Director Compensation Duration and Corporate Short-Termism*

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ABSTRACT

This study examines the effect of director compensation duration on corporate short-termism. We manually collect data on the vesting periods of equity-based grants awarded to directors, using pay duration to measure director horizon. Exploiting the setting of CEO successions, where directors play a pivotal role in selecting new leaders, we find a negative relationship between pre-turnover director pay duration and the firm's subsequent engagement in real earnings management, our proxy for myopic behavior. Notably, our findings show that directors with longer pay duration tend to appoint CEOs prioritizing long-term objectives and structure CEO compensation packages with a more future focus. Collectively, our results underscore the importance of providing directors with long-term incentives through extended compensation duration, as a potential remedy to corporate short-termism.

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1. Introduction

Corporate decisions that prioritize fleeting gains over sustainable business growth are detrimental to firms' long-term interests and generate negative externalities for the broader market and society (Edmans et al., 2022; Kolasinski and Yang, 2018; Terry, 2023). Among the potential drivers of corporate short-termism, McKinsey's 2014 Survey of 604 C-suite executives and directors highlighted directors' myopic tendencies as a key contributor factor. Notably, 47% of respondents attributed the overemphasis on short-term financial targets at the expense of sustainable goals to pressures from corporate boards, with 74% of surveyed directors "pointing the finger at themselves" (Barton and Wiseman, 2015).[1]

Considering the direct implication of director myopia for corporate short-termism, we examine the impact of director compensation design in mitigating corporate short-termism around CEO successions. We examine director compensation design due to a substantial rise in director compensation, particularly in equity-linked pay, observed over time (Fang and Huang, 2024; Yermack, 2004). This trend has sparked debates in the literature on the appropriate incentives for non-employee directors: on one hand, equity pay may align directors' interest with shareholders' (Fahlenbrach, 2009); one the other hand, evidence also shows that such pay design potentially biases directors toward myopic behavior for short-term benefits (Bebchuk and Fried, 2004; Graham et al., 2005). We add to the discussion by investigating the effects of vesting periods in director equity compensation. Specifically, we focus on CEO successions when directors' influence over corporate decision-making is arguably at its highest point. Moreover, corporate boards' vision can critically shape firm strategic directions through selecting CEOs whose orientations align with the boards' grasp over corporate "strategy, mission and vision" (Abernethy et al., 2019; Tian et al., 2011; Westphal and Fredrickson, 2001).

[1] One recent example of boardroom myopia relates to the Boeing's 737 Max crisis, which may stem from directors prioritizing short-term profits over safety and product quality. (https://www.washingtonpost.com/business/2019/05/06/safety-was-just-given-inside-boeings-boardroom-amid-max-crisis/)

So, the potential effect of boardroom myopia in propagating corporate short-termism is particularly pronounced during CEO turnover, as director myopia may influence CEO appointments, ultimately manifested in corporate policies and subsequent performance.

We propose that by increasing vesting periods of director equity pay, firms can effectively extend directors' decision horizons and address their myopia.[2] With extended vesting periods, directors cannot immediately unwind or sell their unvested equity compensation in the near term, suggesting their limited intention to boost short-term stock prices (Bebchuk and Fried, 2010; Kim and Oh, 2024). Furthermore, longer vesting schedules effectively tie directors' wealth to future stock performance (Ederer and Manso, 2013; Gopalan et al., 2014). We thus expect that longer vesting schedules will curb directors' opportunistic incentives while reinforcing their role in safeguarding long-term shareholder interests. Linking this proposition to the context of CEO selection, we argue that directors' long-term strategic orientations, incentivized by prolonged pay duration, will guide the new CEO's decision-making and directly impact the firm's performance outcomes. That is, we predict that longer-horizon of director compensation is associated with lower extent of corporate short-termism.

To examine our prediction, we analyze how director pay duration immediately prior to CEO turnover affects firms' subsequent engagement in corporate short-termism. We define director pay duration as the value-weighted average of the predetermined vesting periods across various pay components, including cash retainers, restricted stock grants, and stock option awards. This measurement captures the average number of years directors must wait for their compensation to fully vest (Gopalan et al., 2014; Kubick et al., 2024). We further follow the literature and measure corporate short-termism using real earnings management, which indicates firms' manipulation of operational activities, including overproduction and cutting

[2] Director compensation in U.S. firms is typically determined through the compensation committee, and it is subject to overall board of directors' review and amend. Although shareholders do not directly vote on director pay, they exert influence through the approval of equity compensation plans, board election voting, and engagement in shareholder activism and litigation.

discretionary expenditures such as R&D and advertising expenses, to meet short-term earnings targets (Li et al., 2023; Park, 2023; Zang, 2012).

We manually collect data on vesting schedules of director equity grants from the "Director Compensation" section of firm proxy statements and zoom in on 1,733 CEO turnover events between 2006 to 2020. Consistent with our prediction, we find that director pay duration—measured immediately before CEO turnover—is negatively associated with the extent of real earnings management in subsequent years, particularly within firms that just meet or beat analyst forecasts and are thus more likely to engage in real earnings manipulation (Roychowdhury, 2006; Zang, 2012). Specifically, a one-standard-deviation increase in director pay duration is associated with a reduction in real earnings management equal to 3.3% of one standard deviation across all firms. For firms just meeting or beating analyst forecasts, this reduction is even more pronounced, reaching 9.0% of one standard deviation.

We recognize the potential endogeneity in studying the effect of director pay duration. To address this issue, we exploit the unexpected outcome of a shareholder lawsuit – the *Seinfeld v. Slager* (2012) ruling – as a plausible exogenous shock to director pay duration (Chen et al., 2024; Fang and Huang, 2024). Due to increased litigation risks, firms affected by the ruling may choose to extend vesting periods of director equity awards to justify that director pay is "entirely fair". We first demonstrate that under the ruling, directors indeed receive extended vesting schedules. We further show that relative to control firms that are not influenced by the ruling, affected firms are subjected to a significant reduction in real earnings management following CEO turnover after the ruling. We also show that our results remain robust after adopting a propensity-score-matched sample and accounting for alternative explanations, such as other monitoring mechanisms and director characteristics. Together, these additional tests consistently support our main findings that director pay duration affects firms' real earnings management practices.

To add more nuances, we perform additional analyses. Firstly, we explore the mechanisms through which boards, incentivized by longer pay duration, mitigate corporate short-termism. Given the instrumental role of corporate boards in both CEO selection and compensation design (Adams et al., 2010), we conduct a path analysis to examine the indirect effects of director pay duration on corporate short-termism, as mediated through the characteristics of CEOs appointed by the boards and the compensation structures they implement (Ferris et al., 2017). We construct a composite measure for the long-term orientation of newly appointed CEOs based on individual attributes including gender, education, expertise, social networks, and prior experiences (Abernethy and Wallis, 2019). We find that extending director pay duration increases the board's likelihood of appointing a CEO with a longer strategic orientation, which in turn alleviates the extent of real earnings management in subsequent years following the appointment. Furthermore, we show that director pay duration is positively associated with the duration of compensation awarded to the new CEO, indicating that director pay duration influences CEO behavior through compensation design. These collective findings suggest that directors with longer pay duration appoint long-term oriented CEOs and structure CEO compensation with longer horizons to better align CEOs' interests with shareholders' long-term value. This alignment mechanism serves as a crucial intermediary through which director pay duration influences corporate decision-making and mitigates short-termism.

Our last set of additional tests examines when the effect of director pay duration on real earnings management becomes less effective. Literature shows that monitoring mechanisms, such as institutional investors and subordinate executives, can serve as substitutive mechanisms beyond board oversight in constraining CEO opportunism (Cheng et al., 2016; Chhaochharia and Grinstein, 2009). We find that the impact of extended director pay duration is only significant in the absence of high long-term institutional ownership or strong internal

governance by subordinate executives, but becomes negligible when these alternative monitoring mechanisms are in place. Further, financial distress or a firm's limited access to external capital may function to discipline managerial behavior in efficiently utilizing economic resources (Campello et al., 2010; Denis and Kruse, 2000). We show that the effect of director pay duration in mitigating real earnings management diminishes in firms with high financial risks. Finally, when grouping CEO turnover by the underlying reasons, we find that the mitigating effect of director pay duration is significant during voluntary CEO turnover events, but not in performance-induced cases, where the high performance-CEO turnover sensitivity may serve as an alternative governance mechanism.

Our paper makes several notable contributions to the literature. First, we contribute to the growing literature challenging the traditional view in the classic agency theory that assumes corporate directors as impartial guardians of shareholders' long-term interests in exercising board monitoring (Fama and Jensen, 1983). Recent literature has shown that board directors may act in a self-serving way to maximize myopic objectives (Bebchuk et al., 2010; Fang and Huang, 2024; Kim and Oh, 2024). We extend this burgeoning literature by highlighting how boardroom myopia can breed corporate short-termism, particularly in CEO appointments and compensation design. Importantly, our findings yield a practical solution to this issue. We show that aligning director interests with long-term corporate health through extended pay duration encourages directors to adopt a more forward-looking approach, including appointing CEOs with strategic foresight and providing CEOs with adequate long-term incentives. As such, by establishing this link between director incentives and corporate time horizons, our research not only advances the theoretical understanding of boardroom dynamics but also provides actionable insights for mitigating corporate short-termism.

Second, we extend the literature on corporate governance and CEO selection. While prior studies have primarily focused on factors such as board composition (Borokhovich et al.,

1996), director expertise (Westphal and Fredrickson, 2001), and social capital (Abernethy et al., 2019; Tian et al., 2011), our research addresses a critical gap. In particular, we explore how directors' decision-making preferences, shaped by their compensation structures, influence their strategic choices in CEO appointments. Our findings provide a fresh perspective on how incentive structures at the board level cascade through the organization, shaping its strategic orientation. Specifically, we uncover a dual mechanism—the CEO selection process and subsequent CEO compensation design—through which director pay duration impacts corporate outcomes. This insight offers a more holistic understanding of why and how directors exercise their instrumental role in affecting corporate outcomes (Adams et al., 2010; Chang and Wu, 2021).

Third, our study extends compensation duration research by being among the first to examine the effect of vesting schedules for director equity awards on firm outcomes. While CEO pay duration has been extensively studied (Fu et al., 2022; Gopalan et al., 2014; Kubick et al., 2024), we broaden this stream of research by highlighting that firms' myopic tendencies may originate from short-term incentives to the boards responsible for selecting and overseeing the CEO. Furthermore, we demonstrate that the duration of director pay plays a central role in aligning directors' interests with long-term shareholder value, potentially reconciling existing critiques that director vested equity may exacerbate insider trading incentives and undermine management oversight (Archambeault et al., 2008; Brick et al., 2006).

2. Related Literature and Hypothesis Development

2.1. Corporate short-termism and director myopia

Firm short-termism, prioritizing short-term financial targets over long-term value creation, has long been a concern due to its detrimental effects. These range from reduced long-term shareholder value (Bhojraj et al., 2009) and inefficient investment decisions hindering innovation (Manso, 2011) to negative impacts on M&A performance (Edmans et al., 2022),

sustainable firm growth (Liu et al., 2021), global development, and economic growth (Kolasinski and Yang, 2018; Terry, 2023). Prior literature has primarily attributed managers' excessive short-term focus to capital market pressure, takeover threat, and misaligned executive compensation incentives (Graham et al., 2005; Marinovic and Varas, 2019). We introduce a new perspective, arguing that boardroom myopia can breed corporate myopic tendencies throughout the C-suite executives, exacerbating corporate short-termism.

Our argument aligns with recent studies questioning board directors' stewardship role in monitoring executive decision-making and safeguarding long-term shareholder interest (Bebchuk et al., 2010; Fang and Huang, 2024). For instance, Bebchuk et al. (2010) document directors manipulating stock option grants timing and awarding themselves "lucky equity grants," while Franco et al. (2017) show directors exploiting deferred compensation plans features to circumvent insider trading restrictions. Evidence also suggests that directors may opportunistically select compensation peer groups to inflate their pay (Frye et al., 2024) and even collude with CEOs to extract private benefit (Brick et al., 2006). These findings indicate growing concerns over agency costs associated with director self-serving behaviors, with boardroom myopia emerging as a primary driver.

Prior research also examines why boardroom myopia may arise. According to time-based agency theory (Edmans et al., 2012; Flammer and Bansal, 2017), directors' preferred investment horizons can diverge from shareholders', potentially contributing to myopia. Directors' desire to enhance reputational and social networking impacts suggests that they may favour strategies improving firms' short-term market optics (Barrios et al., 2022; Masulis and Mobbs, 2014), but be reluctant to support decisions negatively impacting short-term outcomes for long-term benefit (Harford, 2003). Furthermore, directors' myopic tendencies may be exacerbated by imminent selling incentives from holding vested equity (Edmans et al., 2022). Studies have documented substantial returns through opportunistic insider trading (Kim and

Oh, 2024; Ravina and Sapienza, 2010), suggesting that myopic directors may encourage decisions prioritizing immediate benefits and tolerate earnings manipulation by managers to inflate short-term earnings (Drymiotes and Sivaramakrishnan, 2012).

That is why developing strategy to mitigate boardroom myopia and effectively align directors' incentives with long-term value creation has critical importance. As Bolton et al. (2006) emphasize, "If the goal is to ensure the maximization of long-run fundamental value, then one may want to … insulate the board of directors more from market swings, and more generally take steps ensuring that … the board of directors have a longer-term outlook." We aim to contribute to the literature by investigating the effectiveness of extended director compensation duration as a mean to curb boardroom myopia and, consequently, mitigate corporate short-termism.

2.2. Director compensation and pay duration

Recent years have witnessed a significant rise in director compensation, especially in the form of equity-linked pay, as firms seek to attract capable directors and induce monitoring effort (Adams and Ferreira, 2008; Fang and Huang, 2024). Advocates of equity-based director pay contend that it aligns the interests of directors and shareholders (Yermack, 2004), helping to promote active board oversight with positive firm outcomes such as greater disclosure quality (Sengupta and Zhang, 2015), lower cost of capital (Ertugrul and Hegde, 2008), and higher firm value (Lahlou and Navatte, 2017). However, studies also highlight potential unintended consequences of director equity pay. Evidence suggests that equity pay fosters directors' myopic tendencies to inflate short-term earnings (Drymiotes and Sivaramakrishnan, 2012), resulting in reduced financial reporting quality (Liu et al., 2021) and increased likelihood of accounting restatements (Archambeault et al., 2008).

Our study extends beyond the mere form of equity-based compensation granted to directors, focusing instead on the critical role of vesting periods in providing directors with

long-term incentives. We further derive our theoretical prediction from existing literature that shows how extending the vesting periods of incentive pay prolongs recipients' investment horizons and alleviates myopic tendencies (Bebchuk and Fried, 2010; Edmans et al., 2012; Manso, 2011). For example, studies find that CEOs with longer pay duration engage in less opportunistic earnings management (Gopalan et al., 2014), provide more voluntary disclosures (Cheng et al., 2021), and pursue more innovative strategies (Ederer and Manso, 2013). Moreover, firms benefit from offering longer-duration CEO compensation through superior innovation outcomes (Baranchuk et al., 2014), financing decisions (Fu et al., 2022), and improved ability to retain talented executives (Gopalan et al., 2021).

