CEO Turnover and Director Reputation

Finance Working Paper N° 942/2023
December 2023

Felix von Meyerinck
University of Zurich and Hamburg Financial Research Center

Jonas Romer
University of St.Gallen

Markus Schmid
University of St. Gallen and ECGI

ECGI Working Paper Series in Finance

CEO Turnover and Director Reputation

Working Paper N° 942/2023

December 2023

Felix von Meyerinck
Jonas Romer
Markus Schmid

We thank Reena Aggarwal (AFA discussant), Yakov Amihud, Katsiaryna Bardos (EFA discussant), Patrick Bolton, Pang-Li Chen (SWFA discussant), Lauren Cohen, Cl´audia Cust´odio, Cesare Fracassi, Marc Goergen (WCGI discussant), Michael Halling, Harald Hau, Sheng Huang (Paris December Finance meeting discussant), Sofia Johan, O˘guzhan Karaka¸s (CICF discussant), Jonathan Karpoff, Elisabeth Kempf, Peter Limbach, Alberto Manconi, Kasper Meisner Nielsen, Junnatun Naym (FMA discussant), Per Ostberg, Yihui Pan (MFA discus- ¨ sant), Vincenzo Pezone (ECGC discussant), Vesa Pursiainen, Luc Renneboog, Zacharias Sautner, Laura Starks, Roberto Tubaldi (SFI Research Days discussant), Michael Ungeheuer, Milos Vulanovic (CFD discussant), Alexander Wagner, Tracy Wang (FIRS discussant), Michael Wittry, Ziwei Zhao, seminar participants at the University of St.Gallen, the University of Konstanz, IESEG School of Management, the University of T¨ubingen, the University of Basel, the University of Liechtenstein, and conference participants at the 2021 Midwest Finance Association (MFA) meeting, 2021 Southwestern Finance Association (SWFA) meeting, 2021 Swiss Society for Financial Market Research (SGF) conference, 2021 Eastern Finance Association (EFA) meeting, the 2021 SFI Research Days, the 2021 International Young Finance Scholars' (IYFS) conference, the 2021 Financial Management Association (FMA) meeting, the 2022 American Finance Association (AFA) meeting, the 2022 China International Conference in Finance (CICF), the 2022 Corporate Finance Day (CFD), 2022 Workshop on Corporate Governance and Investment (WCGI), the 2022 Paris December Finance Meetings, the 2023 Financial Intermediation Research Society (FIRS) conference, and the 2023 Erasmus Corporate Governance Conference (ECGC) for helpful comments and suggestions. Part of the paper was written while Felix von Meyerinck was visiting Tilburg University and while Jonas Romer was visiting the University of Texas at Austin.

Abstract

This paper analyzes the reputational effects of forced CEO turnovers on outside directors. We find that directors interlocked to a forced CEO turnover experience large and persistent increases in withheld votes at subsequent re-elections relative to non-turnover-interlocked directors. Directors are not penalized for an involvement in a turnover per se but for forced CEO turnovers that are related to governance failures by the board. Our results challenge the widespread view that forcing out a CEO can generally be understood as a sign of a well-functioning corporate governance

Keywords: CEO turnover, Director elections, Director reputation, CEO succession, Shareholder voting

JEL Classifications: G11, Q54, M14, G3

Felix von Meyerinck
Senior Research Associate
University of Zurich
Plattenstrasse 14
8032 Zurich, Switzerland
e-mail: felix.vonmeyerinck@bf.uzh.ch

Jonas Romer
Research Assistant
University of St.Gallen
s/bf-HSG Büro 51-4006 Unterer Graben 21
9000 St. Gallen, USA
e-mail: jonas.romer@unisg.ch

Markus Schmid*
Professor of Finance
University of St Gallen, Swiss Institute of Banking and Finance
Unterer Graben 21
CH-9000 St.Gallen, Switzerland
phone: +41 71 224 70 42
e-mail: markus.schmid@unisg.ch

*Corresponding Author

CEO Turnover and Director Reputation[☆]

Felix von Meyerinck[1], Jonas Romer[2], and Markus Schmid[3]

This version: December 2, 2023

Abstract

This paper analyzes the reputational effects of forced CEO turnovers on outside directors. We find that directors interlocked to a forced CEO turnover experience large and persistent increases in withheld votes at subsequent re-elections relative to non-turnover-interlocked directors. Directors are not penalized for an involvement in a turnover per se but for forced CEO turnovers that are related to governance failures by the board. Our results challenge the widespread view that forcing out a CEO can generally be understood as a sign of a well-functioning corporate governance.

Keywords: CEO turnover, Director elections, Director reputation, CEO succession, Shareholder voting

JEL: G32, G34

[☆]We thank Reena Aggarwal (AFA discussant), Yakov Amihud, Katsiaryna Bardos (EFA discussant), Patrick Bolton, Pang-Li Chen (SWFA discussant), Lauren Cohen, Cláudia Custódio, Cesare Fracassi, Marc Goergen (WCGI discussant), Michael Halling, Harald Hau, Sheng Huang (Paris December Finance meeting discussant), Sofia Johan, Oğuzhan Karakaş (CICF discussant), Jonathan Karpoff, Elisabeth Kempf, Peter Limbach, Alberto Manconi, Kasper Meisner Nielsen, Junnatun Naym (FMA discussant), Per Östberg, Yihui Pan (MFA discussant), Vincenzo Pezone (ECGC discussant), Vesa Pursiainen, Luc Renneboog, Zacharias Sautner, Laura Starks, Roberto Tubaldi (SFI Research Days discussant), Michael Ungeheuer, Milos Vulanovic (CFD discussant), Alexander Wagner, Tracy Wang (FIRS discussant), Michael Wittry, Ziwei Zhao, seminar participants at the University of St.Gallen, the University of Konstanz, IESEG School of Management, the University of Tübingen, the University of Basel, the University of Liechtenstein, and conference participants at the 2021 Midwest Finance Association (MFA) meeting, 2021 Southwestern Finance Association (SWFA) meeting, 2021 Swiss Society for Financial Market Research (SGF) conference, 2021 Eastern Finance Association (EFA) meeting, the 2021 SFI Research Days, the 2021 International Young Finance Scholars' (IYFS) conference, the 2021 Financial Management Association (FMA) meeting, the 2022 American Finance Association (AFA) meeting, the 2022 China International Conference in Finance (CICF), the 2022 Corporate Finance Day (CFD), 2022 Workshop on Corporate Governance and Investment (WCGI), the 2022 Paris December Finance Meetings, the 2023 Financial Intermediation Research Society (FIRS) conference, and the 2023 Erasmus Corporate Governance Conference (ECGC) for helpful comments and suggestions. Part of the paper was written while Felix von Meyerinck was visiting Tilburg University and while Jonas Romer was visiting the University of Texas at Austin.

[1]University of Zurich, Department of Banking and Finance, Plattenstrasse 14, 8032 Zurich, Switzerland, `felix.vonmeyerinck@bf.uzh.ch`.

[2]University of St.Gallen, School of Finance, Unterer Graben 21, CH-9000 St. Gallen, Switzerland, `jonas.romer@unisg.ch`.

[3]University of St.Gallen, School of Finance, Swiss Finance Institute (SFI), and European Corporate Governance Institute (ECGI), Unterer Graben 21, CH-9000 St. Gallen, Switzerland, `markus.schmid@unisg.ch`.

1. Introduction

Monitoring and, if necessary, firing a CEO is one of the most important decisions made by corporate boards (e.g., Fama, 1980; Fama & Jensen, 1983; Jenter & Kanaan, 2015; Jenter & Lewellen, 2021). However, evidence on the reputational consequences of forced CEO turnovers on involved directors is scarce. Moreover, the existing literature has conflicting views on the direction of such reputational consequences, which reflect conflicting views on the corporate governance signal transmitted by forced CEO turnovers. On the one hand, firing a poorly performing CEO may be a sign of effective monitoring by the board and thus indicate a well-functioning corporate governance. This view represents the predominant position taken in the extant empirical finance literature.[1] Under this view, directors who force out a CEO are expected to gain reputation. On the other hand, the need to fire the CEO may indicate a governance failure (e.g., Jensen, 1993; Marcel et al., 2017). Indeed, a better board may have replaced the CEO before negative performance consequences became observable or by ensuring a less disruptive transition to a new CEO. This view is supported by the case-based study of Mace (1971) and theoretical work.[2] Under this alternative view, directors involved in a forced turnover are expected to lose reputation. In this paper, we answer the question of whether directors gain or lose reputation from forcing out a CEO. This enables us to shed light on the corporate governance signal transmitted by a forced CEO turnover.

