journal*, 35, 1–23.
- Chin, M. K., Hambrick, D. C., & Treviño, L. K. (2013). Political ideologies of CEOs: The influence of executives' values on corporate social responsibility. *Administrative Science Quarterly*, 58, 197–232.

- Chiu, S. C., & Sharfman, M. (2016). Corporate social irresponsibility and executive succession: An empirical examination. *Journal of Business Ethics*, *17*, 1–17.
- Cochran, P. L., & Wood, R. A. (1984). Corporate social responsibility and financial performance. *Academy of Management Journal*, *27*, 42–56.
- Deckop, J. R., Merriman, K. K., & Gupta, S. (2006). The effects of CEO pay structure on corporate social performance. *Journal of Management*, *32*, 329–342.
- Deng, X., Kang, J. K., & Low, B. S. (2013). Corporate social responsibility and stakeholder value maximization: Evidence from mergers. *Journal of Financial Economics*, *110*, 87–109.
- Di Giuli, A., & Kostovetsky, L. (2014). Are red or blue companies more likely to go green? Politics and corporate social responsibility. *Journal of Financial Economics*, *111*, 158–180.
- Donaldson, T. (1999). Making stakeholder theory whole. *Academy of Management Review*, *24*, 237–241.
- El Ghoul, S., Guedhami, O., Kwok, C. C., & Mishra, D. R. (2011). Does corporate social responsibility affect the cost of capital? *Journal of Banking and Finance*, *35*, 2388–2406.
- Fabrizi, M., Mallin, C., & Michelon, G. (2014). The role of CEO's personal incentives in driving corporate social responsibility. *Journal of Business Ethics*, *124*, 311–326.
- Fama, E. F. (1980). Agency problems and the theory of the firm. *Journal of Political Economy*, *88*, 288–307.
- Finkelstein, S., Hambrick, D. C., & Cannella, A. A. (2009). *Strategic leadership: Theory and research on executives, top management teams, and boards*. New York: Oxford University Press.
- Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Boston: Pitman Publishing Inc.
- Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance and Investment*, *5*, 210–233.
- Gibbons, R., & Murphy, K. J. (1992). Optimal incentive contracts in the presence of career concerns: Theory and evidence. *Journal of Political Economy*, *100*, 468–505.
- Goss, A., & Roberts, G. S. (2011). The impact of corporate social responsibility on the cost of bank loans. *Journal of Banking and Finance*, *35*, 1794–1810.
- Graffin, S., Boivie, S., & Carpenter, M. (2013). Examining CEO succession and the role of heuristics in early-stage CEO evaluation. *Strategic Management Journal*, *34*, 383–403.
- Greening, D. W., & Turban, D. B. (2000). Corporate social performance as a competitive advantage in attracting a quality workforce. *Business and Society*, *39*, 254–280.
- Griffin, J. J., & Mahon, J. F. (1997). The corporate social performance and corporate financial performance debate: Twenty-five years of incomparable research. *Business and Society*, *36*, 5–31.
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, *9*, 193–206.
- Harjoto, M., Jo, H., & Kim, Y. (2015). Is institutional ownership related to corporate social responsibility? The nonlinear relation and its implication for stock return volatility. *Journal of Business Ethics*, *127*, 1–33.
- Hartman, L. P., Rubin, R. S., & Dhanda, K. K. (2007). The communication of corporate social responsibility: United States and European Union multinational corporations. *Journal of Business Ethics*, *74*, 373–389.
- Hermalin, B. E., & Weisbach, M. S. (1998). Endogenously chosen boards of directors and their monitoring of the CEO. *American Economic Review*, *88*, 96–118.
- Holmstrom, B. (1982). Moral hazard in teams. *The Bell Journal of Economics*, *13*, 324–340.
- Hong, B., Li, Z., & Minor, D. (2016). Corporate governance and executive compensation for corporate social responsibility. *Journal of Business Ethics*, *136*, 199–213.
- Hubbard, T. D., Christensen, D. M., & Graffin, S. D. (2017). Higher highs and lower lows: The role of corporate social responsibility in CEO dismissal. *Strategic Management Journal*, *38*, 2255–2265.