While current literature extensively examines pay duration in CEO compensation, we argue that the core theoretical implications should also apply to director compensation. We develop our main hypothesis in the next section to explain how extended pay duration can curb director myopia and how the extent of corporate short-termism may change when directors have less myopic tendencies, particularly around CEO succession.

2.3. Director pay duration and corporate short-termism during CEO successions

We argue that extending the vesting schedules for director equity grants can constrain director myopia and motivate directors to adopt a long-term perspective in decision making. With extended vesting periods, directors must wait longer for their equity pay to become vested. The unvested portion prevents directors from immediately unwinding their equity compensation, thereby restricting their near-term selling incentives (Bebchuk and Fried, 2010; Edmans et al., 2022). Directors with decreased interest in insider trading activities are less likely to engage in short-term behavior to inflate short-term stock prices at the expense of long-term value creation. Furthermore, lengthening the vesting periods directly ties directors' wealth to the firm's future stock performance. This strengthens directors' commitment to safeguarding

long-term shareholder interests, as any myopic decisions undermining long-term firm value would ultimately reduce their future wealth.

Directors critically shape a firm's strategic direction through CEO selection (Abernethy et al., 2019; Westphal and Fredrickson, 2001). Directors with longer horizons, incentivized by extended pay duration, will prioritize long-term shareholder interests when evaluating and appointing a new CEO to ensure the selected candidate shares a similar view. Specifically, such directors would be more likely to scrutinize CEO candidates based on their commitment to long-term value creation, strategic vision, and ability to implement sustainable growth strategies, while rejecting candidates overly focused on short-term performance that could undermine the firm's long-term competitive advantage. Furthermore, newly appointed CEOs are likely subject to closer board oversight (Chang and Wu, 2021). In implementing their close-oversight role, directors ensure that managerial decision-making aligns with the strategic direction envisioned by the board. Accordingly, directors' strategic horizons trickle down through the CEOs and ultimately manifest in corporate behavior and performance outcomes.

Therefore, we predict that offering director compensation with extended vesting periods mitigates their myopic tendencies in CEO selection, associated with reduced corporate short-termism following CEO appointments. Our hypothesis is summarized as follows:

H1: Ceteris paribus, director pay duration is negatively associated with the extent of corporate short-termism following CEO appointments.

3. Empirical Design and Data Description

3.1. Sample selection and data sources

Following Gentry et al. (2021), we first identify 4,280 CEO turnover events from Execucomp between 2006—the first year when director compensation data becomes available in the database—and 2020. We then obtain firm-level financial data from Compustat, analyst forecast from I/B/E/S, and committee and director information from BoardEx. We examine

firms' decision-making over the three years following CEO turnover, and this approach helps mitigate concerns about deriving noisy results from a one-year window in CEO transition periods (Daniele et al., 2024). We exclude firms in regulated industries such as financial and utilities sectors (SIC 6000 – 6999 and 4900 – 4999) and remove turnover events involving interim CEOs. Our final sample consists of 1,733 CEO turnover events.

Based on this CEO succession sample, we manually collect the vesting periods of director equity grants for the year preceding each new CEO's appointment. Specifically, we review the "Director Compensation" section of firm proxy statements (DEF 14A filings) to extract details on director equity grants. Appendix A provides examples of how firms design these vesting schedules. After merging non-missing firm-level data, our final sample comprises 4,643 firm-year observations. Panel A of Table 1 outlines the sample selection procedure, and Panels B and C present the sample distribution by year and industry, respectively.

3.2. Variables of interest

3.2.1. Director pay duration

We use pay duration to capture the horizon period embedded in director compensation (Gopalan et al., 2014), which is the value-weighted average of the vesting periods of various compensation components, including cash retainers, restricted stock units, and stock option grants. Director pay duration is defined as:

$$Director\ pay\ duration = \frac{Cash\ fees\ \times 0 + \sum_{i=1}^{n_s} RSU_i \times t_i + \sum_{j=1}^{n_o} Option_j \times t_j}{Cash\ fees + \sum_{i=1}^{n_s} RSU_i + \sum_{j=1}^{n_o} Option_j}$$

where i represents a restricted stock unit grant, and j denotes a stock option grant. RSU_i ($Option_j$) is the grant date fair value reported in the proxy statement with a vesting period of

t_i (t_j) in years. Cash fees are assumed to have a vesting period of zero, as cash compensation is typically paid by the end of the fiscal year.[3]

3.2.2. Corporate short-termism

We follow the literature and assess corporate short-termism using real earnings management (REM) measures (Li et al., 2023; Zang, 2012). REM involves the manipulation of real business activities, such as overproduction, offering aggressive price discounts or more lenient credit terms, and cutting back on discretionary R&D or advertising expenses (Cheng et al., 2016; Park, 2023). Firms' engagement in REM practices is often motivated by a myopic desire to meet short-term earnings targets, at the expense of sustainable investments that could enhance their long-term competitiveness and growth prospects (Park, 2023; Zang, 2012). For example, overproduction can lead to excessive inventory buildup, tying up working capital, and potentially resulting in future write-downs. Reducing R&D and advertising expenses can impair a firm's ability to innovate, develop new products, and maintain brand awareness, ultimately hampering its long-term prospects. Thus, compared to other types of earnings management, such as accruals-based earnings management that primarily involve accounting adjustments without a direct cash flow impact, REM is more detrimental in the long run as it involves deviation from a firm's normal operational decisions and resource allocation polices (Edmans et al., 2022; Graham et al., 2005).

Our main variables of interest are abnormal discretionary expenditures, abnormal production costs, and aggregate magnitude of REM (Roychowdhury, 2006).[4] First, we estimate the expected (normal) levels of discretionary expenditures and production costs based on the entire Compustat universe through the following two industry-year regressions:

[3] In contrast to the growing trend in long-term non-equity incentive plans used in CEO compensation (Li and Wang, 2016), only 1% of firms in our sample include non-equity incentive pay in director compensation. Hence, we exclude this component from the calculation of director pay duration.

[4] As the net effect of REM practices on cash flow from operations (CFO) is ambiguous (Roychowdhury, 2006; Zang, 2012), we do not include abnormal CFO in the main analysis but check the robustness of our findings with the inclusion of abnormal CFO in Section 4.1.

$$\frac{DisExp_{i,t}}{Asset_{i,t-1}} = \beta_1 \frac{1}{Asset_{i,t-1}} + \beta_2 \frac{Rev_{i,t-1}}{Asset_{i,t-1}} + \varepsilon_{i,t} \quad (1)$$

$$\frac{ProdCost_{i,t}}{Asset_{i,t-1}} = \beta_1 \frac{1}{Asset_{i,t-1}} + \beta_2 \frac{Rev_{i,t}}{Asset_{i,t-1}} + \beta_3 \frac{\Delta Rev_{i,t}}{Asset_{i,t-1}} + \beta_4 \frac{\Delta Rev_{i,t-1}}{Asset_{i,t-1}} + \varepsilon_{i,t} \quad (2)$$

where $DisExp_{i,t}$ is the sum of a firm's R&D, advertising, and SG&A expenses in year *t*. $ProdCost_{i,t}$ is the sum of a firm's cost of goods sold in year *t* and change in inventories from year *t-1* to *t*. $Asset_{i,t-1}$ is the total asset in year *t-1*. $Rev_{i,t}$ denotes a firm's revenues in year *t* and $\Delta Rev_{i,t}$ change in inventories from year *t-1* to *t.*

We then take the residuals from Eqs. (1) and (2) to measure abnormal discretionary expenditures (*Abn_Disexp*) and abnormal production cost (*Abn_Prod*), respectively. To ensure consistency across the two measures, we multiply *Abn_Disexp* by minus one, so that higher values of both *Abn_Disexp* and *Abn_Prod* correspond to a greater extent of REM activities. We further construct an aggregate REM measure (*REM_Agg*) by summing *Abn_Disexp* and *Abn_Prod*, to capture the collective magnitude of real activities manipulation.

3.3. Empirical model

We focus on the CEO succession setting to test our hypothesis. Specifically, suppose a new CEO takes office in year *t*, we examine the effect of director pay duration set before the CEO turnover (in year *t-1*) on the extent of REM over the subsequent three years (in years *t, t+1*, and *t+2*). Our empirical model is designed as follows:

$$REM_{i,t+k} = \beta_1 Director\ pay\ duration_{i,t-1} + Firm\ and\ CEO\ Controls_{i,t+k} + Industry\ FE + Year\ FE + \varepsilon_{i,t+k} \quad (3)$$

where $REM_{i,t+k}$ represents the REM measures. The time variable *k* takes values of 0, 1, and 2, corresponding to each subsequent year after CEO succession. Our test variable of interest is $Director\ Pay\ Duration_{i,t-1}$, which denotes the average pay duration for non-employee

directors on the nomination committee in year *t-1*.[5] As we hypothesize that longer pay duration can constrain director myopic incentives and deter corporate short-termism following CEO turnover, we predict the coefficient on director pay duration to be negative and significant (i.e., $\beta_1 < 0$). We further incorporate industry and year fixed effects to account for potential heterogeneity in both the design of director incentives and REM across industries and time.[6]

We include several firm-level control variables to mitigate concerns on firm-specific characteristics affecting both REM and the design of director pay duration. Specifically, we include firm total assets (*Firm size*), operating performance (*ROA* and *Loss*), volatility of cash flow from operations (*CF volatility*), and leverage ratio (*Leverage*) to control for operating activities and capital structure (Cheng et al. 2016; Roychowdhury, 2006). We also capture firm's growth opportunities using the ratio of market capitalization to book value of equity (*Market-to-book*), and capital intensity (*Strategy*).[7] At the CEO level, we control for annual compensation (*CEO pay*), age (*CEO age*) and gender (*Male CEO*).[8] We further winsorize all continuous variables at 1% and 99%. Appendix B provides detailed variable definitions.

3.4. Descriptive statistics

Table 2 presents the summary statistics. As our analysis is based on CEO turnover events from Execucomp, the sample firms are in general larger than the Compustat universe. The mean values for *ROA* and *Leverage* are 0.035 and 0.274, respectively. On average, our

[5] We focus on the pay duration design for the nomination committee, as it directly influences CEO selection. Replacing the test variable with the average pay duration of the entire board yields consistent findings. Details are provided in Section 4.3.

[6] Notably, we do not include firm fixed effects in Eq. (3). Since we are examining the effect of pre-determined pay duration on corporate short-termism over the subsequent 3 years after the turnover, there is likely little to no variation in director pay duration within each firm over this short time window.

[7] Defender-type firms rely on a high degree of mechanization and routinization, focusing on a single core cost-efficient technology, whereas prospector-type firms adopt a lower degree of mechanization and routinization to maintain flexibility and avoid long-term commitments to a single technological process. As a result, defender-type firms typically exhibit a higher ratio of property, plant, and equipment to total assets (i.e., greater capital intensity) (Abernethy et al., 2019).

[8] Given the plausibly high correlation between CEO annual compensation and CEO pay duration, we do not control for the two variables simultaneously in the main regression. We explore the role of CEO pay duration in additional analysis and detailed findings are discussed in Section 5.2.

sample firms have 14 analysts following, and over 90% are audited by large, and prestigious auditing firms. For our REM measures, namely *Abn_Disexp*, *Abn_Prod* and *REM_Agg*, their magnitudes are comparable with previous studies (Roychowdhury, 2006; Zang, 2012). Notably, the average director pay duration $Dir\_Duration_{t-1}$ *(unlogged)* is 1.019 years, with a standard deviation of 1.235, indicating significant variations across sample firms in the length of director pay. Moreover, the average CEO age is 54 years and 94% are male.

4. Discussion of Empirical Results

4.1. Main regressions

We first examine the relation between director pay duration and the extent of REM during CEO successions using Eq. (3). Panel A in Table 3 reports the main regression results, where the dependent variables are *Abn_Disexp*, *Abn_Prod* and *REM_Agg*, respectively. We find that all the coefficients on our test variable of interest, i.e., $Dir\_Duration_{t-1}$ are statistically significant and negative. This finding is consistent with our prediction that directors with longer-horizon pay are more likely to mitigate corporate myopic behaviors (i.e., REM activities). We further consider firms specifically engaging in REM for myopic purposes (Roychowdhury, 2006). We define suspect firms (*Suspect*) as those that just meet or beat analyst forecasts by two cents; that is, the difference between actual EPS and the consensus analyst forecast before the earnings announcement date is within two cents. Literature shows that these firms face particularly strong pressure from the market to engage in short-term activities to meet or slightly exceed analyst expectations (Kasznik and McNichols, 2002). We notice that nearly 20% of our observations just meet or beat analyst forecasts and are considered suspect firms, in line with prior literature (Graham et al., 2005). We interact *Suspect* with $Dir\_Duration_{t-1}$ to capture the additional effect of director pay duration in constraining corporate short-termism in suspect firms. We include this interaction term into Eq. (3) and the regression results are presented in columns (4) to (6) of Panel A. The coefficients on the

interaction term *Dir_Duration*$_{t-1}$ × *Suspect* are significantly negative, supporting the notion that long-horizon directors are more likely to resist REM practices when facing short-term market pressure.

In terms of economic significance, the coefficients of *Dir_Duration*$_{t-1}$ in columns (3) and (6) are –0.020 and –0.011, respectively, while the coefficient of *Dir_Duration*$_{t-1}$ × *Suspect* in column (6) is –0.044. These results suggest that a one-standard-deviation increase in director pay duration corresponds to a decrease in REM equivalent to 3.3% of one standard deviation across all firms. For myopic firms (*Suspect* = 1), the reduction in REM is larger, amounting to 9.0% of one standard deviation.[9]

The findings on control variables are consistent with previous studies (Cheng et al., 2016). We find that, in general, firm operating performance and growth opportunities, proxied by ROA and the market-to-book ratio, respectively, are negatively related to firm's engagement in REM. Additionally, firms with greater analyst coverage and more prestigious auditors tend to exhibit lower levels of REM. Turning to CEO-level controls, we find that higher-paid CEOs, potentially signaling greater managerial ability, are less likely to engage in REM to meet short-term targets.

We further test the robustness of our results using alternative REM measures. We calculate the abnormal cash flow from operation (CFO) by first estimating the normal level of CFO through the following industry-year regression:

$$\frac{CFO_{i,t}}{Asset_{i,t-1}} = \beta_1 \frac{1}{Asset_{i,t-1}} + \beta_2 \frac{Rev_{i,t}}{Asset_{i,t-1}} + \beta_3 \frac{\Delta Rev_{i,t}}{Asset_{i,t-1}} + \varepsilon_{i,t} \quad (4)$$

where $CFO_{i,t}$ represents the firm's cash flows from operation in year *t*, and other variables are defined as above. Then, abnormal CFO (*Abn_CFO*) is computed as the residual from Eq. (4).

[9] Note, the standard deviation of *Dir_Duration*$_{t-1}$ and *REM_Agg* is 0.487 and 0.298, respectively. Hence, 3.3% = 0.020 × 0.487 / 0.298 ×100%; 9.0% = (0.011 + 0.044) × 0.487 / 0.298 ×100%.