A test of the reputational effect of forced CEO turnovers on involved directors is subject to two major empirical challenges. First, turnover decisions are endogenous and often related to company performance (Fee et al., 2013). Second, widely used measures of director reputation, such as gains and losses of board memberships, are subject to endogenous selection by directors (Levit & Malenko, 2016). To address the first major endogeneity concern, we study directors with multiple directorships who force out a CEO at one firm (which we refer to as "turnover firm") and observe director-level reputation measures at the other firms (the "interlocked firms") on whose boards these directors sit. These interlocked firms, and the directors sitting on their boards, are largely unaffected by the characteristics of the turnover firm, including factors that led to the forced turnover. Hence, this setting allows us to isolate the impact of a forced CEO turnover on director reputation from company-level factors at the turnover firm. To address the second major endogeneity concern, we employ the change in the percentage of withheld votes (defined as the sum of votes withheld and votes against, divided by the total number of votes cast) in director re-elections as our primary measure of director reputation. Voting results reflect shareholders' and not directors' decisions. Hence, withheld votes constitute a

[1] See, for example, Weisbach (1988), Farrell & Whidbee (2000), Huson et al. (2001), Faleye (2007), Guo & Masulis (2015), Kempf et al. (2017), Dasgupta et al. (2018), Cai et al. (2021), and Jenter & Lewellen (2021).

[2] In Dow (2013)'s model, directors choose not to fire a bad CEO because they do not want to reveal that they made a mistake in hiring her in the first place. Aghamolla & Hashimoto (2021) show that while aggressive boards facilitate truthful communication between the CEO and the board, they tend to dismiss talented managers, resulting in costs to shareholders. The model of Adams & Ferreira (2007) suggests that it may be beneficial for shareholders to elect a board that is friendly towards the CEO and does not monitor her too closely and/or impose a significant threat of replacement. Hence, a forced turnover may signal an aggressive board to shareholders, one that may eventually turn out to be detrimental to shareholder value.

direct measure of shareholder satisfaction regarding individual directors that is not subject to endogenous selection by directors. By using director vote outcomes as a measure of director reputation, we rely on a growing stream of literature that shows that investors actively use withheld votes to evaluate directors' actions and that directors respond to changes in withheld votes (e.g., Ertimur et al., 2012; Brochet & Srinivasan, 2014; Aggarwal et al., 2019; Liu et al., 2020; Erel et al., 2021).[3]

To implement our identification strategy, we estimate generalized difference-in-differences regressions on a sample of turnover-interlocked director re-elections and a control sample of non-turnover-interlocked director re-elections. Specifically, we regress the change in the share of withheld votes in director re-elections on a treatment dummy variable indicating whether a director was involved in a forced CEO turnover at another firm since the last election as well as firm-level and director-level control variables. We first-difference outcome and control variables at the director-firm level. This ensures that time-invariant director characteristics, such as talent, and firm characteristics, such as corporate culture, do not influence our estimates.[4] Moreover, we include industry-year fixed effects. These fixed effects control for time trends, industry-specific trends, and unobserved time-varying industry shocks in withheld votes, ensuring that we compare changes in vote outcomes between turnover-interlocked and non-turnover-interlocked directors within the same industry and year. In further tests, we augment our baseline regression with either firm or director fixed effects. These fixed effects additionally remove time-invariant firm-specific and director-specific effects from the director re-election outcomes, allowing us to compare turnover-interlocked directors with other non-turnover-interlocked directors at the same firm or with the same director absent a forced CEO turnover.

Our results show that directors involved in a forced CEO turnover experience a significant increase in withheld votes at their subsequent re-election at interlocked firms compared to directors not interlocked to a forced turnover in the same industry and year. Director- and company-level control variables and different sets of fixed effects leave our results largely unchanged, suggesting that controlling for various time-variant and time-invariant characteristics does not affect our findings. Hence, forced turnovers do not appear to systematically coincide with other changes in director and firm characteristics at turnover-interlocked firms, providing strong support for the conjecture that forced turnovers represent exogenous shocks on interlocked directors' vote outcomes. Overall, our finding of an increase in withheld votes associated with involvement in a forced CEO turnover is consistent with directors suffering a reputational loss, which challenges the predominant view that forcing out a CEO is a sign of well-functioning corporate governance at the board level.

[3]For instance, Aggarwal et al. (2019) show that an increase in withheld votes in uncontested director elections leads to higher director turnover, committee demotions, and reduced opportunities in the director labor market.

[4]As we discuss below, our setting is akin to a staggered difference-in-differences setting in levels that includes two-way fixed effects (subject and time) but can easily accommodate repeated treatments (e.g., Heider & Ljungqvist, 2015). As we show below, our setting is unlikely to suffer from the "bad comparison" problem recently discussed in the literature (e.g., Callaway & Sant'Anna, 2021; Sun & Abraham, 2021; Baker et al., 2022).

In economic terms, we find that turnover-interlocked outside directors experience a 1.20 percentage point increase in withheld votes. While this increase may appear modest, it is important to note that vote support for directors is generally high, with the average of withheld votes in our sample amounting to 6.1%. Hence, an increase of 1.20 percentage points represents a sizeable increase of 19.6% over the sample mean. Moreover, recent research shows that modest increases in withheld votes often result in negative consequences for directors (e.g., Aggarwal et al., 2019). To put the economic magnitude of the documented effect into perspective, we conduct two additional analyses. First, we compare the increase in votes withheld resulting from a forced CEO turnover at an interlocked firm to the increase in votes withheld resulting from other corporate events at interlocked firms. We consider four alternative events that have been shown to hurt director reputation, including restatements (Srinivasan, 2005), class action lawsuits (Fich & Shivdasani, 2007), poison pill adoptions (Johnson et al., 2023), and bankruptcy filings (Gow et al., 2018). The increase in votes withheld associated with firing a CEO is larger than the increase in votes withheld resulting from the other reputational events and is only exceeded by a bankruptcy filing, arguably the most detrimental event for corporate shareholders. Still, the increase in votes withheld following a forced CEO turnover amounts to approximately half the increase resulting from a bankruptcy. Thus, these results further support our assertion that increases in votes withheld documented in this paper are sizable. Second, we test whether forced turnovers at interlocked firms have the potential to result in unusually high levels of withheld votes, defined as at least 15% of votes cast (Bach & Metzger, 2017). We find that the likelihood of experiencing very high levels of votes withheld increases significantly following a forced CEO turnover at an interlocked firm, again confirming that such turnovers have a sizeable impact on interlocked directors' withheld votes.

We also test whether reputational losses are confined to certain types of turnovers or depend on directors' involvement in the turnover. Results from these tests show that directors are not penalized for all turnovers, but for forced CEO turnovers that appear to be related to governance failures by the directors. Specifically, directors are penalized for reactive forced turnovers, firings during the most productive period of a CEO's tenure, poor monitoring of the CEO, and the lack of a successor to the outgoing CEO. In contrast, directors are not penalized for unforced turnovers or for hiring the wrong CEO in the first place. Importantly, we uncover no sub-sample for which we find significant reputational gains from an involvement in a forced CEO turnover. Taken together, these results suggest that a forced CEO turnover is not a credible signal of a board's monitoring ability. In contrast, they suggest that firing the CEO is often indicative of governance failure at the board level.

We also investigate which shareholders penalize directors for involvement in forced CEO turnovers at interlocked firms. Systematically penalizing directors for their actions across all board mandates requires shareholders to observe and evaluate directors' actions *and* to observe interlocked directorships. We hypothesize that institutional investors with significant ownership stakes in both the turnover and interlocked firms are most likely to fulfill these requirements. Our results confirm this conjecture: We find the negative vote effect to be concentrated in director re-elections in which institutional investors hold above-average ownership stakes in both the

turnover and the interlocked firms.

We conduct several tests to assess the internal validity of our main result. The identifying assumption central to a causal interpretation of difference-in-differences estimates is that treated and control samples follow parallel trends. We show that there is no significant difference in the change in withheld votes between turnover-interlocked and non-turnover-interlocked directors before forced turnovers, confirming that the parallel trends assumption holds. We also show that the timing of the changes in withheld votes coincides with that of the turnovers and that there is no subsequent reversal, suggesting that the reputational loss is indeed driven by the turnover and is persistent. In a placebo test, we show that directors joining the board of the turnover firm after a forced departure but before their next re-election at the interlocked firm do not experience an increase in withheld votes. This finding reconfirms that directors lose reputation for an involvement in a forced turnover, not for sitting on the board of a firm that recently fired the CEO.

A potential concern with the interpretation of our results is an omitted variable bias. Specifically, firms that experience poor stock price performance are more likely to force out their CEO (e.g., Dasgupta et al., 2018; Fee et al., 2018). As poor firm performance can also be linked to bad monitoring (e.g., Klein, 1998), investors might simply penalize directors for the poor firm performance, which resulted in the forced CEO turnover, rather than for the turnover. To distinguish between these two possible interpretations, we conduct a propensity score matching analysis. In this analysis, we match firms with a forced CEO turnover to firms without a forced turnover but with the same propensity to force out a CEO. We estimate the propensity of a forced CEO turnover using the model of Peters & Wagner (2014) that includes various company performance metrics and other firm, CEO, governance, and industry characteristics. Hence, turnover and matched control firms only differ in their decision to dismiss the CEO. Our results show that turnover-interlocked directors receive significantly more withheld votes than directors interlocked to matched firms without a forced turnover but otherwise similar characteristics. The economic magnitude of this negative vote effect is virtually identical to our baseline estimates, suggesting that the performance of the turnover firms does not constitute an omitted variable that drives our results.