- Jiraporn, P., Jiraporn, N., Boeprasert, A., & Chang, K. (2014). Does corporate social responsibility (CSR) improve credit ratings? Evidence from geographic identification. *Financial Management*, *43*, 505–531.
- Kim, Y., Li, H., & Li, S. (2014). Corporate social responsibility and stock price crash risk. *Journal of Banking and Finance*, *43*, 1–13.
- King, A., Lenox, M., & Terlaak, A. (2005). The strategic use of decentralized institutions: Exploring certification with the ISO 14001 management standard. *Academy of Management Journal*, *48*, 1091–1106.
- Lys, T., Naughton, J. P., & Wang, C. (2015). Signaling through corporate accountability reporting. *Journal of Accounting and Economics*, *60*, 56–72.
- Mahapatra, S. (1984). Investor reaction to a corporate social accounting. *Journal of Business Finance and Accounting*, *11*, 29–40.
- Maignan, I., Ferrell, O. C., & Hult, G. T. M. (1999). Corporate citizenship: Cultural antecedents and business benefits. *Academy of Marketing Science Journal*, *27*, 455–469.
- McCarthy, S., Oliver, B., & Song, S. (2017). Corporate social responsibility and CEO confidence. *Journal of Banking and Finance*, *75*, 280–291.
- McClelland, P. L., Barker, V. L., & Oh, W. Y. (2012). CEO career horizon and tenure: Future performance implications under different contingencies. *Journal of Business Research*, *65*, 1387–1393.
- McGuire, J., Dow, S., & Arghyey, K. (2003). CEO incentives and corporate social performance. *Journal of Business Ethics*, *45*, 341–359.
- McWilliams, A., & Siegel, D. (2000). Corporate social responsibility and financial performance: Correlation or misspecification. *Strategic Management Journal*, *21*, 603–609.
- McWilliams, A., & Siegel, D. (2001). Corporate social responsibility: A theory of the firm perspective. *Academy of Management Review*, *26*, 117–127.
- Oh, W. Y., Chang, Y. K., & Cheng, Z. (2014). When CEO career horizon problems matter for corporate social responsibility: The moderating roles of industry-level discretion and blockholder ownership. *Journal of Business Ethics*, *133*, 1–13.
- Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate social and financial performance: A meta-analysis. *Organization Studies*, *24*, 403–441.
- Pan, Y., Wang, T. Y., & Weisbach, M. S. (2016). CEO investment cycles. *Review of Financial Studies*, *29*, 2955–2999.
- Petersen, M. A. (2009). Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies*, *22*, 435–480.
- Price, J. M., & Sun, W. (2017). Doing good and doing bad: The impact of corporate social responsibility and irresponsibility on firm performance. *Journal of Business Research*, *80*, 82–97.
- Ross, S. (1977). The determination of financial structure: The incentive-signaling approach. *Bell Journal of Economics*, *1*, 23–40.
- Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics*, *87*(3), 355–374.
- Stiglitz, J. E. (2000). The contributions of the economics of information to twentieth century economics. *The Quarterly Journal of Economics*, *115*(4), 1441–1478.
- Tang, Y., Qian, C., Chen, G., & Shen, R. (2015). How CEO hubris affects corporate social (ir)responsibility. *Strategic Management Journal*, *36*, 1338–1357.
- Waddock, S. (2003). Myths and realities of social investing. *Organization and Environment*, *16*, 369–380.
- Waddock, S. A., & Graves, S. B. (1997). The corporate social performance–financial performance link. *Strategic Management Journal*, *18*, 303–319.
- Walters, B. A., Kroll, M. J., & Wright, P. (2007). CEO tenure, boards of directors, and acquisition performance. *Journal of Business Research*, *60*, 331–338.
- Wang, H., Choi, J., & Li, J. (2008). Too little or too much? Untangling the relationship between corporate philanthropy and firm financial performance. *Organization Science*, *19*, 143–159.
- Wood, D. J. (1991). Corporate social performance revisited. *Academy of Management Review*, *16*, 691–718.
- Zhang, J. Q., Zhu, H., & Ding, H. B. (2013). Board composition and corporate social responsibility: An empirical investigation in the post Sarbanes-Oxley era. *Journal of Business Ethics*, *114*, 381–392.

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