Substituting the dependent variable in Eq. (3) with *Abn_CFO* and two alternative aggregate measures (*REM_Agg_alt1*, *REM_Agg_alt2*), we replicate the main analysis and report the results in Panel B of Table 3. The coefficients on $Dir\_Duration_{t-1}$ and the interaction term $Dir\_Duration_{t-1} \times Suspect$ remain significantly negative across models, with the exception of column (4) when the dependent variable is abnormal cash flow from operation (*Abn_CFO*).

4.2. *Seinfeld v. Slager* (2012) ruling

We recognize the potential endogeneity issue arising from unobserved firm characteristics that may influence both director compensation design and firm operational policies. For example, firms with a long-term oriented culture may be less prone to myopic behaviors and more likely to structure director compensation with longer-horizon incentives.

To address this issue, we employ the unexpected outcome of the landmark *Seinfeld v. Slager* ruling in 2012 as a plausible exogenous shock to director pay duration. The ruling established the legal foundation for shareholder litigation challenging the fairness of director compensation. Thus, firms affected by the ruling have faced increased pressure to ensure their director compensation practices meet the "entire fairness" standard: either by setting explicit compensation limits, or by demonstrating that director pay levels align with those of comparable firms (Chen et al., 2024; Fang and Huang, 2024). Overall, this indicates that the design of director compensation needs to be specifically focusing on curbing director opportunistic behaviors and aligning with shareholder interests. Accordingly, we predict that firms affected by the ruling extend the horizon of director pay to satisfy the ruling requirements.

We use a double difference-in-differences (DID) approach (Bakke et al., 2016; Kuang et al., 2024) to compare the differences in director pay duration and REM activities between the treatment and control groups across the pre- and post-ruling periods. Since this ruling primarily affects Delaware-incorporated firms, we identify the treated firms as those

incorporated in Delaware (Loughran and McDonald, 2016).[10] We examine data from six years before and after the ruling. Specifically, *Post* is defined as an indicator variable equal to 1 for firms with upcoming CEO succession during 2012–2017, and 0 for those during 2006–2011. We control for industry fixed effect and a host of firm-level variables during CEO succession. Column (1) of Table 4 presents the result of the first DID, where the dependent variable is director pay duration. The significant and positive coefficient on *Post* × *Treat* suggests that treated firms significantly extend director pay duration following the ruling, relative to control firms.[11] This finding is consistent with our projection that firms extend director pay duration under the ruling to justify the fairness of director pay.

To provide evidence on the effect of extended director pay duration on corporate myopic behaviors, we further compare the variations among firms in subsequent REM activities (i.e., the second DID). In this analysis, we use *REM_Agg* to capture the overall REM, and the results are presented in columns (2) and (3) of Table 4. In column (2), the significantly negative coefficient on *Post* × *Treat* aligns with our expectation that long-horizon directors help constrain firm myopic tendencies. In column (3), the coefficients on the three-way interaction term *Post* × *Treat* × *Suspect* are significantly negative with a larger magnitude, yielding further support for our main inference.

4.3. Other robustness tests

We perform several additional tests to check the robustness of our main findings. Firstly, to address concerns that firms with longer director pay duration fundamentally differ from those providing directors with short-horizon incentives, we construct a propensity score matched sample based on pre-turnover firm characteristics. We define treated firms as those with director pay duration above the sample median, with the rest serving as control firms. We

[10] We thank Bill McDonald for sharing the 10-X header data and the state of incorporation information: https://sraf.nd.edu/sec-edgar-data/10-x-header-data/.

[11] Our findings are robust when we use five-year window around the ruling or all CEO turnover events during our investigation period.

fit a logit model to estimate the propensity score of a firm being treated before CEO turnover based on determinants identified in the pay duration literature (Gopalan et al., 2014; Li and Peng, 2021).[12] We match each treated firm with a control firm that has the nearest propensity score without replacement. In the process, we apply common support and exclude pairs outside a caliper of 1.5%. This process results in 540 pairs of treatment and control firms. We replicate our main analysis using the propensity score matched sample. Our results are reported in Appendix Table A1 which is consistent with our prior findings.

We conduct additional robustness tests to account for alternative explanations. First, the literature indicates that stronger corporate governance mechanisms might affect both director compensation and firms' propensity to engage in REM (Abernethy et al., 2019; Armstrong et al., 2012; Sengupta and Zhang, 2015). To address this, we control for various governance variables, including board composition, institutional shareholder monitoring and subordinate executives monitoring. Our empirical proxies include board size, the proportion of independent directors, the percentage of common stocks held by institutional investors, compensation consultant,[13] and subordinate executive team's characteristics, including their decision horizon, annual compensation, and outside directorships. We further consider additional director-level variables such as female directors on board, directors holding an MBA degree, directors' financial expertise, their professional networks, and average tenure on board (Chan et al., 2023; Fang and Huang, 2024). We rerun our main regression by further controlling for above variables and report the results in Appendix Tables A2 and A3. Furthermore, we also examine the robustness of our findings using alternatively defined measures for director pay duration

[12] We include firm size, operating performance, R&D intensity, stock return, cash flow volatility, and further account for industry and year fixed effects.
[13] Using data from ISS Incentive Lab, we construct an indicator for a firm engaging a compensation consultant from one of the top four executive compensation consulting companies: Towers Perrin, Mercer, Frederic Cook and Hewitt.

and suspect firms. Appendix Tables A4 and A5 report the empirical results. In all cases, the findings are robust.

5. Additional Analyses

5.1. CEO selection

In this section, we explore the mechanisms by which director pay duration can mitigate corporate short-termism. As discussed earlier, boards navigate corporate strategic direction through their CEO selection criteria (Westphal and Fredrickson, 2001). So, we examine a potential effect of director pay duration on corporate short-termism via appointing CEOs who are long-term oriented.

When making selection decisions, boards evaluate candidates' human and social capital, indicated by various personal attributes, such as gender, expertise, educational background, and past professional experiences (Abernethy et al., 2019; Abernethy and Wallis, 2019). In tenet of prior literature, we employ principal component analysis (PCA) approach and derive a composite factor to assess a CEO's long-term orientation (*LongTerm_CEO*) from five individual variables. They are gender (female), holding an MBA degree, total network size, prior experience as a Chief Financial Officer (CFO), and the number of unique industries in which the CEO has worked previously. Specifically, evidence indicates that female CEOs may exhibit more conservative and long-term focused decision-making (Faccio et al., 2016). Further, Lewis et al. (2014) find that CEOs with an MBA degree are associated with greater environmental disclosure, suggesting a more strategic and stakeholder-conscious management approach. Larger professional networks offer access to diverse information sources, potentially allowing CEOs to facilitate comprehensive long-term strategies (Engelberg et al., 2013). Finally, prior CFO and industry-diverse experience generally broadens a CEO's strategic and holistic perspective (Custódio et al., 2013). These variables collectively indicate CEOs' commitment and ability to implement sustainable growth strategies. As expected, we find that

all five variables exhibit positive factor loadings on the common factor, suggesting that higher value of *LongTerm_CEO* reflects longer CEO strategic horizon.[14]

To examine the indirect effect of director pay duration on corporate short-termism through CEO selection, we employ a path analysis and estimate the following system of three equations (Ferris et al., 2017):[15]

$$Long-term\ CEO = f(Director\ Pay\ Duration, Controls) \quad (5)$$

$$REM = f(Director\ Pay\ Duration, Controls) \quad (6)$$

$$REM = f(Director\ Pay\ Duration, Long-term\ CEO, Controls) \quad (7)$$

That is, we first regress *LongTerm_CEO* on director pay duration using Eq. (5). As shown in column (1) of Table 5, the significantly positive coefficient on $Dir\_Duration_{t-1}$ indicates that longer-horizon directors are more likely to appoint CEOs with a long-term perspective, predicted by CEO attributes. Then, we examine the total effect of director pay duration on firms' engagement in activities manipulation using Eq. (6) and report the result in column (2) of Table 5. Aligned with our previous findings, the coefficients on $Dir\_Duration_{t-1}$ are significantly negative, suggesting reduced REM with longer pay duration to directors. Furthermore, we regress REM on both $Dir\_Duration_{t-1}$ and *LongTerm_CEO* to examine the indirect effect of appointing a long-term oriented CEO on REM. The coefficients on both $Dir\_Duration_{t-1}$ and *LongTerm_CEO* in column (3) are significantly negative, suggesting that extended director pay duration alleviates firms' tendencies to engage in REM, through appointing new leaders with longer horizon. Collectively, our results highlight that CEO selection is a crucial channel through which directors can influence firm outcomes.

[14] PCA results are reported in Appendix Table A6.

[15] We also perform the analyses using a simultaneous equation modelling (SEM) approach. We obtain inferentially consistent results. Appendix Tables A7 and A8 report the SEM results. Additionally, we find that longer pay duration for directors is associated with higher firm value, as measured by Tobin's Q, and reduced stock return volatility of the firm. Detailed results are reported in Appendix Table A9.

5.2. CEO pay duration

Corporate boards also play a vital role in designing CEO compensation (Chhaochharia and Grinstein, 2009; Fama and Jensen, 1983). Directors with longer pay duration are likely to reinforce CEOs' long-term commitment by extending vesting periods in CEO pay. The reason is two-fold. First, contracting theory suggests that director and CEO pay are often aligned, as certain determinants, such as firm fundamentals and external scrutiny, likely affect director and CEO pay in the same manner (Kumar and Sivaramakrishnan, 2008). Thus, when director compensation is structured to align with shareholder long-term interests, CEO compensation is expected to similarly emphasize long-term value creation. Second, extending CEO pay duration has documented to be an effective mechanism for fostering long-term decision-making (Baranchuk et al., 2014; Flammer and Bansal, 2017). This compensation design is expected to be adopted by boards with long-term strategic visions.

To probe into this, we calculate pay duration for subsequent CEO compensation following Li and Peng (2021). Data on the vesting schedules in CEO pay is obtained from ISS Incentive Lab. Since Incentive Lab only covers the 750 largest U.S. firms by market capitalization, our sample for this analysis consists of 2,559 observations.[16] Then, we replace the mediator variable in Eqs. (5) and (7) with CEO pay duration and present the results in Table 6. In column (1), we find a positive and significant association between director pay duration set pre-turnover and CEO pay duration in subsequent years, in line with our prediction and prior literature. Importantly, when regressing REM on both director pay duration and CEO pay duration, the result in column (3) shows that the coefficients on $Dir\_Duration_{t-1}$ and *CEO_Duration* are both significantly negative, indicating an indirect effect of director pay duration on the extent of REM through CEO pay duration.

[16] Since the Incentive Lab database does not include vesting schedules for director equity pay, we are not able to calculate pay duration for directors using the same method applied to CEO pay.

5.3. When does director pay duration become less effective?

Board governance represents one of the many primary corporate governance mechanisms that oversees and influences managerial decision-making (Adams et al., 2010). In this section, we explore when director pay duration becomes less effective.

5.3.1. External monitoring by institutional shareholders

Institutional investors, especially those with longer investment horizons and dedicated monitoring roles, can serve as influential external monitors over corporate policies and managerial actions (Bushee, 2001; Chen et al., 2007). To examine the potential moderating effect of institutional investor monitoring, we partition our sample into two groups based on the sample median of percentage of equity holdings by institutional investors. Furthermore, following Bushee (2001), we break down institutional investor types into dedicated and quasi-index investors—who are long-term oriented—versus transient investors.[17] We estimate Eq. (3) for each sub-sample, respectively, and report the results in Panel A of Table 7. The results show that director pay duration significantly mitigates corporate short-termism only in firms with weak external monitoring from institutional investors. Notably, the mitigating effect becomes statistically insignificant when robust external monitoring mechanisms are in place, particularly in the presence of high institutional ownership or a stronger presence of dedicated and quasi-index investors with longer investment horizons. We obtain generally consistent results based on the statistics of coefficient comparison tests.

5.3.2. Internal monitoring by subordinate executives

We next examine the potential moderating effect of subordinate executives within the firm in the relationship between director pay duration and corporate short-termism. Prior research suggests that key subordinate executives, such as the CFO and other senior officers, may serve as an important internal check on the CEO's decision-making (Cheng et al., 2016).

[17] Data source for the institutional investor classification is: https://accounting-faculty.wharton.upenn.edu/bushee/.

For example, subordinate executives often have longer decision horizons tied to their career concerns and human capital development within the firm (Gibbons and Murphy, 1992). Given the tournament incentives, they might be less likely to pursue short-term gains that could jeopardize the firm's future prospects and their own career trajectories.

Following Cheng et al. (2016), we use two proxies to assess monitoring incentives of subordinate executives. The first proxy, *Exec_Horizon*, is an indicator variable that equals 1 if the average decision horizon (65 – executive age) of subordinate executives is above the sample median, and 0 otherwise. The second proxy, *Exec_PayRatio*, is an indicator that equals 1 if the pay ratio (average annual compensation of subordinate executives divided by CEO pay) is above the sample median. We then partition the sample using the proxies and estimate Eq. (3) in each subsample partitioned, with results reported in Panel B of Table 7. We show that the mitigating effect of director pay duration on REM is significant only when subordinate executives have weaker monitoring incentives, as reflected in shorter decision horizons or lower relative pay ratios. We also notice that the coefficients are not significantly different across subsamples. These collective findings indicate that subordinate executives may act as substitutive governance mechanisms in curbing firms' engagement in REM practices.

5.3.3. Financial distress or constraints

A firm's financial condition and access to capital markets may influence corporate decision-making and discipline managerial behavior (Campello et al., 2010; Xu and Kim, 2022). To investigate the potential moderating effect of financial conditions, we partition our sample based on two measures, namely Altman Z-score (Altman, 1968) and the Whited-Wu (WW) index (Whited and Wu, 2006), to capture a firm's financing constraints based on its characteristics such as cash flow, leverage, and growth opportunities. We classify firms as financially constrained if their Z-score is below 1.81 or their WW index is above the sample median.

We estimate Eq. (3) for each subsample. The results are presented in Panel C of Table 7. We find a significant and negative relationship between director pay duration and REM only for the non-distressed and unconstrained subsamples, while the significance of this negative relationship disappears when the firm is subject to a high financial risk. Interestingly, as shown in column (4), the coefficients on $Dir\_Duration_{t-1}$ are positive in subsamples where firms face higher risk of financial distress or constraints. We also obtain consistent results when comparing the coefficients. These findings suggest that when a firm's financial health is at risk or its access to external financing is limited, boards may face immense pressure to take actions that can quickly improve the firm's cash flows. In such situations, the board's compensation incentives, such as extended pay duration, may take a backseat to affect corporate decision-making due to the urgent need for a turnaround in the firm's immediate prospects for survival.

5.3.4. Voluntary vs. performance-induced CEO turnover

We further examine whether the reasons behind CEO turnover impact the effect of director pay duration in mitigating corporate short-termism. Involuntary (performance-induced) CEO dismissals are often driven by heightened shareholder dissatisfaction or intense media scrutiny (Jenter and Lewellen, 2021). A high sensitivity of performance-induced turnover can serve as an alternative mechanism to constrain problematic managerial behavior. We obtain data on CEO departure reasons from the database compiled by Gentry et al. (2021). We specifically exclude involuntary CEO departures due to exogenous reasons such as death or illness, as these are unlikely to be performance-driven. We then divide our sample into performance-induced versus voluntary CEO turnover events and repeat the main analysis of Eq. (3) on each subsample. Panel D of Table 7 reports the results. In line with our expectation, the effect of director pay duration is only statistically significant in the voluntary CEO departure sample. The coefficient comparison tests also show consistent results. The findings

suggest that in the presence of performance-induced turnover as an alternative governance mechanism, director pay duration may become less influential in corporate decision-making.