A related concern is that there is an unknown – and thus omitted – reason why, in two firms with equally bad performance, one chooses to fire its CEO and the other does not. This unknown reason, in turn, might affect investors' inference about director ability. For instance, if a management failure drives bad performance, this failure may cause both a forced CEO turnover and a negative updating about director ability. In contrast, if bad performance is simply due to bad luck, this may neither result in a forced CEO turnover nor convey any signal about director ability. To address this concern, we extend the set of covariates in the estimation of propensity scores by a newspaper-based sentiment index. As mistakes of the leadership team can be expected to trigger more negative newspaper coverage than bad luck, accounting for news sentiment can be expected to produce a sample that is balanced in terms of management's involvement in the negative events that eventually lead to bad performance. Our results show that differences in newspaper sentiment, and thus a potential omitted variable

related to management failures prior to the forced CEO turnover, are unlikely to drive our results.

An alternative interpretation of our results is director distraction. Forced CEO turnovers may demand significant time and effort from directors involved in the turnover. Turnover-interlocked directors may thus divert their attention away from the interlocked firms (e.g., Masulis & Zhang, 2019; Stein & Zhao, 2019), resulting in a negative assessment by shareholders. We conduct two tests to rule out this alternative explanation. First, we make use of sudden deaths of CEOs. Sudden CEO deaths represent shocks to the time demand of directors similar to forced CEO departures. However, sudden CEO deaths represent CEO departures that are outside of directors' control and thus not expected to affect director reputation. If distraction drives our results, sudden CEO deaths are expected to trigger an increase in withheld votes at interlocked firms similar to that of forced CEO departures. Our results show that sudden CEO deaths do not affect directors' re-election results at interlocked firms. Second, we find no evidence of a decline in board meeting attendance rates of directors interlocked to a forced CEO turnover. Hence, we find no evidence supporting a distraction-based explanation.

In the final part of the paper, we follow prior research (Farrell & Whidbee, 2000; Ellis et al., 2021) and study the effect of forced CEO turnovers on future directorships. We acknowledge that this analysis may be subject to endogeneity problems. Directors may *choose* to leave some board seats voluntarily, for instance, due to reputational concerns connected to the past performance of the turnover firm, increased busyness as a result of the CEO succession, or disagreements over the turnover (Farrell & Whidbee, 2000; Ertimur et al., 2012; Levit & Malenko, 2016; Fahlenbrach et al., 2017; Masulis & Zhang, 2019; Ellis et al., 2021). To analyze director labor market outcomes empirically, we track our sample of turnover-interlocked directors and their board seats over the years following the forced CEO turnovers and compare them to other directors sitting on the board of the same interlocked firms. At the extensive margin, we find that directors involved in a forced CEO turnover have a higher propensity to leave the director labor market. At the intensive margin, we document that directors lose board seats five years after the turnover, with initially lost directorships, primarily at the turnover firm, being offset by newly acquired board seats in the subsequent four years. However, such newly acquired board seats are at smaller firms. Overall, these results suggest that reputational losses from involvement in a forced CEO turnover adversely affect director labor market opportunities.[5]

Our paper contributes to three strands of research. First, our paper adds to the literature on forced CEO turnovers. Many studies resort to forced CEO turnovers as an outcome variable when analyzing the benefits of good corporate governance (e.g., Weisbach, 1988; Farrell & Whidbee, 2000; Kempf et al., 2017; Dasgupta et al., 2018). This choice is supported by the empirical observation that stock prices typically react positively to forced CEO turnover announcements (e.g., Denis & Denis, 1995; Borokhovich et al., 1996; Huson et al., 2001, 2004).

[5]In further tests, we show that the loss of the directorship at the turnover firm, which may be associated with a decline in influence, network connections, and prestige, does not drive the documented increase in withheld votes. Hence, these results support a reputation-based explanation for the increase in withheld votes.

However, short-term event studies around the turnover announcement may not capture shareholders' assessment of the boards' performance in the monitoring and firing of a CEO as such turnovers often follow periods of poor company performance. While shareholders may greet the eventual decision to fire a poorly performing CEO, their assessment of the board's willingness and ability to monitor and replace the CEO may depend on how much value was destroyed before the turnover decision was made. We add to this literature by measuring investors' assessment of forced CEO turnovers through directors' vote outcomes at directorships held at other firms. Our setting allows us to separate idiosyncratic turnover firm characteristics as well as specific aspects of these turnovers from shareholders' assessment of forced turnover decisions. Our results show that forced CEO turnovers are associated with significant reputational losses for involved directors. This finding contradicts the general presumption in the extant empirical finance literature that forced CEO turnovers are a credible signal of boards' monitoring ability and indicate well-functioning corporate governance. Instead, our findings suggest that forced CEO turnovers are often perceived as a signal of poor monitoring by the board and, thus, may indicate a governance failure that becomes visible upon the announcement of a forced turnover.

The existing empirical literature on the consequences of forced CEO turnovers for involved directors is very limited and produces ambiguous findings. Farrell & Whidbee (2000) find that outside directors have a higher likelihood of leaving the turnover firm following a CEO dismissal, but that those directors who remain with the turnover firm have a higher likelihood of gaining additional board seats. In contrast, Ellis et al. (2021) investigate directors' learning from forced turnovers and find that directors involved in forced CEO turnovers, while showing some learning, do not gain other board positions following CEO dismissals. One potential reason for these ambiguous results is that both studies use future directorships as an outcome variable, which are a noisy proxy for director reputation and subject to endogeneity concerns, as explained above. We add to this sparse literature on the consequences for directors from firing a CEO by establishing an unambiguous negative link between forced turnovers and shareholder satisfaction as measured through director re-election outcomes at interlocked firms, an arguably cleaner and more granular measure of director reputation. Our results also suggest that the reputational loss that we document dominates the learning benefits found in Ellis et al. (2021).

Second, we contribute to the literature on director voting. This literature uses vote outcomes as a measure of shareholder satisfaction and director reputation (e.g., Ertimur et al., 2012; Brochet & Srinivasan, 2014; Liu et al., 2020; Erel et al., 2021). Results of recent studies, such as Aggarwal et al. (2019), suggest that even modest increases in withheld votes lead to higher director turnover, committee demotions, and reduced opportunities in the director labor market. We contribute to this literature by establishing that forced CEO turnovers significantly affect vote outcomes. In fact, our results show that forced turnovers have the second strongest effect on director vote outcomes among a set of corporate events that have been shown to hurt director reputation in prior research and are only exceeded by bankruptcy filings, arguably the most detrimental event for corporate shareholders.

Finally, our paper relates to the literature on board interlocks. Prior research shows that such board interlocks can propagate firm policies (Davis, 1991; Bizjak et al., 2009; Stuart & Yim,

2010; Bouwman, 2011; Chiu et al., 2013; Brown & Drake, 2014; Gopalan et al., 2021; Zhang, 2021; Foroughi et al., 2022). We extend this literature by showing that actions taken by directors at one firm affect shareholders' assessment of these directors at interlocked firms.[6] Showing that directors are held accountable for actions taken at another firm is important because it enables us to provide direct evidence on the disciplining effect of the director labor market, as suggested by Fama (1980) and Fama & Jensen (1983).

2. Sample and data

2.1. Sample selection

To compile our sample of CEO turnovers, we first identify all CEO departures from S&P 1500 firms between January 2003 and December 2017 in BoardEx. We then conduct extensive news searches in Factiva to determine the exact departure announcement date, the name of the replacement, whether the replacement was announced jointly with the departure, and the circumstances of the departure. We drop departures that result from the firm being acquired, the firm acquiring another company, or the firm selling or spinning off parts of its business because such events often indicate a strategic realignment of the firm. We also drop CEO departures that result from proxy contests, government interventions, and other types of active monitoring by parties other than the board of directors. Additionally, we remove departures for which we cannot find sufficient board meeting data in BoardEx and ISS. This leaves us with a sample of 1,773 CEO departures involving 1,739 CEOs at 1,266 turnover firms.