6. Conclusion

Amid increasing concerns about director myopia contributes to corporate short-termism issue, we explore the role of director compensation design in motivating directors to adopt a long-term perspective. In a context of CEO turnover, we argue that directors' myopic tendencies can trickle down the organization and ultimately manifest as corporate myopic behaviors. Using hand-collected data on the vesting schedules for director equity grants from firm proxy statements immediately prior to CEO successions, we find that directors' pay duration set pre-turnover is negatively associated with firms' subsequent engagement in real earnings management (REM), our main proxy for capturing corporate myopic behaviors. Moreover, after leveraging the *Seinfeld v. Slager* (2012) ruling as an as-good-as-random shock to the design of director compensation horizons and discounting alternative explanations, our findings indicate that extending the duration of directors' pay mitigates their myopic tendencies during CEO successions, serving as an effective remedy to curb corporate short-termism.

Furthermore, our channel tests reveal two mechanisms through which boards may mitigate corporate short-termism: CEO selection and CEO compensation design. Longer-horizon directors are more inclined to appoint CEOs who are committed to long-term value creation and capable of implementing sustainable growth strategies. Additionally, these directors tend to structure CEO compensation packages with extended duration. These actions collectively mitigate firms' tendencies to engage in REM practices, discouraging myopic behaviors that sacrifice long-term competitiveness for short-term gains. Finally, we perform several cross-sectional analyses, which show that the effectiveness of director pay duration in mitigating REM diminishes in the presence of alternative governance mechanisms, including

in firms with high institutional ownership, strong monitoring by key subordinate executives, high financial risk, and when CEO departure is performance-induced.

To the best of our knowledge, our study is among the first to systematically examine the vesting periods of director equity pay. We document significant variation across firms in designing director compensation duration and show that extended pay duration provides long-term incentives to foster directors' sustainable vision. Future research can investigate the determinants of director pay duration across firms. Moreover, while the majority of firms have stock ownership guidelines in place, relatively few adopt mandatory equity retention requirements for directors (Damon et al., 2023). Studies may explore how the design of vesting schedules interact with stock ownership requirements to directors in affecting corporate decision-making.

By highlighting the pivotal role of director compensation structures in shaping corporate prospects, our study offers important policy implications. Our findings suggest that extended vesting requirements for director equity pay can serve as an effective mechanism to achieve incentive alignment and mitigate boardroom myopia, which often breeds short-termism throughout the organization. To promote sustainable corporate policies that create long-term value for shareholders and stakeholders, regulators should devote increased attention to aligning directors' personal incentives with long-run objectives through carefully designed compensation packages.

REFERENCES

Abernethy, M. A., Kuang, Y. F., & Qin, B. (2019). The relation between strategy, CEO selection, and firm performance. *Contemporary Accounting Research*, *36*(3), 1575–1606.

Abernethy, M. A., & Wallis, M. S. (2019). Critique on the "manager effects" research and implications for management accounting research. *Journal of Management Accounting Research*, *31*(1), 3–40.

Adams, R. B., & Ferreira, D. (2008). Do directors perform for pay? *Journal of Accounting and Economics*, *46*(1), 154–171.

Adams, R. B., Hermalin, B. E., & Weisbach, M. S. (2010). The role of boards of directors in corporate governance: A conceptual framework and survey. *Journal of Economic Literature*, *48*(1), 58–107.

Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The Journal of Finance*, *23*(4), 589–609.

Archambeault, D. S., Dezoort, F. T., & Hermanson, D. R. (2008). Audit committee incentive compensation and accounting restatements. *Contemporary Accounting Research*, *25*(4), 965–992.

Armstrong, C., Ittner, C., & Larcker, D. (2012). Corporate governance, compensation consultants, and CEO pay levels. *Review of Accounting Studies*, *17*(2), 322–351.

Bakke, T.-E., Mahmudi, H., Fernando, C. S., & Salas, J. M. (2016). The causal effect of option pay on corporate risk management. *Journal of Financial Economics*, *120*(3), 623–643.

Baranchuk, N., Kieschnick, R., & Moussawi, R. (2014). Motivating innovation in newly public firms. *Journal of Financial Economics*, *111*(3), 578–588.

Barrios, J. M., Bianchi, P. A., Isidro, H., & Nanda, D. (2022). Boards of a feather: Homophily in foreign director appointments around the world. *Journal of Accounting Research*, *60*(4), 1293–1335.

Barton, D., & Wiseman, M. (2015). Where boards fall short. *Harvard Business Review*. January-February issue. https://hbr.org/2015/01/where-boards-fall-short

Bebchuk, L. A., & Fried, J. M. (2010). Paying for long-term performance. *University of Pennsylvania Law Review*, 1915-1959.

Bebchuk, L. A., Grinstein, Y., & Peyer, U. (2010). Lucky CEOs and lucky directors. *The Journal of Finance*, *65*(6), 2363–2401.

Bhojraj, S., Hribar, P., Picconi, M., & McInnis, J. (2009). Making sense of cents: An examination of firms that marginally miss or beat analyst forecasts. *The Journal of Finance*, *64*(5), 2361–2388.

Brick, I. E., Palmon, O., & Wald, J. K. (2006). CEO compensation, director compensation, and firm performance: Evidence of cronyism? *Journal of Corporate Finance*, *12*(3), 403–423.

Bolton, P., Scheinkman, J., & Xiong, W. (2006). Executive compensation and short-termist behaviour in speculative markets. *The Review of Economic Studies*, *73*(3), 577–610.

Borokhovich, K. A., Parrino, R., & Trapani, T. (1996). Outside directors and CEO selection. *Journal of Financial and Quantitative Analysis*, *31*(3), 337–355.

Bushee, B. J. (2001). Do institutional investors prefer near-term earnings over long-run value? *Contemporary Accounting Research*, *18*(2), 207–246.

Campello, M., Graham, J. R., & Harvey, C. R. (2010). The real effects of financial constraints: Evidence from a financial crisis. *Journal of Financial Economics*, *97*(3), 470–487.

Chan, K., Chen, V. Y., Huang, Y. F., & Liang, J. W. (2023). Outside directors' equity incentives and strategic alliance decisions. *Journal of Corporate Finance*, *79*, 102381.

Chang, C. H., & Wu, Q. (2021). Board networks and corporate innovation. *Management Science*, *67*(6), 3618–3654.

Chen, X., Harford, J., & Li, K. (2007). Monitoring: Which institutions matter? *Journal of Financial Economics*, *86*(2), 279–305.

Chen, S. S., Chien, C. Y., & Huang, C. W. (2024). The use of peer groups in setting director compensation: Competition for talent versus self-serving behavior. *Journal of Financial and Quantitative Analysis*, *59*(4), 1886-1925.

Cheng, Q., Cho, Y. J., & Kim, J. B. (2021). Managers' pay duration and voluntary disclosures. *Journal of Business Finance & Accounting*, *48*(7–8), 1332–1367.

Cheng, Q., Lee, J., & Shevlin, T. (2016). Internal governance and real earnings management. *The Accounting Review*, *91*(4), 1051–1085.

Chhaochharia, V., & Grinstein, Y. (2009). CEO compensation and board structure. *The Journal of Finance*, *64*(1), 231–261.

Custódio, C., Ferreira, M. A., & Matos, P. (2013). Generalists versus specialists: Lifetime work experience and chief executive officer pay. *Journal of Financial Economics*, *108*(2), 471–492.

Damon, C., Luong, J., & Chiu, R. (2023). Director compensation report. *FW Cook*. https://www.fwcook.com/Publications-Events/Research/2023-Director-Compensation-Report/

Daniele, M., Desai, P., Imperatore, C., & Pettinicchio, A. (2024). Big baths around turnovers: What happens if the former CEO stays on board? *European Accounting Review*, *0*(0), 1–28.

Denis, D. J., & Kruse, T. A. (2000). Managerial discipline and corporate restructuring following performance declines. *Journal of Financial Economics*, *55*(3), 391-424.

Drymiotes, G., & Sivaramakrishnan, K. (2012). Board monitoring, consulting, and reward structures. *Contemporary Accounting Research*, *29*(2), 453–486.

Ederer, F., & Manso, G. (2013). Is pay for performance detrimental to innovation? *Management Science*, *59*(7), 1496–1513.

Edmans, A., Fang, V. W., & Huang, A. H. (2022). The long-term consequences of short-term incentives. *Journal of Accounting Research*, *60*(3), 1007–1046.

Edmans, A., Gabaix, X., Sadzik, T., & Sannikov, Y. (2012). Dynamic CEO compensation. *The Journal of Finance*, *67*(5), 1603–1647.

Engelberg, J., Gao, P., & Parsons, C. A. (2013). The price of a CEO's rolodex. *The Review of Financial Studies*, *26*(1), 79-114.

Ertugrul, M., & Hegde, S. (2008). Board compensation practices and agency costs of debt. *Journal of Corporate Finance*, *14*(5), 512–531.

Faccio, M., Marchica, M. T., & Mura, R. (2016). CEO gender, corporate risk-taking, and the efficiency of capital allocation. *Journal of Corporate Finance*, *39*, 193-209.

Fahlenbrach, R. (2009). Founder-CEOs, investment decisions, and stock market performance. *Journal of Financial and Quantitative Analysis*, *44*(2), 439-466.

Fang, L., & Huang, S. (2024). The governance of director compensation. *Journal of Financial Economics*, *155*, 103813.

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The Journal of Law & Economics*, *26*(2), 301–325.

Ferris, S. P., Javakhadze, D., & Rajkovic, T. (2017). CEO social capital, risk-taking and corporate policies. *Journal of Corporate Finance*, *47*, 46–71.

Flammer, C., & Bansal, P. (2017). Does a long-term orientation create value? Evidence from a regression discontinuity. *Strategic Management Journal*, *38*(9), 1827–1847.

Franco, F., Ittner, C. D., & Urcan, O. (2017). Determinants and trading performance of equity deferrals by corporate outside directors. *Management Science*, *63*(1), 114–138.

Frye, M. B., Gatchev, V. A., & Pham, D. T. (2024). Director self-dealing: Evidence from compensation peer groups. *Journal of Corporate Finance*, *85*, 102560.

Fu, X., Huang, M., & Tang, T. (2022). Duration of executive compensation and maturity structure of corporate debt. *Journal of Corporate Finance*, *73*, 102188.

Gentry, R. J., Harrison, J. S., Quigley, T. J., & Boivie, S. (2021). A database of CEO turnover and dismissal in S&P 1500 firms, 2000–2018. *Strategic Management Journal*, *42*(5), 968–991.

Gibbons, R., & Murphy, K. J. (1992). Optimal incentive contracts in the presence of career concerns: Theory and evidence. *Journal of Political Economy*, *100*(3), 468.

Gopalan, R., Huang, S., & Maharjan, J. (2021). The role of deferred equity pay in retaining managerial talent. *Contemporary Accounting Research*, *38*(4), 2521–2554.

Gopalan, R., Milbourn, T., Song, F., & Thakor, A. V. (2014). Duration of executive compensation. *The Journal of Finance*, *69*(6), 2777–2817.

Graham, J. R., Harvey, C. R., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, *40*(1), 3–73.

Harford, J. (2003). Takeover bids and target directors' incentives: The impact of a bid on directors' wealth and board seats. *Journal of Financial Economics, 69*(1), 51–83.

Jenter, D., & Lewellen, K. (2021). Performance-induced CEO turnover. *The Review of Financial Studies*, *34*(2), 569–617.

Kasznik, R., & McNichols, M. F. (2002). Does meeting earnings expectations matter? Evidence from analyst forecast revisions and share prices. *Journal of Accounting Research*, *40*(3), 727-759.

Kim, S., & Oh, S. (2024). Outside directors' insider trading around board meetings. *Review of Accounting Studies*, *29*(3), 2617–2649.

Kolasinski, A. C., & Yang, N. (2018). Managerial myopia and the mortgage meltdown. *Journal of Financial Economics*, *128*(3), 466–485.

Kuang, Y. F., Qin, B., & Yang, X. (2024). Vertical pay disparity, traditional Chinese culture, and employee productivity. *Management Accounting Research*, *65*, 100902.

Kubick, T. R., Robinson, J. R., & Starks, L. T. (2024). CEO incentives for risk-taking and compensation duration. *The Accounting Review*, 1–24.

Kumar, P., & Sivaramakrishnan, K. (2008). Who monitors the monitor? The effect of board independence on executive compensation and firm value. *The Review of Financial Studies*, *21*(3), 1371–1401.

Lahlou, I., & Navatte, P. (2017). Director compensation incentives and acquisition performance. *International Review of Financial Analysis*, *53*, 1–11.

Lewis, B. W., Walls, J. L., & Dowell, G. W. (2014). Difference in degrees: CEO characteristics and firm environmental disclosure. *Strategic Management Journal*, *35*(5), 712-722.

Li, Z., & Peng, Q. (2021). The dark side of executive compensation duration: Evidence from mergers and acquisitions. *Journal of Financial and Quantitative Analysis*, *56*(8), 2963–2997.

Li, Z., & Wang, L. (2016). Executive compensation incentives contingent on long-term accounting performance. *The Review of Financial Studies*, *29*(6), 1586–1633.

Li, Y., Wang, P., & Zhang, W. (2023). Individual investors matter: The effect of investor-firm interactions on corporate earnings management. *Journal of Corporate Finance*, *83*, 102492.

Liu, X., Lobo, G. J., & Yu, H. C. (2021). Is audit committee equity compensation related to audit fees?. *Contemporary Accounting Research*, *38*(1), 740–769.

Liu, Z., Shen, H., Welker, M., Zhang, N., & Zhao, Y. (2021). Gone with the wind: An externality of earnings pressure. *Journal of Accounting and Economics*, *72*(1), 101403.

Loughran, T., & Mcdonald, B. (2016). Textual analysis in accounting and finance: A survey. *Journal of Accounting Research*, *54*(4), 1187–1230.

Manso, G. (2011). Motivating innovation. *The Journal of Finance*, *66*(5), 1823–1860.

Marinovic, I., & Varas, F. (2019). CEO horizon, optimal pay duration, and the escalation of short-termism. *The Journal of Finance*, *74*(4), 2011–2053.

Masulis, R. W., & Mobbs, S. (2014). Independent director incentives: Where do talented directors spend their limited time and energy? *Journal of Financial Economics*, *111*(2), 406–429.

Park, K. (2023). The spillover effect of peer CEO turnover on real earnings management. *The Accounting Review*, *98*(7), 479–501.

Ravina, E., & Sapienza, P. (2010). What do independent directors know? Evidence from their trading. *The Review of Financial Studies*, *23*(3), 962–1003.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, *42*(3), 335–370.

Sengupta, P., & Zhang, S. (2015). Equity-based compensation of outside directors and corporate disclosure quality. *Contemporary Accounting Research*, *32*(3), 1073–1098.

Terry, S. J. (2023). The macro impact of short-termism. *Econometrica*, *91*(5), 1881–1912.

Tian, J., Haleblian, J., & Rajagopalan, N. (2011). The effects of board human and social capital on investor reactions to new CEO selection. *Strategic Management Journal*, *32*(7), 731-747.

Westphal, J. D., & Fredrickson, J. W. (2001). Who directs strategic change? Director experience, the selection of new CEOs, and change in corporate strategy. *Strategic Management Journal*, *22*(12), 1113–1137.

Whited, T. M., & Wu, G. (2006). Financial constraints risk. *The Review of Financial Studies*, *19*(2), 531–559.

Xu, Q., & Kim, T. (2022). Financial constraints and corporate environmental policies. *The Review of Financial Studies*, *35*(2), 576–635.

Yermack, D. (2004). Remuneration, retention, and reputation incentives for outside directors. *The Journal of Finance*, *59*(5), 2281–2308.

Zang, A. Y. (2012). Evidence on the trade-off between real activities manipulation and accrual-based earnings management. *The Accounting Review*, *87*(2), 675-703.

Table 1 Sample Selection and Sample Distribution

Panel A: Sample selection

Selection Procedure		CEO Turnover
CEO succession events from Execucomp during 2006–2020		4,280
(CEO in the following year differs from the current year's CEO)		
Minus: missing values in Compustat and I/B/E/S in next three years	–1,549	2,731
Minus: utility and financial firms (SIC codes 4900–4999; 6000–6999)	–622	2,109
Minus: interim CEO turnover	–158	1,951
Minus: missing values in director compensation from Execucomp		
& committee data from BoardEx	–218	1,733
		Firm-year observations (N)
Merge: firm financial data and control variables within next three years		4,643
Final sample		4,643

Panel B: Sample distribution by year

Year	N	Percentage
2007	90	1.94%
2008	215	4.63%
2009	316	6.81%
2010	315	6.78%
2011	294	6.33%
2012	300	6.46%
2013	321	6.91%
2014	313	6.74%
2015	325	7.00%
2016	336	7.24%
2017	331	7.13%
2018	320	6.89%
2019	311	6.70%
2020	323	6.96%
2021	321	6.91%
2022	212	4.57%
Total	4,643	100%

Panel C: Sample distribution by industry

Fama-French 12 Industry Classification	N	Percentage
Consumer non-durables – tobacco, textiles, apparel and toys	314	6.76%
Consumer durables – cars, TV's, furniture, household appliances	187	4.03%
Manufacturing – machinery, trucks, planes, paper	779	16.78%
Oil, gas, and coal extraction and products	274	5.90%
Chemicals and allied products	205	4.42%
Business equipment – computers, software	1,005	21.65%
Telephone and television transmission	113	2.43%
Wholesale, retail, and some services	766	16.50%
Healthcare, medical equipment, and drug	506	10.90%
Other – mines, construction, transportations, hotels, entertainment	494	10.64%
Total	4,643	100%

Notes: This table reports the sample selection procedure and sample distributions. Panel A describes the sample construction of CEO turnover events starting from the Execucomp database. Panel B shows sample distribution by year during the sample period of 2007 - 2022. Panel C shows the sample distribution by industry. N represents the firm-year observations. Percentage provides the number of observations out of the total sample size.

Table 2 Descriptive Statistics

Variables	N	Mean	SD	Q1	Median	Q3
Dir_Duration$_{t-1}$	4,643	0.568	0.487	0.234	0.462	0.814
Dir_Duration$_{t-1}$ (unlogged)	4,643	1.019	1.235	0.264	0.587	1.256
Abn_CFO	4,643	–0.014	0.077	–0.056	–0.009	0.031
Abn_Disexp	4,643	0.005	0.172	–0.066	0.018	0.106
Abn_Prod	4,643	–0.027	0.153	–0.106	–0.015	0.059
REM_Agg	4,643	–0.023	0.298	–0.161	0.008	0.154
Suspect	4,643	0.199	0.399	0.000	0.000	0.000
Firm size	4,643	7.946	1.591	6.782	7.858	8.984
Analyst following	4,643	13.834	9.596	6.000	12.000	19.000
Strategy	4,643	0.248	0.211	0.091	0.174	0.344
ROA	4,643	0.035	0.104	0.006	0.048	0.085
CF volatility	4,643	0.039	0.048	0.014	0.024	0.044
Loss	4,643	0.332	0.471	0.000	0.000	1.000
Market-to-book	4,643	3.596	7.237	1.392	2.326	3.938
Leverage	4,643	0.274	0.208	0.120	0.252	0.391
Big4	4,643	0.926	0.262	1.000	1.000	1.000
CEO pay	4,643	8.362	0.953	7.727	8.416	9.032
CEO age	4,643	53.872	6.214	50.000	54.000	58.000
Male CEO	4,643	0.938	0.241	1.000	1.000	1.000

Notes: This table displays the descriptive statistics of the variables used in the main regression. All variable definitions are summarized in Appendix B.

Table 3 Main Regression Results

Panel A: The relation between director pay duration and real earnings management

Variables	*Abn_Disexp* (1)	*Abn_Prod* (2)	*REM_Agg* (3)	*Abn_Disexp* (4)	*Abn_Prod* (5)	*REM_Agg* (6)
$Dir\_Duration_{t-1}$	–0.008*	–0.012***	–0.020***	–0.004	–0.007*	–0.011
	(–1.891)	(–3.712)	(–2.949)	(–0.783)	(–1.970)	(–1.455)
$Dir\_Duration_{t-1} \times Suspect$				–0.021**	–0.023**	–0.044**
				(–2.195)	(–2.158)	(–2.342)
Suspect				–0.003	–0.000	–0.003
				(–0.310)	(–0.051)	(–0.184)
Firm size	0.052***	0.042***	0.095***	0.053***	0.042***	0.095***
	(11.945)	(9.755)	(11.517)	(12.054)	(9.864)	(11.641)
ROA	–0.045	–0.369***	–0.414***	–0.044	–0.369***	–0.413***
	(–1.537)	(–14.283)	(–9.792)	(–1.494)	(–14.481)	(–9.800)
Market-to-book	–0.002***	–0.001**	–0.003***	–0.002***	–0.001**	–0.003***
	(–7.510)	(–2.218)	(–7.018)	(–7.405)	(–2.203)	(–6.973)
Loss	–0.019***	–0.009**	–0.028***	–0.020***	–0.009**	–0.029***
	(–4.388)	(–2.816)	(–5.397)	(–4.597)	(–2.879)	(–5.642)
Strategy	0.177***	0.099***	0.275***	0.174***	0.096***	0.270***
	(9.108)	(10.265)	(11.183)	(9.013)	(10.346)	(11.123)
Leverage	–0.010	–0.041**	–0.051	–0.009	–0.041**	–0.051
	(–0.608)	(–2.778)	(–1.726)	(–0.597)	(–2.726)	(–1.695)
Analyst following	–0.006***	–0.005***	–0.011***	–0.006***	–0.005***	–0.011***
	(–10.047)	(–10.738)	(–10.591)	(–10.038)	(–10.705)	(–10.573)
CF volatility	–0.506***	–0.366***	–0.872***	–0.512***	–0.372***	–0.884***
	(–5.741)	(–4.577)	(–5.967)	(–5.790)	(–4.612)	(–6.012)
Big4	–0.029**	–0.005	–0.034**	–0.029**	–0.005	–0.034**
	(–2.398)	(–0.874)	(–2.181)	(–2.403)	(–0.948)	(–2.207)
CEO pay	–0.024***	–0.016***	–0.039***	–0.024***	–0.016***	–0.039***
	(–5.738)	(–4.441)	(–5.846)	(–5.790)	(–4.439)	(–5.888)
CEO age	0.000	0.000	0.001	0.000	0.000	0.001
	(1.500)	(1.463)	(1.612)	(1.378)	(1.330)	(1.472)
Male CEO	0.016*	0.007	0.023	0.015*	0.007	0.022

Variables	*Abn_Disexp* (1)	*Abn_Prod* (2)	*REM_Agg* (3)	*Abn_Disexp* (4)	*Abn_Prod* (5)	*REM_Agg* (6)
	(1.918)	(0.955)	(1.508)	(1.906)	(0.938)	(1.495)
N	4,643	4,643	4,643	4,643	4,643	4,643
R-squared	0.199	0.189	0.197	0.201	0.191	0.199
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Alternative measures for real earnings management

Variables	*Abn_CFO* (1)	*REM_Agg_alt1* (2)	*REM_Agg_alt2* (3)	*Abn_CFO* (4)	*REM_Agg_alt1* (5)	*REM_Agg_alt2* (6)
$Dir\_Duration_{t-1}$	–0.003**	–0.011**	–0.023***	–0.002	–0.006	–0.013
	(–2.290)	(–2.583)	(–3.362)	(–1.360)	(–1.169)	(–1.689)
$Dir\_Duration_{t-1} \times Suspect$				–0.004	–0.024**	–0.047**
				(–1.334)	(–2.194)	(–2.337)
Suspect				0.000	–0.002	–0.003
				(0.043)	(–0.271)	(–0.171)
Firm size	0.008***	0.060***	0.102***	0.008***	0.060***	0.102***
	(4.724)	(12.797)	(11.727)	(4.819)	(12.963)	(11.872)
ROA	–0.298***	–0.343***	–0.712***	–0.298***	–0.342***	–0.711***
	(–12.901)	(–10.488)	(–13.745)	(–12.926)	(–10.566)	(–13.948)
Market-to-book	–0.000*	–0.003***	–0.004***	–0.000*	–0.003***	–0.004***
	(–1.785)	(–7.285)	(–6.145)	(–1.764)	(–7.180)	(–6.094)
Loss	0.018***	–0.001	–0.010**	0.018***	–0.002	–0.011**
	(8.151)	(–0.311)	(–2.166)	(8.122)	(–0.447)	(–2.434)
Strategy	–0.063***	0.114***	0.212***	–0.063***	0.111***	0.206***
	(–9.104)	(6.403)	(9.087)	(–8.972)	(6.264)	(8.979)
Leverage	0.020***	0.011	–0.031	0.020***	0.011	–0.031
	(3.516)	(0.633)	(–0.995)	(3.513)	(0.628)	(–0.975)
Analyst following	–0.002***	–0.008***	–0.013***	–0.002***	–0.008***	–0.013***
	(–14.484)	(–11.608)	(–11.419)	(–14.213)	(–11.548)	(–11.373)
CF volatility	–0.159***	–0.665***	–1.031***	–0.160***	–0.672***	–1.044***
	(–4.486)	(–8.307)	(–7.225)	(–4.559)	(–8.393)	(–7.280)
Big4	0.016***	–0.013	–0.018	0.016***	–0.014	–0.019
	(3.108)	(–1.031)	(–1.085)	(3.108)	(–1.058)	(–1.130)
CEO pay	–0.001	–0.025***	–0.040***	–0.001	–0.025***	–0.040***
	(–0.792)	(–6.094)	(–5.866)	(–0.798)	(–6.165)	(–5.910)
CEO age	0.000**	0.001**	0.001*	0.000**	0.001**	0.001*
	(2.416)	(2.275)	(2.039)	(2.384)	(2.148)	(1.901)
Male CEO	0.001	0.016	0.023	0.001	0.016	0.023
	(0.134)	(1.730)	(1.439)	(0.127)	(1.724)	(1.429)
N	4,643	4,643	4,643	4,643	4,643	4,643

Variables	*Abn_CFO*	*REM_Agg_alt1*	*REM_Agg_alt2*	*Abn_CFO*	*REM_Agg_alt1*	*REM_Agg_alt2*
	(1)	(2)	(3)	(4)	(5)	(6)
R-squared	0.304	0.229	0.222	0.304	0.231	0.225
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table reports empirical findings on the relationship between director pay duration and real earnings management. Panel A displays the baseline OLS regression results with REM measured by abnormal discretionary expenditures (*Abn_Disexp*), abnormal production cost (*Abn_Prod*) and the sum of these two individual measures (*REM_Agg*). Panel B shows the regression results using alternative REM measures based on abnormal cash flow from operation (*Abn_CFO*). *REM_Agg_alt1* is the sum of *Abn_Disexp* and *Abn_CFO*, while *REM_Agg_alt2* is the sum of all three individual REM measures. Variable $Dir\_Duration_{t-1}$ denotes the logarithm of one plus the average of director pay duration on nomination committee pre-CEO turnover event. *Suspect* equals one if the firm just meets or beats consensus analyst forecast by 2 cents. All regressions are estimated with industry- and year-fixed effects included. The standard errors in all specifications are clustered by year, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively. All variable definitions are summarized in Appendix B.

Table 4 Double DID Design Using *Seinfeld v. Slager* Ruling as an Exogenous Shock

Variables	*Dir_Duration* (1)	*REM_Agg* (2)	*REM_Agg* (3)
Post × Treat	0.105*	–0.056***	–0.041***
	(1.698)	(–6.042)	(–3.563)
Treat	–0.067	0.008	0.005
	(–1.619)	(1.064)	(0.659)
Post	–0.098*	0.053***	0.037**
	(–1.834)	(3.515)	(2.439)
Post × Treat × Suspect			–0.079**
			(–2.274)
Treat × Suspect			0.020
			(0.741)
Post × Suspect			0.076***
			(3.222)
Suspect			–0.048**
			(–2.228)
Firm size	0.065***	0.091***	0.091***
	(6.172)	(8.536)	(8.521)
ROA	–0.083	–0.382***	–0.375***
	(–0.903)	(–7.174)	(–7.009)
Market-to-book	–0.000	–0.003***	–0.003***
	(–0.830)	(–4.818)	(–4.847)
Loss	–0.052*	–0.023***	–0.023***
	(–1.668)	(–4.017)	(–4.342)
Strategy	0.069	0.301***	0.295***
	(0.704)	(10.174)	(10.284)
Leverage	–0.080*	–0.044	–0.043
	(–1.675)	(–0.994)	(–0.979)
Analyst following		–0.011***	–0.011***
		(–8.699)	(–8.615)
CF volatility		–0.941***	–0.952***
		(–7.054)	(–7.109)
Big4		–0.046***	–0.049***
		(–3.224)	(–3.207)
CEO pay		–0.038***	–0.038***
		(–4.923)	(–4.864)
CEO age		0.001	0.001
		(0.997)	(0.957)
Male CEO		0.035	0.034
		(1.378)	(1.329)
N	1,282	3,498	3,498
R-squared	0.100	0.197	0.199
Industry FE	Yes	Yes	Yes

Notes: This table reports the regression results of a double DID design using a plausible exogenous shock on director pay duration – *Seinfeld v. Slager* ruling in 2012. Variable *Post* takes the value of 1 if firms have upcoming CEO succession during 2012 – 2017, and 0 for those during 2006 – 2011. *Treat* equals one if the firm is incorporated in Delaware. *Suspect* equals one if the firm just meets or beats consensus analyst forecast by 2 cents. All regressions are estimated with industry-fixed effects included. The standard errors in all specifications are clustered by year, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively. All variable definitions are summarized in Appendix B.