We follow previous literature in classifying CEO turnovers as either "forced" or "unforced" (e.g., Parrino, 1997; Parrino et al., 2003; Peters & Wagner, 2014; Jenter & Kanaan, 2015). We classify a turnover as forced if newspaper articles indicate that the CEO is fired, is forced out of her position, or departs due to unspecified policy differences. Parrino (1997) argues that CEOs departing below the age of 60 should be treated with special care. He classifies such turnovers as forced if i) newspaper articles do not indicate that the CEO left due to poor health or acceptance of another position (elsewhere or within the firm) or ii) articles report that the CEO is retiring, but firms do not announce the retirement at least six months before the succession. Our classification procedure follows that of Parrino (1997) but, in an attempt to increase the precision of the forced turnover classification, adds one additional criterion dealing with retained positions of the outgoing CEO at the turnover firm: We classify a turnover as unforced if the CEO does not leave the firm within one month after the announced departure date, which includes the termination of a board membership, but does not include a consulting position. The reason is that, after applying Parrino (1997)'s original algorithm, we discover that CEOs who are forced out of their role remain in an executive or board position at the turnover firm for an average of 1.49 years. Such a long lead-time between the departure announcement and

[6] In a contemporaneous paper, Johnson et al. (2023) show that directors involved in the adoption of a poison pill experience a decrease in vote margins and an increase in the probability of losing a board seat at the pill-adopting firm. In some of their tests, they expand their analyses to interlocked firms and show that directors experience a decrease in vote margins across all their directorships.

the effective departure suggests that the departure is not forced but consensual. The relatively short cut-off of one month ensures that our algorithm captures forced CEO turnovers only, and thus keeps the number of false positives low.[7] This results in 283 (16%) turnovers being classified as forced.[8]

Next, we identify all outside directors who serve on the boards of the 283 turnover firms at the forced CEO departure announcement date using BoardEx data.[9] We classify a director as turnover-interlocked if she serves as an outside director on the board of another firm besides the turnover firm at the turnover announcement date.

Our main outcome variable is the change in the share of withheld votes in director re-elections. Withheld votes are defined as the sum of votes withheld and votes against, divided by the total number of votes cast (e.g., Aggarwal et al., 2019).[10] We collect data on director re-elections from the ISS Voting Analytics database, which encompasses shareholder votes of Russell 3000 firms from January 2003 onward. Our sample ends in December 2017. We only consider regular director elections, which make up for 96.33% of director elections in ISS, and exclude, for instance, elections at special meetings and contested elections. We then match directors in ISS and BoardEx. Computing the change in withheld votes from one shareholder meeting to the next requires at least two consecutive election observations per director-firm pair.[11] We drop director re-elections for which we cannot retrieve sufficient stock price data from CRSP, accounting data from Compustat, institutional ownership data from Thomson Reuters, and board data from BoardEx and ISS. We also remove re-elections at financial and utility firms (SIC codes 6000-6999 and 4900-4999, respectively). Finally, we drop re-elections at the turnover firms and re-elections of the departing CEOs at other firms.

The resulting sample includes 88,406 director re-elections of 18,693 individual outside directors at 3,269 firms. 607 director re-elections concern directors interlocked to 206 forced CEO turnovers, while the remaining 87,799 director re-elections concern non-turnover-interlocked directors.

[7] This additional criterion changes 128 CEO turnovers, classified as "forced" using Parrino (1997)'s algorithm, to "unforced".

[8] Figure IA.2 in the Internet Appendix displays the distribution of turnovers as well as forced turnovers over time. The number of (forced) turnovers is fairly evenly distributed across sample years. Hence, our results are unlikely to be driven by market-wide spikes in forced CEO turnovers.

[9] We exclude inside (or executive) directors at both the turnover firms and our sample firms for two reasons. First, inside directors are primarily involved in daily business decisions and may thus be punished for the performance that leads to the turnover, while outside directors are responsible and punished for monitoring and, if necessary, firing the CEO (e.g., Fama, 1980; Fama & Jensen, 1983). Second, inside directors' vote results may depend on the perceived performance in their executive roles rather than in their role as corporate directors.

[10] In unreported robustness tests, we alternatively employ the vote margin, defined as the percent of votes for a director minus the percent against, minus the percent abstaining, and find very similar results.

[11] About one-fifth of re-elections in our sample take place at firms with a staggered board. We keep these observations in our sample but remove director re-elections that are further apart than five years or closer than one quarter from the previous election. In Section 4.1, we show that our baseline findings are not sensitive to dropping re-elections of directors at firms with staggered boards. We also show that the reputational effect is independent of the time between the turnover announcement and the re-election date.

2.2. Descriptive statistics

Table 1 reports summary statistics on the 206 forced CEO turnovers and 607 interlocked directors at the turnover firms. Panel A reports statistics on the forced turnovers. In 45% of turnover announcements (or 45% of interlocked directorships), firms announce the appointment of a full replacement CEO jointly with the departure. In 88% of turnovers (or 90% of interlocked directorships), we define the turnover as performance-induced using the model of Jenter & Lewellen (2021).[12] Following Hambrick & Fukutomi (1991) and Brochet et al. (2021), we categorize forced CEO turnovers based on the timing of the turnover within a CEO's tenure. Around 32% of departures (or 31% of interlocked directorships) occur during the first three years of a CEO's tenure (the "honeymoon period"), 66% (or 69% of interlocked directorships) during years three to 13 of tenure (the "harvest stage"), and 2% (or 1% of interlocked directorships) after more than 13 years of tenure (the "decline stage").

Panel B reports descriptive statistics on the 607 interlocked directors at the turnover firms. About 50% of turnover-interlocked directors are "co-opted", i.e., were appointed under the departing CEO (Coles et al., 2014). At the CEO departure announcement, 80% of interlocked directors are members of either the nominating or the compensation committee, making them more responsible for monitoring the CEO (e.g., Chhaochharia & Grinstein, 2009; Guo & Masulis, 2015).

Table 2 reports summary statistics on turnover-interlocked directors and interlocked firms. This sample constitutes the treatment group in our analysis. Panel A reports summary statistics on the characteristics of the interlocked directors. On average, directors are 64 years old, are female in 17% of all cases, and hold 3.1 additional board seats besides the one at the interlocked firm but including the one at the turnover firm. Panel B reports interlocked director characteristics at the interlocked firms. On average, turnover-interlocked directors receive 7.1% withheld votes. ISS recommends withholding votes for 7.4% of the interlocked directors. Panel C reports summary statistics on interlocked firms. On average, they have 14.7 billion total assets, generate around 14% return on assets, and institutional investors own 77% of their shares.

Table 3 replicates Table 2 for the non-turnover-interlocked directors and the firms on whose board they serve. This sample constitutes the control group in our analysis. While many differences across treatment and control samples are statistically significant, as indicated by the asterisks in Table 3, these differences in levels are unlikely to drive our results for at least two reasons. First, we estimate our regressions in first-differences at the director-firm level and saturate our models with different fixed effects (see Section 3.2). Second, we use propensity score-matched control samples to address concerns that our results are driven by selection rather than treatment. In these matched samples, all differences in director- and firm-level

[12] We classify a forced CEO turnover as performance-induced if the implied probability from Jenter & Lewellen (2021)'s two-probit model is above 50%. The results of the two-probit estimation are reported in Table IA.2 in the Internet Appendix. The percentage of performance-induced forced CEO turnovers is consistent with Jenter & Lewellen (2021), who find 82% of forced CEO turnovers to be performance-induced (see their Table 5, Panel A).

control variables between treatment and control samples are statistically insignificant. Still, our results remain qualitatively unchanged (see Section 4.2).[13]

3. The effect of forced CEO turnovers on interlocked directors' vote support

3.1. Univariate results

We first test for the reputational effect of forced CEO turnovers univariately. To this end, we compare the change in withheld votes in re-elections of directors interlocked to a forced CEO turnover with the change in withheld votes of directors not interlocked to a forced CEO turnover. We do so by regressing the change of withheld votes on a treatment indicator, that is, a dummy variable that equals one if a director forced out a CEO at another firm since the previous election, and zero otherwise. We estimate this regression repeatedly for re-elections three periods before to three periods after the forced turnover using a treatment dummy variable indicating a turnover-interlock with a lead or lag of up to three periods. The coefficient estimates for the treatment dummy variable obtained in these regressions are displayed in Figure 1. Absent a forced turnover, differences in changes in withheld votes between turnover-interlocked and non-turnover-interlocked directors are small, ranging from -0.60 to +0.28 percentage points, and are statistically insignificant. However, following a forced turnover, turnover-interlocked directors experience a significant increase in withheld votes of 1.36 percentage points relative to non-turnover-interlocked directors. This increase in withheld votes represents a 22.1% increase over the sample mean. Hence, these univariate results suggest that directors suffer a substantial reputational loss from a forced CEO turnover.[14]

3.2. Multivariate results

The results in the previous section suggest that forced CEO turnovers are associated with negative reputational effects, as proxied by the change in votes withheld. However, these results could be confounded by coinciding changes in a director's characteristics, such as changes in the number of outside board seats, changes in interlocked firm characteristics, such as changes in performance, or industry shocks that may affect the value of certain director characteristics. To control for such confounding factors, we estimate the following difference-in-differences regression:

$$\Delta_{ij} v_{ijt} = \beta T_{ijt,t-1} + \delta \Delta_{ij} X_{it} + \theta \Delta_{ij} Z_{jt} + \alpha_{st} + \varepsilon_{ijt}, \tag{1}$$

[13]Note: To obtain treatment status, directors need to hold at least two board seats at the CEO's departure, resulting in a significantly higher number of board seats compared to control directors. This additional condition for the treatment sample may cause some of the documented differences across the treatment and control samples as shown in Table 3. In Section 4.1, we conduct an additional robustness test, in which we require control directors to have at least two board seats as well. Again, results remain virtually unchanged.