Table 5 CEO Selection: Attributed-based Strategic Orientation

Variables	*LongTerm_CEO* (1)	*REM_Agg* (2)	*REM_Agg* (3)
$Dir\_Duration_{t-1}$	0.122*	–0.021***	–0.018**
	(1.895)	(–3.251)	(–2.808)
LongTerm_CEO			–0.018***
			(–3.880)
Firm size	0.104***	0.096***	0.097***
	(3.167)	(11.948)	(12.773)
ROA	–0.190	–0.409***	–0.416***
	(–0.637)	(–9.652)	(–10.144)
Market-to-book	0.001	–0.003***	–0.003***
	(0.227)	(–6.637)	(–6.553)
Loss	0.221***	–0.027***	–0.023***
	(3.056)	(–5.430)	(–4.235)
Strategy	–0.571***	0.269***	0.259***
	(–2.718)	(10.455)	(10.442)
Leverage	0.195	–0.050	–0.046
	(1.196)	(–1.698)	(–1.579)
Analyst following	0.007	–0.012***	–0.011***
	(1.439)	(–10.966)	(–11.032)
CF volatility	–0.436	–0.889***	–0.899***
	(–0.675)	(–5.919)	(–6.098)
Big4	0.105	–0.030*	–0.029*
	(0.963)	(–2.039)	(–1.940)
CEO pay		–0.039***	–0.036***
		(–5.413)	(–4.570)
CEO age		0.001	0.001
		(1.420)	(1.417)
Male CEO		0.024	0.002
		(1.748)	(0.095)
N	1,603	4,455	4,455
R-squared	0.121	0.200	0.204
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Notes: This table reports the channel tests on examining the indirect effect of director pay duration on real earnings management through CEO selection. Column (1) shows the influence of director pay duration on the extend of selecting a CEO with long-term strategic orientation. *LongTerm_CEO* is a composite measure to capture a CEO's long-term orientation after principal component analysis on CEO's gender, education, professional networks and past working experience. The effect of director pay duration on REM and the joint effect of director pay duration and CEO selection on REM are shown in columns (2) and (3), respectively. All regressions are estimated with industry- and year-fixed effects included. The standard errors in all specifications are clustered by year, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively. All variable definitions are summarized in Appendix B.

Table 6 CEO Compensation design

Variables	*CEO_Duration* (1)	*REM_Agg* (2)	*REM_Agg* (3)
$Dir\_Duration_{t-1}$	0.080***	–0.040***	–0.037***
	(4.855)	(–4.748)	(–4.733)
CEO_Duration			–0.032***
			(–3.232)
Firm size	0.002	0.097***	0.097***
	(0.111)	(12.556)	(12.252)
ROA	0.102	–0.446***	–0.443***
	(0.697)	(–6.038)	(–6.027)
Market-to-book	–0.001	–0.004***	–0.004***
	(–0.398)	(–6.754)	(–6.996)
Loss	–0.030	–0.018	–0.019*
	(–1.075)	(–1.690)	(–1.883)
Strategy	0.077	0.315***	0.317***
	(1.155)	(10.969)	(11.476)
Leverage	–0.100	–0.048*	–0.052**
	(–1.253)	(–2.141)	(–2.166)
Analyst following	–0.000	–0.009***	–0.009***
	(–0.134)	(–8.242)	(–8.233)
CF volatility	–0.995**	–1.000***	–1.031***
	(–2.843)	(–5.672)	(–5.891)
Big4	0.157	–0.044	–0.039
	(1.608)	(–1.295)	(–1.247)
CEO pay	0.269***	–0.033***	–0.024***
	(13.200)	(–4.521)	(–3.225)
CEO age	–0.007***	0.003***	0.002***
	(–3.044)	(4.322)	(4.338)
Male CEO	0.012	0.018	0.018
	(0.315)	(0.860)	(0.861)
N	2,559	2,559	2,559
R-squared	0.214	0.240	0.243
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Notes: This table reports the channel tests on examining the indirect effect of director pay duration on real earnings management through CEO compensation design. Column (1) shows the influence of pre-turnover director pay duration on subsequent CEO pay duration. The effect of director pay duration on REM and the joint effect of director pay duration and CEO pay duration on REM are shown in columns (2) and (3), respectively. All regressions are estimated with industry- and year-fixed effects included. The standard errors in all specifications are clustered by year, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively. All variable definitions are summarized in Appendix B.

Table 7 Cross-Sectional Analyses: Director Pay Duration and REM

Panel A: External monitoring by institutional investors

Variables	Low External Monitoring		High External Monitoring	
	IO_All	*IO_LongTerm*	*IO_All*	*IO_LongTerm*
	(1)	(2)	(3)	(4)
$Dir\_Duration_{t-1}$	–0.026**	–0.041***	–0.007	–0.003
	(–2.368)	(–4.099)	(–0.526)	(–0.210)
Firm size	0.097***	0.096***	0.126***	0.114***
	(10.584)	(8.319)	(11.545)	(14.354)
ROA	–0.581***	–0.501***	–0.215**	–0.352***
	(–6.698)	(–6.843)	(–2.681)	(–3.704)
Market-to-book	–0.004***	–0.004***	–0.002***	–0.003***
	(–7.048)	(–5.554)	(–3.363)	(–4.901)
Loss	–0.026*	–0.040**	–0.022*	–0.002
	(–1.909)	(–2.751)	(–2.011)	(–0.214)
Strategy	0.240***	0.254***	0.274***	0.270***
	(4.855)	(4.744)	(9.231)	(6.334)
Leverage	–0.086*	–0.027	–0.049	–0.109*
	(–1.983)	(–0.613)	(–0.939)	(–2.130)
Analyst following	–0.012***	–0.012***	–0.014***	–0.013***
	(–11.592)	(–8.005)	(–10.131)	(–10.415)
CF volatility	–0.876***	–0.836***	–1.111***	–0.922***
	(–3.631)	(–2.948)	(–7.116)	(–5.082)
Big4	–0.029	–0.049	–0.037	0.005
	(–1.186)	(–1.718)	(–1.739)	(0.248)
CEO pay	–0.045***	–0.043***	–0.057***	–0.055***
	(–6.164)	(–4.930)	(–6.444)	(–6.401)
CEO age	–0.001	0.001	0.003**	0.002**
	(–1.585)	(0.487)	(2.677)	(2.166)
Male CEO	0.024	0.045*	0.018	–0.008
	(0.677)	(1.825)	(0.497)	(–0.239)
N	1,904	1,904	1,904	1,904
R-squared	0.229	0.218	0.263	0.241
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Compare coef. difference			(1) – (3)	(2) – (4)
Chi-square stats			0.90	4.67
Prob > chi2			0.343	0.031

Panel B: Internal monitoring by subordinate executives

Variables	Low Internal Monitoring		High Internal Monitoring	
	Exec_Horizon	*Exec_PayRatio*	*Exec_Horizon*	*Exec_PayRatio*
	(1)	(2)	(3)	(4)
$Dir\_Duration_{t-1}$	–0.027**	–0.028**	–0.013	–0.018
	(–2.855)	(–2.670)	(–1.194)	(–1.728)
Firm size	0.075***	0.132***	0.112***	0.087***
	(8.515)	(12.501)	(9.520)	(10.554)
ROA	–0.391***	–0.411***	–0.426***	–0.420***
	(–5.746)	(–5.444)	(–6.785)	(–9.391)
Market-to-book	–0.004***	–0.003**	–0.002***	–0.003***
	(–4.589)	(–2.791)	(–2.980)	(–3.759)
Loss	–0.012	–0.027**	–0.041***	–0.032*
	(–1.258)	(–2.306)	(–5.712)	(–2.066)
Strategy	0.249***	0.299***	0.319***	0.200***
	(6.931)	(7.073)	(8.705)	(5.188)
Leverage	–0.078*	–0.076	–0.036	–0.032
	(–1.905)	(–1.313)	(–0.922)	(–1.204)
Analyst following	–0.011***	–0.011***	–0.011***	–0.011***
	(–7.867)	(–11.917)	(–10.786)	(–7.747)
CF volatility	–0.808***	–0.573**	–0.892***	–0.957***
	(–7.022)	(–2.910)	(–4.582)	(–5.519)
Big4	–0.006	–0.034**	–0.054**	–0.037
	(–0.221)	(–2.168)	(–2.945)	(–1.682)
CEO pay	–0.019**	–0.101***	–0.056***	–0.043***
	(–2.278)	(–6.412)	(–5.098)	(–4.929)
CEO age	0.001	0.002***	0.000	–0.001
	(1.719)	(3.004)	(0.202)	(–0.484)
Male CEO	0.049*	0.014	–0.010	0.053*
	(1.914)	(0.604)	(–0.292)	(1.926)
N	2,361	2,321	2,282	2,322
R-squared	0.209	0.244	0.223	0.210
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Compare coef. difference			(1) – (3)	(2) – (4)
Chi-square stats			0.90	0.41
Prob > chi2			0.342	0.520

Panel C: Financial distress or constraint

Variables	Low Financial Risk		High Financial Risk	
	Z_Score	*WW_Index*	*Z_Score*	*WW_Index*
	(1)	(2)	(3)	(4)
$Dir\_Duration_{t-1}$	–0.027***	–0.045***	0.019	0.030**
	(–3.979)	(–5.606)	(1.215)	(2.875)
Firm size	0.096***	0.069***	0.087***	0.117***
	(10.301)	(10.911)	(8.131)	(8.042)
ROA	–0.496***	–0.737***	–0.314***	–0.387***
	(–9.942)	(–6.580)	(–3.493)	(–7.206)
Market-to-book	–0.004***	–0.005***	–0.000	–0.001
	(–5.543)	(–7.513)	(–0.121)	(–1.341)
Loss	–0.029***	0.004	0.001	–0.052***
	(–3.658)	(0.387)	(0.085)	(–5.337)
Strategy	0.290***	0.193***	0.316***	0.368***
	(9.273)	(6.760)	(7.466)	(15.814)
Leverage	–0.034	–0.046	–0.012	–0.084**
	(–0.931)	(–1.186)	(–0.393)	(–2.269)
Analyst following	–0.012***	–0.009***	–0.006***	–0.014***
	(–11.708)	(–9.959)	(–5.599)	(–7.147)
CF volatility	–1.058***	–0.723***	–0.457	–0.811***
	(–12.903)	(–3.563)	(–1.593)	(–4.498)
Big4	–0.041**	–0.126***	0.010	–0.036*
	(–2.856)	(–3.461)	(0.284)	(–2.123)
CEO pay	–0.043***	–0.027***	–0.035**	–0.044***
	(–6.154)	(–4.109)	(–2.674)	(–4.663)
CEO age	0.000	0.001	0.002*	0.001
	(0.413)	(1.686)	(1.811)	(0.991)
Male CEO	0.024	0.021	0.022	0.009
	(1.371)	(0.811)	(0.730)	(0.304)
N	3,549	2,321	1,094	2,322
R-squared	0.215	0.239	0.295	0.225
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Compare coef. difference			(1) – (3)	(2) – (4)
Chi-square stats			7.93	41.12
Prob > chi2			0.005	0.000

Panel D: Voluntary vs. performance-induced CEO turnover

Variables	Voluntary Turnover (1)	Performance-induced Turnover (2)
Dir_Duration$_{t-1}$	–0.028***	–0.001
	(–2.961)	(–0.088)
Firm size	0.088***	0.115***
	(9.506)	(8.123)
ROA	–0.456***	–0.517***
	(–6.163)	(–6.077)
Market-to-book	–0.003***	–0.004**
	(–4.789)	(–2.691)
Loss	–0.014	–0.013
	(–1.382)	(–0.663)
Strategy	0.300***	0.223***
	(10.486)	(3.504)
Leverage	–0.054	–0.091
	(–1.234)	(–1.748)
Analyst following	–0.010***	–0.016***
	(–10.420)	(–8.684)
CF volatility	–1.224***	–0.532**
	(–7.589)	(–2.264)
Big4	–0.090***	0.006
	(–6.377)	(0.213)
CEO pay	–0.042***	–0.006
	(–4.606)	(–0.336)
CEO age	0.001	0.001
	(1.349)	(0.721)
Male CEO	–0.007	–0.033
	(–0.374)	(–0.586)
N	2,849	860
R-squared	0.204	0.344
Industry FE	Yes	Yes
Year FE	Yes	Yes
Compare coef. difference		(1) – (2)
Chi-square stats		3.65
Prob > chi2		0.056

Notes: This table reports the moderating effect of the relationship between director pay duration and real earnings management. The dependent variables are *REM_Agg* across all columns. Panel A examines the moderating effect of institutional investors monitoring. Panel B shows regression results of the moderating effect of subordinate executive monitoring. Panel C presents regression results of the moderating effect of financial distress/constraint. Panel D illustrates the effect between the subsamples of voluntary vs. performance-induced CEO turnover. All regressions are estimated with industry- and year-fixed effects included. The standard errors in all specifications are clustered by year, and the robust t statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively. All variable definitions are summarized in Appendix B.

Appendix A. Examples on director equity vesting schedules

- Director compensation in 2011 proxy statement of *Devon Energy Corporation*

"Annual Equity Awards. In June 2010, our Non-Management Directors were granted an annual award of 3,000 stock options and 2,000 shares of restricted stock under our 2009 Long-Term Incentive Plan. ... Options vest on the date of grant and are granted at an exercise price equal to the closing price of our common stock on that date. Unexercised options will expire eight years from the date of grant. With respect to restricted stock awards, 25% of each award vests on each anniversary of the date of grant. Cash dividends on shares of restricted stock are paid at the same times and in the same amounts as on other shares of our common stock."

Overall, stock options awarded to non-executive directors at *Devon Energy Corporation* vest immediately, while stock grants vest in equal installments over four years. This corresponds to a vesting period of 0 year for stock options, and 2.5 years for restricted stock awards.

- Director compensation in 2016 proxy statement of *Owens-Illinois, Inc*

"Each non-management director also receives on the date immediately following the date of the Annual Meeting of share owners, a grant of restricted stock units ("RSUs") under the 2004 Equity Incentive Plan for Directors of Owens-Illinois, Inc. with respect to a number of shares of Common Stock having a fair market value on the date of grant equal to $92,500, rounded up or down to nearest whole share of Common Stock. RSUs will be 100% vested on the first anniversary of date of grant ("Normal Vesting Date"), or earlier upon a director's termination of membership by reason of the director's death, disability or retirement. ...."

Overall, non-executive directors at *Owens-Illinois, Inc* receive stock awards that vest 100% after one year (cliff-vesting). Thus, the vesting period for the restricted stock awards is 1 year.

- Director compensation in 2016 proxy statement of *Eagle Materials Inc*

"The number of shares of restricted stock is determined as of the date of grant using the closing price of the Common Stock on the NYSE on the date of grant. The restricted stock granted to directors in August 2015 was earned at the time of grant; however, the shares will not become fully vested (unrestricted) until the director's service on the Board terminates because of the director's death or the director's retirement in accordance with the Company's director retirement policy, or under such circumstances as are approved by the Compensation Committee. During the restriction period the director will have the right to vote the shares…."

Overall, non- employee directors at *Eagle Materials Inc* receive stock awards that vest upon the termination of their service. In this case, we assume that the vesting period for the restricted stock awards is equivalent to the firm's average director tenure.

- Director compensation in 2019 proxy statement of *McKesson Corporation*

"Non-employee directors receive an automatic annual grant of RSUs with an approximate grant date value of $180,000. ... The RSUs granted to non-employee directors are vested upon grant. If a director meets the director stock ownership guidelines (currently $480,000, six times the annual cash retainer), then the director will, on the grant date, receive the shares underlying the RSUs, unless the director elects to defer receipt of the shares. …."

Overall, non- employee directors at *McKesson Corporation* receive stock awards that vest upon grant. This suggests that the vesting period for restricted stock grants is 0 year.

Appendix B. Variable definition

Variables	Description	Data Source
Dir_Duration$_{t-1}$	The logarithm of one plus the average of director pay duration on nomination committee pre-CEO turnover event. Pay duration is calculated by the value-weighted average of the vesting periods of director pay components, including cash fees, restricted stock units (RSUs) and stock options.	Execucomp, BoardEx and hand-collect
Abn_CFO	Negative one times abnormal cash flow from operation (CFO), where abnormal CFO is measured by the residuals from the corresponding industry-year regression in Equation (4).	Compustat
Abn_Disexp	Negative one times abnormal discretionary expenditures, where abnormal discretionary expenditures are measured by the residuals from the corresponding industry-year regression in Equation (1).	Compustat
Abn_Prod	Abnormal production cost measured by the residuals from the corresponding industry-year regression in Equation (2).	Compustat
REM_Agg	The sum of *Abn_Prod* and *Abn_Disexp.*	Compustat
REM_Agg_alt1	The sum of *Abn_CFO* and *Abn_Disexp.*	Compustat
REM_Agg_alt2	The sum of *Abn_CFO, Abn_Prod* and *Abn_Disexp.*	Compustat
Suspect	Indicator variable that takes the value of 1 if the firm just meets or beats consensus analyst forecast by 2 cents.	I/B/E/S
Firm size	The logarithm of one plus total asset using *ln(1+at).*	Compustat
Analyst following	The number of unique analysts following the firm.	I/B/E/S
Strategy	Firm investment policy based on capital intensity ratio using *ppent/at.*	Compustat
ROA	Firm earnings before interest and tax to asset ratio using *ib/at*.	Compustat
CF volatility	Firm's cash flow volatility, measured by the five-year standard deviation of operating cash flows (*oibdp - xint - txt*) divided by total assets (*at*).	Compustat
Loss	A dummy variable that takes the value of 1 if the firm reported losses in each of the previous two years based on *ib*.	Compustat
Market-to-book	The market value of equity to book value of equity ratio using *(csho×prcc_c)/ceq.*	Compustat
Leverage	Firm total debt to total asset ratio using *(dlc+dltt)/at.*	Compustat
Big4	Indicator variable that takes the value of 1 if the firm is audited by one of the four largest auditing firms based on the variable *au*.	Compustat
CEO pay	The total annual compensation to the CEO, measured by the logarithm of Execucomp variable *tdc2*.	Execucomp
CEO age	Current age of the CEO.	Execucomp
Male CEO	Indicator variable that takes the value of 1 if gender of the CEO is male, and 0 for female.	Execucomp
R&D intensity	R&D expense to asset ratio using *xrd/at, xrd* is replaced as 0 if missing.	Compustat
Stock return	Firm annual stock return, calculated using monthly holding period returns where ordinary dividends are reinvested at month-end.	CRSP
Post	Indicator variable that takes the value of 1 if the firm with CEO succession after 2012, and 0 otherwise.	Compustat

Variables	Description	Data Source
Treat	Indicator variable that takes the value of 1 if the firm is incorporated in Delaware.	McDonald and Loughran (2016)
Board size	Number of directors on board.	BoardEx
Board independence	The percentage of independent directors out of the total number of directors on board. Independent director is identified using the role description *RoleName*.	BoardEx
%Institutional ownership	The percentage of shares held by institutional investors.	Thomson 13f
Exec horizon	The average decision horizon (65 – age) of other subordinate executives.	BoardEx
Exec pay	The average annual compensation of other subordinate executives.	Execucomp
Exec directorships	The average number of outside directorships held by other subordinate executives.	BoardEx
%Female	The percentage of female directors on board.	BoardEx
Time on board	The average director tenure of the board.	BoardEx
Network size	The average network size of directors on board.	BoardEx
MBA degree	The percentage of directors holding an MBA degree on board.	BoardEx
Financial expert	The percentage of directors identified as financial experts on board.	BoardEx
CEO_Duration	CEO pay duration is calculated by the value-weighted average of pay components, including salary, bonus, non-equity incentive plans, restricted stock units (RSUs) and stock options.	Incentive Lab
LongTerm_CEO	A composite measure after principal component analysis on five variables: gender (female), MBA degree, total network size, whether have past experience as a Chief Financial Officer (CFO), and the number of unique industries in which the CEO has worked previously.	BoardEx

Appendix Tables

Table A1 Robustness Test: Propensity Score Matched Sample

Panel A: Firm characteristics of treated and matched firms

Variables	Treated Firms (N)	Mean. Treated	Mean. Control	Diff. Treated – Control	*t*-stats
Firm size	540	7.810	7.866	–0.056	–0.584
ROA	540	0.024	0.028	–0.004	–0.519
Market-to-book	540	5.253	4.095	1.158	0.560
R&D intensity	540	0.032	0.031	0.001	0.258
Loss	540	0.244	0.243	0.001	0.071
Leverage	540	0.263	0.263	–0.000	–0.001
CF volatility	540	0.037	0.037	0.000	0.001
Strategy	540	0.236	0.237	–0.001	–0.140
Stock return	540	0.080	0.080	–0.000	–0.006

Panel B: Regression results using propensity score matched sample

Variables	*REM_Agg* (1)	*REM_Agg* (2)
$Dir\_Duration_{t-1}$	–0.024***	–0.014
	(–3.683)	(–1.713)
$Dir\_Duration_{t-1} \times Suspect$		–0.052**
		(–2.311)
Suspect		0.001
		(0.033)
Firm size	0.102***	0.103***
	(11.706)	(11.777)
ROA	–0.384***	–0.382***
	(–7.691)	(–7.898)
Market-to-book	–0.005***	–0.005***
	(–12.634)	(–11.969)
Loss	–0.036***	–0.035***
	(–3.715)	(–3.745)
Strategy	0.178***	0.172***
	(5.241)	(4.966)
Leverage	–0.029	–0.031
	(–0.543)	(–0.575)
Analyst following	–0.012***	–0.011***
	(–8.726)	(–8.602)
CF volatility	–1.033***	–1.054***
	(–4.446)	(–4.581)
Big4	–0.006	–0.007
	(–0.287)	(–0.323)
CEO pay	–0.047***	–0.047***
	(–6.247)	(–6.382)
CEO age	0.001*	0.001
	(1.809)	(1.719)
Male CEO	0.000	0.001
	(0.021)	(0.044)
N	2,901	2,901

Variables	*REM_Agg* (1)	*REM_Agg* (2)
R-squared	0.223	0.226
Industry FE	Yes	Yes
Year FE	Yes	Yes

Notes: This table reports the regression results on the robustness test within a propensity score matched sample. Panel A displays the summary statistics on the firm characteristics between treated and control firms after propensity score matching. Panel B shows the main regression results. Variable $Dir\_Duration_{t-1}$ denotes the logarithm of one plus the average of director pay duration on nomination committee pre-CEO turnover event. *Suspect* equals one if the firm just meets or beats consensus analyst forecast by 2 cents. All regressions are estimated with industry- and year-fixed effects included. The standard errors in all specifications are clustered by year, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively.

Table A2 Robustness Test: Alternative Explanations

Panel A: Including additional governance controls

Variables	*REM_Agg* (1)	*REM_Agg* (2)
$Dir\_Duration_{t-1}$	–0.024***	–0.014*
	(–3.491)	(–1.781)
$Dir\_Duration_{t-1} \times Suspect$		–0.049**
		(–2.260)
Suspect		0.002
		(0.122)
Firm size	0.111***	0.112***
	(13.764)	(14.060)
ROA	–0.452***	–0.452***
	(–8.084)	(–8.193)
Market-to-book	–0.003***	–0.003***
	(–10.461)	(–10.120)
Loss	–0.021**	–0.021**
	(–2.692)	(–2.682)
Strategy	0.253***	0.249***
	(8.912)	(8.845)
Leverage	–0.054	–0.054
	(–1.278)	(–1.260)
Analyst following	–0.012***	–0.012***
	(–10.567)	(–10.547)
CF volatility	–0.774***	–0.786***
	(–4.867)	(–4.911)
Big4	–0.027*	–0.028*
	(–1.784)	(–1.849)
CEO pay	–0.044***	–0.044***
	(–6.939)	(–6.911)
CEO age	0.000	0.000
	(0.558)	(0.448)
Male CEO	0.004	0.004
	(0.238)	(0.261)
Board size	–0.007*	–0.007*
	(–1.848)	(–1.856)
Board independence	0.017	0.021
	(0.308)	(0.376)
%Institutional ownership	0.114***	0.113***
	(4.112)	(4.097)
Exec horizon	–0.004**	–0.004**
	(–2.853)	(–2.828)
Exec pay	–0.000**	–0.000***
	(–2.939)	(–3.028)
Exec directorships	0.024	0.025
	(0.803)	(0.858)
N	3,716	3,716
R-squared	0.218	0.220
Industry FE	Yes	Yes
Year FE	Yes	Yes

Panel B: Controlling for director-level characteristics

Variables	*REM_Agg* (1)	*REM_Agg* (2)
$Dir\_Duration_{t-1}$	–0.014*	–0.006
	(–1.911)	(–0.694)
$Dir\_Duration_{t-1} \times Suspect$		–0.042**
		(–2.138)
Suspect		–0.002
		(–0.126)
Firm size	0.118***	0.118***
	(12.921)	(13.011)
ROA	–0.416***	–0.414***
	(–9.276)	(–9.291)
Market-to-book	–0.003***	–0.003***
	(–6.728)	(–6.750)
Loss	–0.021***	–0.022***
	(–3.036)	(–3.234)
Strategy	0.245***	0.240***
	(9.987)	(9.713)
Leverage	–0.065**	–0.065**
	(–2.369)	(–2.336)
Analyst following	–0.010***	–0.010***
	(–9.651)	(–9.613)
CF volatility	–0.808***	–0.820***
	(–5.513)	(–5.574)
Big4	–0.033*	–0.034*
	(–2.008)	(–2.026)
CEO pay	–0.037***	–0.037***
	(–6.063)	(–6.033)
CEO age	0.001	0.001
	(0.991)	(0.895)
Male CEO	–0.005	–0.006
	(–0.380)	(–0.410)
%Female	–0.050*	–0.051*
	(–2.092)	(–2.043)
Time on board	–0.005***	–0.005***
	(–4.606)	(–4.777)
Network size	–0.000***	–0.000***
	(–9.829)	(–9.724)
MBA degree	–0.080***	–0.078***
	(–4.042)	(–3.827)
Financial expert	0.110***	0.110***
	(5.025)	(4.874)
N	4,515	4,515
R-squared	0.234	0.236
Industry FE	Yes	Yes
Year FE	Yes	Yes

Notes: This table reports the empirical findings after controlling for alternative explanations. Panel A displays the regression results after controlling for additional variables on corporate governance mechanisms, while Panel B reports the results after controlling for additional variables on director-level characteristics. All regressions are estimated with industry- and year-fixed effects included. The standard errors in all specifications are clustered by year, and the robust t statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively. All variable definitions are summarized in Appendix B.

Table A3 Robustness Test: Compensation Consultants

Variables	*REM_Agg* (1)	*REM_Agg* (2)	*REM_Agg* (3)	*REM_Agg* (4)
$Dir\_Duration_{t-1}$	–0.019**	–0.010	–0.016**	–0.005
	(–2.785)	(–1.333)	(–2.551)	(–0.703)
$Dir\_Duration_{t-1} \times Suspect$		–0.043**		–0.056**
		(–2.279)		(–2.790)
Suspect		–0.003		0.006
		(–0.208)		(0.329)
Firm size	0.096***	0.096***	0.094***	0.094***
	(11.604)	(11.711)	(13.913)	(14.246)
ROA	–0.412***	–0.410***	–0.412***	–0.411***
	(–9.734)	(–9.739)	(–8.961)	(–8.967)
Market-to-book	–0.003***	–0.003***	–0.003***	–0.003***
	(–6.966)	(–6.914)	(–5.874)	(–5.779)
Loss	–0.028***	–0.029***	–0.021***	–0.021***
	(–5.329)	(–5.566)	(–3.458)	(–3.630)
Strategy	0.277***	0.271***	0.272***	0.267***
	(11.388)	(11.318)	(14.304)	(14.362)
Leverage	–0.051*	–0.051	–0.046	–0.046
	(–1.757)	(–1.725)	(–1.646)	(–1.612)
Analyst following	–0.011***	–0.011***	–0.010***	–0.010***
	(–10.594)	(–10.566)	(–10.523)	(–10.548)
CF volatility	–0.876***	–0.888***	–0.904***	–0.915***
	(–6.042)	(–6.087)	(–5.988)	(–6.065)
Big4	–0.033**	–0.034**	–0.029*	–0.030**
	(–2.144)	(–2.173)	(–2.124)	(–2.197)
CEO pay	–0.038***	–0.038***	–0.029***	–0.029***
	(–5.659)	(–5.700)	(–4.341)	(–4.340)
CEO age	0.001	0.001	0.001	0.001
	(1.665)	(1.525)	(1.083)	(0.951)
Male CEO	0.022	0.022	0.023	0.023
	(1.474)	(1.463)	(1.625)	(1.620)
Top4_Consultant	–0.029***	–0.029***		
	(–4.123)	(–3.990)		
N	4,643	4,643	4,643	4,643
R-squared	0.198	0.200	0.242	0.244
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Consultant FE	No	No	Yes	Yes

Notes: This table reports the empirical findings after examining the effect of compensation consultants. *Top4_Consultant* takes the value of 1 if a firm engages a compensation consultant from one of the top four executive compensation consulting companies: Towers Perrin, Mercer, Frederic Cook and Hewitt. Columns (1) and (2) examine the robustness of the results by controlling for the influence of compensation consultants, while columns (3) and (4) reinforce the analysis by incorporating compensation consultant fixed effects. All regressions are estimated with industry- and year-fixed effects included. The standard errors in all specifications are clustered by year, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively.