[14]Figure IA.2 in the Internet Appendix displays changes in withheld votes around forced CEO turnovers for turnover-interlocked and non-turnover-interlocked directors separately. The figure shows that the increase in withheld votes of turnover-interlocked versus non-turnover-interlocked directors around the turnover is driven by an increase in withheld votes of turnover-interlocked directors and not a reduction in withheld votes of non-turnover-interlocked directors.

where i, j, s, and t index director, firm, industry, and years, respectively. Δ_{ij} is the first-difference operator between two elections of director i at firm j.[15] v_{ijt} is votes withheld of director i at firm j in year t, in percent. $T_{ijt,t-1}$ is the treatment indicator, that is, a dummy variable equal to one if director i is interlocked to a forced CEO turnover between his election at firm j in year t and his previous election at firm j, and zero otherwise. X_{it} and Z_{jt} are time-varying director-level and firm-level control variables. α_{st} are interacted industry-year fixed effects. ε_{ijt} is the error term. Standard errors are clustered at the Fama-French 48 industry level.[16]

By estimating the regressions in first-differences, we remove unobserved heterogeneity at the director-firm pair level. Such a specification is similar to a regression in levels with director-firm fixed effects but, unlike a specification in levels, it can easily accommodate repeated treatments (the possibility that a director is involved in multiple forced CEO turnovers over our sample period). Interacted industry-year fixed effects remove unobserved industry effects, time trends, and industry shocks. These steps ensure that the model captures the structural differences between the treatment and control samples discussed in Section 2.2. As time-varying director controls, X_{it}, we include the ISS vote recommendation indicator variable and the number of additional outside board seats. Director characteristics such as age, tenure, and gender are removed due to their time-invariant nature in a first-differences setting. The set of time-varying control variables at the firm level, Z_{jt}, is based on prior corporate governance and voting literature (e.g., Cai et al., 2009; Fischer et al., 2009; Matvos & Ostrovsky, 2010; Aggarwal et al., 2019; Johnson et al., 2023), and includes total assets, Tobin's Q, ROA, past buy-and-hold returns, board size, the fraction of outside directors on the board, the fraction of busy outside directors, and institutional ownership.

Results from estimating the difference-in-differences regression in Equation (1) are reported in Column 1 of Table 4. Following a forced CEO turnover, turnover-interlocked directors receive 1.20 percentage points more withheld votes than non-turnover-interlocked directors at firms in the same industry and year. In Column 2, we add firm fixed effects to the model. These fixed effects additionally absorb unobserved time-invariant firm-specific heterogeneity. This specification effectively compares turnover-interlocked directors to non-turnover-interlocked directors at the same firm. The results show that turnover-interlocked directors experience a significant increase in withheld votes of 0.88 percentage points over non-turnover-interlocked directors at the same firm. In Column 3, we augment our baseline regression with director fixed effects. These fixed effects remove unobserved time-invariant director characteristics and produce a within-person comparison of the turnover-interlocked directors to themselves absent a forced

[15] For most director-firm pairs, t and $t-1$ refer to the year t and $t-1$, respectively. However, in one-fifth of our sample, firms do not re-elect all directors each year, but in a staggered manner. Therefore, the time distance in the first-differencing varies across individual firms and directors based on the specific periodicity of the director re-elections. Hence, for directors of firms with a staggered board, t and $t-1$ refer to the current (t) and the last observable board meeting ($t-1$) for which we observe election outcomes. In Section 4.1, we show that our baseline findings are not sensitive to dropping re-elections of directors at firms with staggered boards. We also show that the reputational effect is independent of the time between the turnover announcement and the re-election date.

[16] Our results remain similar when we cluster the standard errors at the firm or the director level.

CEO turnover at an interlocked firm. Our results again remain robust in this most conservative specification: Directors interlocked to a forced turnover face a significant increase in withheld votes of 1.03 percentage points compared to the re-elections of the same directors absent a forced turnover. Hence, these findings are consistent with the notion that directors suffer a reputational loss across all board mandates following a forced CEO turnover.[17,18]

To gauge the economic magnitude of the documented vote effects, we first compare the observed increases in withheld votes to the sample mean. Directors generally receive high vote support, with a mean of only 6.1% of votes withheld (see Table 3). Hence, increases in withheld votes of between 0.88 and 1.20 percentage points, as reported in Table 4, represent a sizeable increase of between 14.3% and 19.6% over the mean. Indeed, recent research shows that even modest increases in withheld votes often have negative consequences for directors (e.g., Aggarwal et al., 2019). Second, we compare changes in votes withheld following forced CEO turnovers to changes in votes withheld following other corporate incidents that have been shown to adversely affect director reputation, including restatements (Srinivasan, 2005), class action lawsuits (Fich & Shivdasani, 2007), poison pill adoptions (Johnson et al., 2023), and bankruptcy filings (Gow et al., 2018). To this end, we replicate our baseline regression from Column 1 of Table 4 and replace the interlocked turnover dummy variable with alternative treatment indicators that are equal to one for directors interlocked to a firm that restates earnings, a firm that becomes subject to a securities litigation, a firm that adopts a poison pill, or a firm that files for bankruptcy, and zero otherwise. Results are reported in Table IA.4 in the Internet Appendix. We find that the increase in votes withheld resulting from a forced CEO turnover (1.2 percentage points) is approximately 2.5 times larger than the vote effect of restating earnings (0.5 percentage points), 1.5 times larger than the vote effect of securities litigation or a poison pill adoption (both about 0.9 percentage points), and half the vote effect of a bankruptcy filing (2.4 percentage points). Hence, the increase in votes withheld associated with firing a CEO is larger than the increase in votes withheld resulting from other reputational events and is only exceeded by the increase in withheld votes resulting from a bankruptcy filing, arguably the most detrimental event for corporate shareholders. Finally, we investigate whether forced CEO turnovers at interlocked firms have the potential to lead to unusually high levels of votes withheld, defined as at least 15% of votes cast (Bach & Metzger, 2017). The results in Table IA.5 in the Internet Appendix show that directors are between 3.6% and 4.0% more likely to experience such high levels of

[17]Coefficient estimates on the control variables are generally consistent with prior research (e.g., Cai et al., 2009). For example, a change of ISS's recommendation from elect to withhold or vote against increases withheld votes significantly. Similarly, directors who gain board memberships subsequently receive more withheld votes. On the other hand, improved firm performance or increases in growth opportunities reduce withheld votes.

[18]Recent work in econometrics (e.g., Callaway & Sant'Anna, 2021; Sun & Abraham, 2021) and finance (e.g., Baker et al., 2022) argues that standard DiD regressions with staggered treatment timing may not provide valid estimates of a causal effect even under random assignment of treatment. While this literature has yet to converge on how to correct for such bias, it agrees that the bias tends to be smaller the larger the share of never-treated units. In our case, the share of never-treated directors among all sample directors is 97.6%, suggesting that any bias, if present, is likely to be small. Still, to mitigate concerns that such a bias affects our estimates, we rerun our baseline regression from Table 4, first by completely excluding treated directors from the control group and, second, by excluding treated directors from the control group after the onset of treatment. Results are reported in Panels A and B of Table IA.3 in the Internet Appendix, respectively. Results are similar to those in our baseline regression, suggesting that such a bias is likely to be small and thus unlikely to affect our results.

votes withheld following a forced turnover at an interlocked firm, which is 44.2% to 49.1% higher than the sample mean. Thus, forced CEO turnovers often result in unusually high levels of withheld votes at interlocked firms.

In summary, these results suggest that directors suffer an economically large and statistically significant reputational loss across all board mandates following a forced CEO turnover. These findings contrast with the presumption that forced CEO turnovers credibly signal a board's monitoring ability and generally indicate good corporate governance. Moreover, our results survive when we control for a host of observable and unobservable firm and director characteristics, suggesting that forced CEO turnovers do not systematically coincide with other changes in director and firm characteristics. Thus, the findings support our conjecture that forced CEO turnovers represent exogenous shocks on interlocked directors' vote outcomes.

3.3. Are directors penalized for governance failures?

In this section, we test whether reputational losses are confined to certain types of CEO turnovers or whether they depend on directors' involvement in the turnover. Such cross-sectional tests allow us to shed light on the driving forces behind the documented reputational loss. While replacing a CEO is not expected to generally reflect negatively on involved directors, the need to fire the CEO may indicate a governance failure (e.g., Jensen, 1993; Marcel et al., 2017). For example, we would expect directors to be held accountable for CEO turnovers that are reactive and happen only after significant performance declines or poorly prepared CEO turnovers that have disruptive effects on corporate leadership. More generally, we would expect that directors suffer reputational losses for a failure to monitor the outgoing CEO and take timely and appropriate action to replace a poorly performing CEO. Directors may also suffer reputational losses for hiring the wrong director in the first place.