Table A4 Alternative Measures of Director Pay Duration

Panel A: All pay components including cash, equity-based pay and all other compensation

Variables	*REM_Agg* (1)	*REM_Agg* (2)
Dir_Duration_alt$_{t-1}$	–0.021**	–0.011
	(–2.932)	(–1.427)
Dir_Duration_alt$_{t-1}$ × *Suspect*		–0.047**
		(–2.643)
Suspect		–0.001
		(–0.083)
Firm size	0.095***	0.095***
	(11.475)	(11.604)
ROA	–0.414***	–0.413***
	(–9.792)	(–9.781)
Market-to-book	–0.003***	–0.003***
	(–7.012)	(–6.967)
Loss	–0.028***	–0.029***
	(–5.413)	(–5.656)
Strategy	0.275***	0.270***
	(11.194)	(11.124)
Leverage	–0.051	–0.051
	(–1.723)	(–1.692)
Analyst following	–0.011***	–0.011***
	(–10.591)	(–10.569)
CF volatility	–0.871***	–0.884***
	(–5.963)	(–6.012)
Big4	–0.034**	–0.035**
	(–2.185)	(–2.214)
CEO pay	–0.039***	–0.039***
	(–5.847)	(–5.898)
CEO age	0.001	0.001
	(1.615)	(1.473)
Male CEO	0.023	0.022
	(1.507)	(1.494)
N	4,643	4,643
R-squared	0.197	0.199
Industry FE	Yes	Yes
Year FE	Yes	Yes

Panel B: Using the average pay duration for all non-employee directors

Variables	*REM_Agg* (1)	*REM_Agg* (2)
Dir_Duration_all$_{t-1}$	–0.023**	–0.016
	(–2.721)	(–1.703)
Dir_Duration_all$_{t-1}$ × *Suspect*		–0.038*
		(–1.839)
Suspect		–0.005
		(–0.293)
Firm size	0.095***	0.095***
	(11.239)	(11.366)
ROA	–0.414***	–0.412***
	(–9.848)	(–9.867)
Market-to-book	–0.003***	–0.003***
	(–7.035)	(–6.974)
Loss	–0.027***	–0.028***
	(–5.336)	(–5.583)
Strategy	0.273***	0.268***
	(11.121)	(11.068)
Leverage	–0.050	–0.050
	(–1.694)	(–1.658)
Analyst following	–0.011***	–0.011***
	(–10.599)	(–10.579)
CF volatility	–0.876***	–0.888***
	(–6.035)	(–6.054)
Big4	–0.034**	–0.035**
	(–2.226)	(–2.250)
CEO pay	–0.039***	–0.039***
	(–5.864)	(–5.857)
CEO age	0.001	0.001
	(1.538)	(1.410)
Male CEO	0.023	0.022
	(1.496)	(1.477)
N	4,643	4,643
R-squared	0.197	0.199
Industry FE	Yes	Yes
Year FE	Yes	Yes

Panel C: Unlogged director pay duration

Variables	*REM_Agg* (1)	*REM_Agg* (2)
Dir_Duration_unlogged$_{t-1}$	–0.007**	–0.004
	(–2.489)	(–1.266)
Dir_Duration_unlogged$_{t-1}$ × *Suspect*		–0.015*
		(–1.941)
Suspect		–0.013
		(–0.901)
Firm size	0.095***	0.095***
	(11.490)	(11.606)
ROA	–0.415***	–0.413***
	(–9.807)	(–9.837)
Market-to-book	–0.003***	–0.003***
	(–7.046)	(–7.017)
Loss	–0.028***	–0.029***
	(–5.381)	(–5.627)
Strategy	0.274***	0.269***
	(11.092)	(11.061)
Leverage	–0.051	–0.050
	(–1.726)	(–1.691)
Analyst following	–0.011***	–0.011***
	(–10.559)	(–10.531)
CF volatility	–0.870***	–0.883***
	(–5.968)	(–6.000)
Big4	–0.034**	–0.034**
	(–2.195)	(–2.195)
CEO pay	–0.039***	–0.039***
	(–5.861)	(–5.865)
CEO age	0.001	0.001
	(1.586)	(1.471)
Male CEO	0.023	0.023
	(1.517)	(1.516)
N	4,643	4,643
R-squared	0.196	0.199
Industry FE	Yes	Yes
Year FE	Yes	Yes

Notes: This table reports the empirical findings using alternative measures for director pay duration. In Panel A, the independent variable, *Dir_Duration_alt*$_{t-1}$ is the logarithm of one plus the average of director pay duration on nomination committee pre-CEO turnover event, where pay duration is alternatively calculated as the value-weighted average of the vesting periods of all pay components, including cash fees, restricted stock units, stock options and all other compensation. Panel B uses *Dir_Duration_all*$_{t-1}$, defined as the logarithm of one plus the average director pay duration of all non-employee directors pre-CEO turnover event. In Panel C, the independent variable, *Dir_Duration_unlogged*$_{t-1}$ represents the average of director pay duration on nomination committee pre-CEO turnover event. All regressions are estimated with industry- and year-fixed effects included. The standard errors in all specifications are clustered by year, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively.

Table A5 Alternative Measures of Suspect Firms

Variables	*REM_Agg* (1)	*REM_Agg* (2)
$Dir\_Duration_{t-1}$	–0.020***	–0.017**
	(–2.949)	(–2.711)
$Dir\_Duration_{t-1} \times Loss\_Avoid$		–0.233**
		(–2.491)
Loss_Avoid		–0.008
		(–0.112)
Firm size	0.095***	0.093***
	(11.517)	(11.855)
ROA	–0.414***	–0.426***
	(–9.792)	(–10.088)
Market-to-book	–0.003***	–0.003***
	(–7.018)	(–6.630)
Loss	–0.028***	–0.026***
	(–5.397)	(–4.475)
Strategy	0.275***	0.276***
	(11.183)	(11.309)
Leverage	–0.051	–0.052
	(–1.726)	(–1.722)
Analyst following	–0.011***	–0.011***
	(–10.591)	(–10.919)
CF volatility	–0.872***	–0.869***
	(–5.967)	(–5.948)
Big4	–0.034**	–0.037**
	(–2.181)	(–2.377)
CEO pay	–0.039***	–0.039***
	(–5.846)	(–5.829)
CEO age	0.001	0.001*
	(1.612)	(1.909)
Male CEO	0.023	0.023
	(1.508)	(1.509)
N	4,643	4,643
R-squared	0.197	0.200
Industry FE	Yes	Yes
Year FE	Yes	Yes

Notes: This table reports the empirical findings using an alternative measure to identify suspect firms that may engage in short-term behavior. Variable *Loss_Avoid* equals one if the firm's EBITDA divided by lagged market value falls between 0 and 0.01, capturing firms that narrowly avoid reporting losses. All regressions are estimated with industry- and year-fixed effects included. The standard errors in all specifications are clustered by year, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively.

Table A6 Principal Component Analysis: Long-term CEO

	(1) *Female*	(2) *MBA*	(3) *Network_Size*	(4) *CFO_Experience*	(5) *Num_Industry*
Loadings	0.851	0.874	0.915	0.616	0.215
Proportion Explained					29.36
Eigenvalue					1.468
Kaiser-Meyer-Olkin measure of sampling adequacy					0.526

Notes: This table reports the empirical results of the principal component analysis (PCA), including the factor loadings for five variables: *Female*, an indicator equal to one if the CEO is female; *MBA*, an indicator for whether the CEO holds an MBA degree; *Network_Size*, the CEO's total professional network size; *CFO_Experience*, an indicator for prior experience as a Chief Financial Officer; and *Num_Industry*, the number of unique industries in which the CEO has previously worked.

Table A7 Path Analysis through CEO Selection using SEM

Panel A: CEO attributes equation

$$Long-term\ CEO_{i,t+k} = \beta_1 Director\ duration_{i,t-1} + \beta_2 Size_{i,t+k} + \beta_3 ROA_{i,t+k} + \beta_4 MTB_{i,t+k} + \beta_5 Loss_{i,t+k} + \beta_6 Strategy_{i,t+k} + \beta_7 Leverage_{i,t+k} + \beta_8 Firm\ age_{i,t+k} + \varepsilon_{i,t+k}$$

Variables	*LongTerm_CEO* (1)
Dir_Duration$_{t-1}$	0.092**
	(2.497)
Firm size	0.152***
	(11.973)
ROA	–0.071
	(–0.394)
Market-to-book	0.002
	(0.837)
Loss	0.201***
	(4.784)
Strategy	–0.886***
	(–10.300)
Leverage	0.177*
	(1.933)
Firm age	0.001
	(0.285)

Panel B: Real earnings management equation

$$REM_{i,t+k} = \beta_1 Director\ duration_{i,t-1} + \beta_2 Long - term\ CEO_{i,t+k} + \beta_3 Size_{i,t+k} + \beta_4 ROA_{i,t+k} + \beta_5 MTB_{i,t+k} + \beta_6 Loss_{i,t+k} + \beta_7 Strategy_{i,t+k} + \beta_8 Leverage_{i,t+k} + \beta_9 Analyst\ following_{i,t+k} + \beta_{10} CF\ volatility_{i,t+k} + \beta_{11} Big4_{i,t+k} + \varepsilon_{i,t+k}$$

Variables	*Abn_Disexp* (1)	*REM_Agg* (2)
LongTerm_CEO	–0.008***	–0.016***
	(–3.837)	(–4.455)
Dir_Duration$_{t-1}$	–0.009*	–0.019**
	(–1.797)	(–2.188)
Firm size	0.037***	0.068***
	(15.651)	(16.645)
ROA	–0.080***	–0.467***
	(–3.028)	(–10.278)
Market-to-book	–0.002***	–0.003***
	(–6.149)	(–4.909)
Loss	–0.011*	–0.013
	(–1.804)	(–1.302)
Strategy	0.055***	0.121***
	(4.508)	(5.684)
Leverage	–0.023*	–0.081***
	(–1.757)	(–3.648)
Analyst following	–0.005***	–0.009***
	(–12.669)	(–14.574)
CF volatility	–0.496***	–0.938***
	(–8.480)	(–9.283)
Big4	–0.031***	–0.036**
	(–3.175)	(–2.144)
N	4,396	4,396
Model fitness:		
RMSEA	0.025	0.022
CFI	0.949	0.964
Chi-squared (model vs. saturated), *p*-value	59.253, 0.000	50.289, 0.000

Notes: This table presents the empirical findings from the structural estimation modeling used to conduct a path analysis examining the mediation effect through CEO selection. Panel A reports the results on how director pay duration influences the likelihood of appointing a CEO with a long-term strategic orientation. Panel B presents the results on how director pay duration affects real earnings management (REM), both directly and indirectly through CEO selection. The standard errors in all specifications are clustered by year, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively.

Table A8 Path Analysis through CEO Pay Duration using SEM

Panel A: CEO pay duration equation

$$CEO\ duration_{i,t+k} = \beta_1 Director\ duration_{i,t-1} + \beta_2 Size_{i,t+k} + \beta_3 ROA_{i,t+k} + \beta_4 MTB_{i,t+k} + \beta_5 Loss_{i,t+k} + \beta_6 Strategy_{i,t+k} + \beta_7 Leverage_{i,t+k} + \beta_8 Stock\ return_{i,t+k} + \beta_9 Return\ volatility_{i,t+k} + \beta_{10} CEO\ total\ pay_{i,t+k} + \beta_{11} CEO\ equity\ pay\ percentage_{i,t+k} + \varepsilon_{i,t+k}$$

Variables	*CEO_Duration* (1)
Dir_Duration$_{t-1}$	0.065***
	(3.104)
Firm size	0.034***
	(3.268)
ROA	0.346**
	(2.163)
Market-to-book	0.000
	(0.081)
Loss	0.007
	(0.237)
Strategy	0.197***
	(3.726)
Leverage	-0.103*
	(-1.806)
Stock return	-0.031
	(-1.175)
Return volatility	-0.871***
	(-3.990)
CEO pay	0.132***
	(7.427)
%CEO equity pay	1.199***
	(20.142)

Panel B: Real earnings management equation

$$REM_{i,t+k} = \beta_1 Director\ duration_{i,t-1} + \beta_2 CEO\ pay\ duration_{i,t+k} + \beta_3 Size_{i,t+k} + \beta_4 ROA_{i,t+k} + \beta_5 MTB_{i,t+k} + \beta_6 Loss_{i,t+k} + \beta_7 Strategy_{i,t+k} + \beta_8 Leverage_{i,t+k} + \beta_9 Analyst\ following_{i,t+k} + \beta_{10} CF\ volatility_{i,t+k} + \beta_{11} Big4_{i,t+k} + \beta_{12} CEO\ pay_{i,t+k} + \beta_{13} CEO\ age_{i,t+k} + \beta_{14} CEO\ gender_{i,t+k} + \varepsilon_{i,t+k}$$

Variables	*Abn_Disexp* (1)	*REM_agg* (2)
CEO_Duration	–0.017***	–0.035***
	(–2.810)	(–3.296)
Dir_Duration$_{t-1}$	–0.025***	–0.047***
	(–3.833)	(–4.220)
Firm size	0.045***	0.078***
	(12.186)	(12.253)
ROA	–0.008	–0.473***
	(–0.166)	(–5.743)
Market-to-book	–0.003***	–0.004***
	(–7.038)	(–5.225)
Loss	–0.009	–0.011
	(–1.065)	(–0.737)
Strategy	0.047***	0.095***
	(2.769)	(3.295)
Leverage	–0.006	–0.076**
	(–0.334)	(–2.467)
Analyst following	–0.004***	–0.007***
	(–8.423)	(–9.258)
CF volatility	–0.922***	–1.482***
	(–7.698)	(–7.220)
Big4	–0.072***	–0.125***
	(–2.866)	(–2.905)
CEO pay	–0.006	–0.009
	(–1.161)	(–0.904)
CEO age	0.001**	0.002*
	(2.478)	(1.732)
Male CEO	0.007	0.009
	(0.483)	(0.358)
N	2,216	2,216
Model fitness:		
RMSEA	0.034	0.041
CFI	0.982	0.974
Chi-squared (model vs. saturated), *p*-value	29.066, 0.000	37.896, 0.000

Notes: This table presents the empirical findings from the structural estimation modeling used to conduct a path analysis examining the mediation effect through the design of CEO pay duration. Panel A reports the results on how director pay duration pre-CEO turnover event influences the duration of CEO pay in subsequent years. Panel B presents the results on how director pay duration affects real earnings management (REM), both directly and indirectly through CEO pay duration. The standard errors in all specifications are clustered by year, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively.

Table A9 Shareholder Value and Firm Risk

Variables	*Tobin's Q* (1)	*Return volatility* (2)
$Dir\_Duration_{t-1}$	0.046**	–0.003**
	(2.243)	(–2.592)
Firm size	–0.437***	–0.007***
	(–12.492)	(–6.236)
ROA	3.508***	–0.110***
	(12.058)	(–6.153)
Market-to-book	0.049***	–0.000**
	(18.944)	(–2.290)
Loss	–0.311***	0.025***
	(–6.695)	(9.037)
Strategy	–0.449***	0.016*
	(–4.698)	(2.008)
Leverage	0.383***	0.040***
	(4.755)	(6.082)
Analyst following	0.050***	–0.000
	(9.203)	(–0.887)
CF volatility	3.554***	0.239***
	(5.381)	(5.925)
Big4	–0.086	–0.010**
	(–0.919)	(–2.322)
CEO pay	0.215***	–0.003
	(7.691)	(–1.733)
CEO age	–0.002	0.000
	(–0.743)	(1.126)
Male CEO	–0.193**	0.003
	(–2.199)	(1.145)
N	4,643	3,907
R-squared	0.458	0.504
Industry FE	Yes	Yes
Year FE	Yes	Yes

Notes: This table reports the empirical findings examining the effect of director pay duration on shareholder value and firm risk. Variable *Tobin's Q* is the ratio of the market value of assets to the book value of assets. *Return volatility* is measured as the standard deviation of monthly stock returns over the year. All regressions are estimated with industry- and year-fixed effects included. The standard errors in all specifications are clustered by year, and the robust *t* statistics are reported in parentheses. *, **, and ***, represent significance at the 10%, 5%, and 1% levels, respectively.