In our first test, we analyze whether directors are punished for firing a CEO and not for a CEO turnover more generally. While directors take an active role in forced CEO turnovers, which have a high potential for disruption, unforced CEO turnovers are often the result of a CEO retiring or taking over responsibilities on the board of directors. Unforced turnovers are thus expected to be smoother and less disruptive and consequently to be associated with smaller reputational losses than forced turnovers. To compare vote effects between forced and unforced turnovers, we augment the baseline regressions from Table 4 with an indicator variable equal to one if a director is involved in a turnover that we do not classify as forced while serving on another firm's board. Column 1 of Table 5 reports results from regressions with interacted year and industry fixed effects. While we find positive and statistically significant increases in withheld votes for both forced and unforced turnovers, the vote effect for unforced turnovers is about 60% smaller than the effect for forced turnovers. Columns 2 and 3 report results from regressions that additionally include firm and director fixed effects, respectively. The coefficients on the unforced turnover dummy variable turn statistically insignificant and become economically smaller, while the coefficients on the forced turnover dummy variable remain statistically significant and economically sizeable. These results suggest that directors

are penalized for forced turnovers, in which they took an active role and have a higher potential to be disruptive, and less so for unforced turnovers.

Second, we test whether reputational losses are larger for reactive turnovers than for timely, proactive turnovers. Ertugrul & Krishnan (2011) conjecture that non-performance-induced turnovers are indicative of a proactive board that fires an underperforming CEO before she can cause harm to firm value, while performance-induced forced turnovers are indicative of a reactive board that only reacts to poor performance. Hence, we expect the largest reputational losses to result from forced turnovers that are performance-induced. Following Ertugrul & Krishnan (2011), we use performance-induced turnovers, classified using the procedure proposed by Jenter & Lewellen (2021), as a proxy for late, reactive turnovers as they follow significant performance declines. We then replicate our baseline regressions with four dummy variables indicating interlocks to forced and unforced turnovers that are either performance-induced or non-performance-induced, and zero otherwise. In the specification with interacted year and industry fixed effects, reported in Column 4 of Table 5, we find positive and significant increases in withheld votes associated with performance-induced forced turnovers and insignificant reductions in withheld votes for non-performance-induced forced turnovers. Unforced turnovers are associated with significant increases in withheld votes that are economically much smaller than those of performance-induced forced turnovers. When adding firm or director fixed effects, as in Columns 5 and 6, we continue to find statistically significant and economically sizeable increases in votes withheld for performance-induced forced turnovers, while the effects of the three other turnover types are statistically insignificant. Hence, reputational losses from CEO turnovers are confined to performance-induced forced turnovers, which are indicative of reactive boards that act too late when damage is already done.

An alternative way to measure the board's reactiveness is to consider the timing of the forced departure within a CEO's tenure. The CEO tenure literature documents an inverted U-shaped relation between CEO tenure and firm value (e.g., Hambrick & Fukutomi, 1991; Henderson et al., 2006; Brochet et al., 2021). Brochet et al. (2021) show that in a large sample of public US companies, firm value peaks at about 13 years of CEO tenure on average. During the first three years of tenure, the "honeymoon stage", a newly appointed CEO gets to know the company and starts implementing changes. The board can assess whether the new CEO meets expectations, with a proactive board firing a disappointing CEO to prevent future harm (Ertugrul & Krishnan, 2011). Hence, we do not expect significant reputational damages for directors involved in forced turnovers during this stage. After a successful honeymoon stage, the CEO's organizational changes begin to bear fruit, and the CEO enters the "harvest stage". In the case of a poorly fitting CEO, who was still retained beyond the honeymoon stage, negative performance consequences will become observable. Hence, forced turnovers in the harvest stage may reflect a reactive board, and we expect reputational damages for involved directors. Finally, after about 13 years of tenure, the positive effects start to be outweighed by the adverse effects of a deteriorating CEO-firm match and increased power and entrenchment, even if the CEO was an excellent match to the firm at appointment and remained so during the harvest stage. During this "decline stage", the CEOs' performance contribution turns negative.

Turnovers during this stage are on average value increasing (e.g., Brochet et al., 2021), while not necessarily indicative of a reactive board, so we expect no adverse reputational effects for involved directors. We test this hypothesis by splitting the forced turnover dummy variable into three dummy variables indicating forced turnovers during these CEO life-cycle stages.[19] Results are reported in Column 1 of Table 6. We find large and significant increases in withheld votes for forced turnovers during the harvest stage and insignificant changes in withheld votes close to zero for turnovers during the honeymoon and the decline stages. These results suggest that reputational losses are confined to forced turnovers during the most productive period of a CEO's tenure, that is turnovers that likely reflect a reactive board that took too long to recognize and correct a CEO-firm mismatch.

We also test whether directors are not only penalized for firing the CEO but also for hiring the wrong CEO in the first place (e.g., Laux, 2010). Specifically, firing a CEO may reveal new information on the CEO's quality, the CEO-company match, and ultimately the CEO's value contribution to the company.[20] However, shocks to the quality of a CEO-firm match may result in a CEO firing, even though this CEO may have been an excellent match at the time of appointment (e.g., Eisfeldt & Kuhnen, 2013; Brochet et al., 2021). Thus, a CEO eventually fired for poor performance may still have been a reasonable choice at the time of appointment, and her firing may thus not reflect negatively on directors involved in the CEO's appointment. To insulate the involvement in the CEO's hiring from involvement in the CEO's firing, we augment our baseline specification with a dummy variable that is equal to one if a director held a board seat at a turnover firm at the time of the fired CEO's appointment but left the board before the turnover, and zero otherwise. Results are reported in Column 2 of Table 6. While the coefficient on the forced turnover-interlock dummy variable remains economically and statistically significant, the coefficient on the dummy variable capturing involvement in the CEO's hiring is economically small and statistically insignificant. This result suggests that directors are penalized for their involvement in the CEO's firing, but not the hiring of the fired CEO.

Next, we test whether directors are penalized for neglecting their monitoring duties towards the CEO. As a first proxy for directors' monitoring intensity and quality, we use the co-option measure of Coles et al. (2014). Coles et al. (2014) show that directors appointed after a CEO has resumed office (co-opted directors) are favorably inclined to this CEO and thus provide weaker monitoring. Hence, involvement in a forced turnover may reinforce shareholders' assessment of

[19] Note that this sample split corresponds to interaction terms between the forced CEO turnover dummy variable and the CEO life-cycle stage dummies, omitting stand-alone turnover characteristics. Stand-alone turnover characteristics are omitted because they are only defined for turnover-interlocked directors but not for non-turnover-interlocked directors.

[20] Note that previous research shows that both initial uncertainty about a CEO's fit to the company at appointment (e.g., Jovanovic, 1979; Allgood & Farrell, 2003; Ali & Zhang, 2015) as well as subsequent shocks to the CEO-firm match quality (e.g., Miller, 1991; Garrett & Pavan, 2012; Eisfeldt & Kuhnen, 2013) make it difficult to assess a CEO's quality at the time of appointment even *ex-post*.

co-opted directors' limited willingness to act in shareholders' best interests.[21] We would thus expect that the reputational loss of a forced CEO turnover is larger for co-opted directors. To test this conjecture empirically, we split the forced interlocked turnover dummy into two dummy variables depending on whether the director was appointed under the dismissed CEO. Results are reported in Column 3 of Table 6. Both coefficient estimates are positive, but the estimate for co-opted directors is about twice the size of the estimate for non-co-opted directors and only the former is statistically significant. This result confirms our conjecture that directors are penalized for a failure to monitor the CEO properly. Our second proxy variable for directors' ability and willingness to monitor senior management is based on board committee membership. The board committees generally entrusted with monitoring the CEO are the nominating and compensation committees (e.g., Chhaochharia & Grinstein, 2009; Guo & Masulis, 2015). Hence, we rerun our baseline regression with two dummy variables, one is equal to one for turnover-involved directors who are members of either the nominating or the compensation committee at the turnover firm, and zero otherwise, and the other variable is equal to one for turnover-involved directors who are not members of these two committees, and zero otherwise. Results are reported in Column 4 of Table 6. We find large positive and statistically significant increases in withheld votes for members of the nominating and compensation committees and small and statistically insignificant reductions for all other directors. This result suggests that directors suffer reputational losses from poor monitoring of the CEO.

Finally, we directly test whether reputational losses are larger for directors involved in poorly prepared forced CEO turnovers. Dalton & Dalton (2007) and Cvijanović et al. (2023) argue that the lack of an heir apparent to the outgoing CEO signals the board's unpreparedness and results in more disruptive turnovers. Hence, director reputation is expected to suffer more if no full replacement is announced jointly with the CEO's departure. To test this hypothesis, we replicate our baseline regression by replacing the forced CEO turnover interlock dummy variable with two dummy variables, one indicating involvement in a forced CEO departure with a full replacement announced simultaneously and one without such an announcement. Results are reported in Column 5 of Table 6. We find that directors involved in a forced CEO turnover with either an interim succession or no succession announced experience an increase in withheld votes that is twice the size of the increase in withheld votes of directors involved in a forced turnover with a full replacement announced. These results suggest that shareholders penalize directors for poorly prepared, disruptive CEO turnovers.

The results in this section show that directors are not penalized for all CEO turnovers but for forced turnovers that are related to governance failures by the board. Specifically, directors are penalized for reactive forced turnovers, firings during the most productive period of a CEO's tenure, poor monitoring of the CEO, and the lack of a successor to the fired CEO. In contrast,

[21] Note that co-opted directors were hired after the CEO took office, while non-co-opted directors were involved in the CEO's hiring. However, the previous test, reported in Column 2 of Table 6 shows that directors are not penalized for the hiring of the fired CEOs, suggesting that a test based on the co-option measure only captures shareholders' reaction to weak monitoring and not to a potential involvement in the CEO's hiring. Moreover, any reputational loss from hiring would generate the opposite effect, so the documented penalty for weak monitoring of co-opted directors would be a conservative estimate.

directors are not penalized for hiring the wrong CEO in the first place. Importantly, our analysis uncovers no sub-sample for which we find significant reputational gains from involvement in a forced turnover. Taken together, these results clearly contradict the general presumption in prior empirical finance research that a forced CEO turnover is a credible signal of a board's monitoring ability. In contrast, they suggest that firing the CEO is indicative of governance failure at the board level.

3.4. Which shareholders vote against turnover-involved directors?

In this section, we investigate which shareholders vote against directors involved in forced CEO turnovers at other firms. Systematically penalizing directors across all board mandates requires shareholders to i) observe and evaluate directors' actions, ii) observe interlocked directorships, and iii) systematically vote against directors across all firms where they hold board seats. Institutional investors with significant ownership stakes in both the turnover and interlocked firms are most likely to fulfill these requirements (e.g., He et al., 2019; Liu et al., 2020). Institutional investors are considered to be sophisticated (e.g., Gibson et al., 2004) and to impact the governance of their portfolio firms positively, independent of whether they follow an active (e.g., Brav et al., 2008) or passive investment approach (e.g., Appel et al., 2016).[22] Hence, we expect that turnover-interlocked directors receive more withheld votes if there is significant common ownership by institutional investors in both the interlocked and the turnover firm.

To test this conjecture empirically, we measure institutional investors' common ownership in turnover and the turnover-interlocked firms using the Thomson Reuters' institutional holdings (13F) database. We identify all institutional investors that report holdings in the turnover firms at the reporting date before the turnover announcements and holdings in the interlocked firms at the reporting date before the re-election date of turnover-interlocked directors. Common ownership is the lower value of the fraction of shares outstanding held in the turnover firm and the fraction of shares outstanding held in the interlocked firm. We then sum up common ownership across institutional investors at the director re-election level. Finally, we split the dummy variable indicating a turnover-interlock into two dummy variables, one indicating involvement in a forced CEO turnover with common ownership between the turnover and the interlocked firm above the sample mean (median) common ownership and one with common ownership below the sample mean (median).

Results from re-estimating our baseline regression with the split according to mean (median) common ownership are reported in Column 1 (2) of Table 7. We find that outside directors involved in a forced CEO turnover at an interlocked firm with above mean (median) common

[22]BlackRock, the world's largest institutional investor based on Assets Under Management, acted on various concerns by opposing 5,100 director re-elections globally between July, 2019 and June 30, 2020. Notably, BlackRock penalizes directors across all of their board mandates, for instance for holding too many board seats. For more information, see BlackRock's 2021 proxy voting guidelines (`https://www.blackrock.com/corporate/literature/fact-sheet/blk-responsible-investment-guidelines-us.pdf`) and their 2021 stewardship expectations guideline (`https://www.blackrock.com/corporate/literature/publication/our-2021-stewardship-expectations.pdf`).

ownership experience an increase in withheld votes that is 60% (74%) larger than the increase in withheld votes in response to turnovers at an interlocked firm with below mean (median) common ownership. These results indicate that informed institutional investors engaged in both the turnover and the interlocked firms are responsible for penalizing directors for their involvement in the turnover.[23]

4. Internal validity

4.1. Parallel trends, treatment reversal, pseudo treatments, and selection issues

The identifying assumption central to any difference-in-differences analysis is that treated and control observations share parallel trends before the onset of treatment. Specifically, turnover-interlocked directors and non-turnover-interlocked directors need to show insignificant differences in their re-election results prior to the forced CEO turnovers. Figure 1 shows the differences in the change in withheld votes between the turnover-interlocked directors and non-turnover-interlocked directors for a symmetric window covering seven re-elections around forced CEO turnovers. In the three re-elections prior to a forced CEO turnover, there are no significant differences in the changes in withheld votes between turnover-interlocked and non-turnover-interlocked directors, supporting the notion that the parallel trends assumption holds.

Figure 1 further shows no evidence of a treatment reversal. The differences in the change in withheld votes between turnover-interlocked directors and non-turnover-interlocked directors are economically small and statistically insignificant across all three post-turnover re-elections. To test for treatment reversal more formally, we rerun the baseline regression from Column 1 of Table 4 with additional lags for one and two re-election dates, respectively. Results are reported in Columns 1 and 2 of Table 8. The coefficient on the treatment indicator remains economically large and statistically significant in both regressions, while the coefficients on the lagged treatment indicators are small in magnitude and statistically insignificant. Hence, there is no evidence of a treatment reversal, implying that directors involved in a forced CEO turnover at another firm experience a persistent increase in withheld votes.

Additionally, we run placebo tests where treatment is set to $t-1$ and $t-2$, respectively. Hence, we look at re-elections that take place before the forced CEO turnover. Columns 3 and 4 present the results. The coefficient on the pseudo-treatment indicator is small and statistically insignificant in both regressions, suggesting that the observed increase in withheld votes is due to the forced turnover at the interlocked firm, as opposed to alternative factors, such as deteriorating performance of the turnover firm preceding the forced CEO turnover.

[23]These results suggest that the recent growth in institutional shareholdings and concentration of ownership in the portfolios of a few large asset managers, which triggered a discussion around the resulting incentives for firms to compete (e.g., Azar et al., 2018; Lewellen & Lowry, 2021), might also have a so-far unrevealed positive consequence: Substantial cross-shareholdings facilitate monitoring of directors across firms, resulting in stronger incentives to perform.

In a related placebo test, we analyze directors appointed to the board of the turnover firm after the forced CEO turnover, but before their subsequent re-election at the interlocked firm. If directors are penalized for involvement in a forced CEO turnover, directors appointed shortly after the turnover should, in contrast to directors on the board at the time of the turnover, not be held accountable for the turnover and thus not face an increase in withheld votes at their next re-election. To test this conjecture, we augment the baseline specification from Column 1 of Table 4 with an indicator variable that is equal to one if a director joined the board of the turnover firm after the departure of the CEO, but before the date of her next re-election at the interlocked firm. The results in Column 5 of Table 8 show that the coefficient on the placebo dummy variable is statistically insignificant while the coefficient on the treatment dummy variable remains virtually unchanged compared to the baseline regression. These results again suggest that it is an involvement in a forced CEO turnover that results in a negative reputational effect.

A potential concern with our analysis is a selection bias that results from our identification strategy. Specifically, obtaining treatment status requires interlocked directors to hold at least two outside directorships at the time of the turnover – one at the turnover firm and one at the interlocked firm. In contrast, directors in the control group are not required to hold multiple board seats. As a result, turnover-interlocked directors on average hold 1.4 board seats more than non-turnover-interlocked directors (see Tables 2 and 3). This selection bias may be problematic because directors with board overlaps may fulfill different roles than directors without board overlaps (e.g., Geng et al., 2021). However, such a selection bias is unlikely to drive our results for two reasons. First, by first-differencing at the director-firm level and including the change in the number of board seats as a covariate in our regressions, we control for effects that are directly related to changes in the number of board seats as well as unobservable director characteristics correlated with the number of board seats. Second, our results hold when we add director fixed effects to our regressions, which additionally control for potential selection effects at the director level. Nevertheless, to address the concern that selection rather than treatment drives our results, we rerun our main analysis from Table 4 on a sample that excludes all non-turnover-interlocked directors who hold no additional board seats from the control sample. The results are reported in Table IA.6 in the Internet Appendix and are virtually identical to the main results. Hence, a selection bias resulting from our identification strategy does not drive our results.

Finally, we analyze whether reputational effects are muted if interlocked directorships are re-elected in a staggered manner. For a staggered board, the time gap between a CEO's departure and the next director re-election can be as long as five years. Such a long time lag may result in a muted reputational effect if shareholders tend to forget about directors' actions in the distant past. In Column 1 of Table IA.7 in the Internet Appendix, we replicate the baseline regression from Column 1 of Table 4 but exclude firms with staggered boards. The estimate of the treatment effect is very similar to the one obtained in our baseline regression. In Column 2, we split the treatment indicator into two dummy variables depending on whether the time between the date of the turnover announcement and the date of the next re-election is below or

above one year, and zero otherwise, with time gaps above one year generally picking up staggered director re-elections. The coefficients on both variables are similar in magnitude and remain statistically significant. In Column 3 (4), we split the treatment indicator into two dummy variables depending on whether the time between the date of the turnover announcement and the date of the next re-election is below or above 0.75 (1.25) years. The results are very similar to those in Column 2. Taken together, these results suggest that variation in the time between elections of directors caused by staggered elections does not bias our results.

In summary, the analyses in this section show that there is no significant difference in the change in withheld votes between turnover-interlocked and non-turnover-interlocked directors before the forced turnover, confirming that the parallel trends assumption holds. Moreover, the negative reputational effects are persistent, showing no reversal in subsequent years.

4.2. Omitted variables and reverse causality

A potential concern with the interpretation of our results is an omitted variables bias. Specifically, firms that experience poor stock price performance are more likely to force out a CEO (e.g., Dasgupta et al., 2018; Fee et al., 2018). As poor firm performance can also be linked to bad monitoring (e.g., Klein, 1998; Brick & Chidambaran, 2010), investors might simply penalize directors interlocked to poorly performing firms. Under this alternative interpretation, causality would not run from forced turnovers to increases in withheld votes at turnover-interlocked firms. Instead, both forced CEO turnovers at the turnover firms and increases in withheld votes at the turnover-interlocked firms would be caused by poor firm performance of the turnover firms.

To address concerns of an omitted variables bias, we conduct a propensity score matching analysis, in which we match turnover firms to non-turnover firms with the same propensity to force out the CEO. We then compare withheld votes of directors interlocked to firms with a forced turnover to withheld votes of directors interlocked to matched firms that do not replace their CEO. By doing so, we obtain balanced treatment and control samples, comprising directors interlocked to firms that are similar in terms of the likelihood of firing the CEO but differ only in the effective turnover decision. This setting thus allows us to address the concern that factors that lead to turnover also drive increases in withheld votes of turnover-interlocked directors.

We calculate propensity scores using the forced turnover likelihood model of Peters & Wagner (2014). To estimate this model, we construct a turnover-firm panel that comprises each forced turnover in our sample and, for each forced turnover, all potential control firms within the S&P 1500. We remove potential control firms that experience a forced CEO turnover within five years before or after the turnover. This ensures that our sample of matched control firms does not include firms that have recently forced out or will soon force out their CEO. Additionally, we remove potential control firms for which we find no outside directors with interlocked directorships at other firms or no vote-share data at the interlocked firms. Our final sample for the propensity score matching consists of 183 forced turnovers, 1,822 distinct potential control firms, and 160,311 potential control firm-turnover pairs. A covariate balancing test between

the turnover firms and the potential control firms is presented in Panel A of Table IA.10 in the Internet Appendix. Absent any matching, the two samples differ significantly in most variables.

Results from estimating propensity scores are reported in Table IA.9 in the Internet Appendix.[24] Within each turnover stratum, we identify the control firm with the closest propensity score to the turnover firm.[25] We find the nearest neighbors for 181 of the 183 forced turnovers in our sample. The results of covariate balancing tests between the turnover and matched control firms are reported in Panel B of Table IA.10 in the Internet Appendix. They show that the turnover sample and the matched control sample do not differ significantly in terms of any of the variables. Common support is illustrated in Figure IA.3 in the Internet Appendix. Panel B shows that the density distributions of the propensity scores for the turnover and matched control sample align closely across the full spectrum of propensity scores after matching.

For each firm in our propensity score-matched sample, we identify all outside directors who also hold outside directorships at other firms in our vote-share sample, following the methodology described in Section 2. We identify 526 turnover-interlocked directorships held by 383 individual directors at 411 firms, and 586 matched non-turnover-interlocked directorships held by 418 individual directors at 453 matched firms.

Using this matched director sample, we estimate regressions similar to our baseline regressions in Table 4. Because this propensity score-matched sample is naturally cross-sectional, we estimate the regressions in levels and not in changes. Hence, we add time-invariant director-level control variables to these specifications. Table 9, Columns 1 to 3, present the results. Column 1 reports results from a regression without fixed effects. The regression reported in Column 2 additionally includes industry and year fixed effects. In Column 3, we augment the regression from Column 1 with turnover event fixed effects. This most restrictive specification compares withheld votes between turnover-interlocked directors and matched non-turnover-interlocked directors within each matched pair separately. Across all three columns, we find that directors interlocked to firms that forced out their CEO receive significantly more withheld votes than directors interlocked to firms with the same propensity of a forced turnover but no actual turnover. The magnitude of the coefficients in Columns 1 and 2 is virtually identical to the magnitude in the baseline regression in Column 1 of Table 4. The coefficient in the most restrictive specification in Column 3 indicates that interlocked directors on average receive 1.02 percentage points more withheld votes (16.6% over the unconditional sample mean) than non-turnover-interlocked directors serving on the board of firms with the same propensity to force out a CEO. These results suggest that the performance of the turnover firm is unlikely to

[24] We follow the suggestion of Peters & Wagner (2014) to use a logistic regression. Peters & Wagner (2014) use a linear probability model instead because they use the forced turnover likelihood model as a first stage in a two-stage model and, to ensure consistency with the second stage, resort to a linear probability model in the first stage as well.

[25] We improve match quality by imposing a maximum caliper width, i.e., a maximum allowed distance between the turnover and control firms' propensity score (e.g., Austin, 2011a; Lechner & Strittmatter, 2019). We follow Austin (2011b), who identifies an optimal caliper width of 0.2 times the pooled standard deviation of the logit of propensity scores.

constitute an omitted variable.[26]

The forced CEO turnover likelihood model of Peters & Wagner (2014) ensures that we obtain balanced treatment and control samples of directors interlocked to firms that are statistically indistinguishable across a wide set of observable firm characteristics, including various metrics of company performance. However, there may still be an unknown reason why, in two firms with equally bad performance, one chooses to fire its CEO and the other does not, and this reason might affect investors' inference about director ability. For example, bad performance in one firm might be due to mistakes of the leadership team, leading to both a forced turnover and negative updating about director ability. In contrast, bad performance in the other firm might be due to bad luck, neither leading to a forced turnover nor conveying any signal about director ability. To address this concern, we construct an alternative matched control sample of firms using the CEO turnover likelihood model of Peters & Wagner (2014) augmented with a newspaper-based sentiment index. The rationale behind adding newspaper sentiment is that mistakes of the leadership team can be expected to trigger more negative newspaper coverage than "bad luck". Matching on news sentiment thus yields a control sample that is balanced in terms of managerial involvement in negative events that lead to negative firm performance, and eventually CEO turnover. We use Ravenpack's aggregate event sentiment (AES) in the period preceding the turnover announcement as a proxy for firms' news sentiment.[27] A comparison between turnover and potential control firms absent matching shows that turnover firms show a significantly more negative news sentiment before the turnover (see Panel A of Table IA.12 in the Internet Appendix), supporting the conjecture that Ravenpack's AES captures negative news preceding turnover events. The results in Panel B of Table IA.12 in the Internet Appendix show that the propensity score matching results in treatment and control samples that are balanced in terms of all observable characteristics, including news sentiment. Propensity scores also align closely across the full spectrum of propensity scores after matching (see Figure IA.4 in the Internet Appendix). Using this sample based on an augmented matching approach, we re-estimate the regressions reported in Columns 1 to 3 of Table 9. The results are reported in Columns 4 to 6 and are virtually identical to those obtained when constructing the control sample with Peters & Wagner (2014)'s original CEO turnover likelihood model. Hence, differences in (negative) newspaper sentiment, and thus an omitted variable related to management failures that lead to a forced CEO turnover, are unlikely to drive the observed increase in withheld votes.

Another potential concern is reverse causality. Fos et al. (2018) find that the CEO turnover-performance sensitivity increases before director re-elections. Directors under threat of increased withheld votes might feel inclined to fire their CEO to signal a well-functioning corporate

[26] A concern with the use of the Peters & Wagner (2014) model for estimating propensity scores is that it relies on performance measures computed over one year, which may be too short to capture the entire effect of performance on forced turnovers. Hence, in a robustness test reported in Table IA.11 in the Internet Appendix, we replicate the analysis reported in Table 9 using performance measures computed over three years preceding the turnover when estimating propensity scores. The results remain very similar.

[27] Ravenpack's AES is a firm-level news sentiment score that ranges from zero to 100, with values below (above) 50 indicating negative (positive) sentiment. The variable is constructed daily, using a 91-day rolling window, and considers all news sources from the Dow Jones universe (among others, Dow Jones Newswires, the Wall Street Journal, Barron's, and MarketWatch).

governance. Under such a scenario, the increase in withheld votes at interlocked firms might reflect a general increase in withheld votes for the turnover-interlocked directors across all their board seats that started before the directors decided to force out their CEO. Forced turnovers might then be the result of increases in withheld votes rather than the other way around. To address this concern and to ensure that causality runs from forced CEO turnovers to increases in withheld votes, we again replicate our propensity score matching analysis and extend Peters & Wagner (2014)'s model by a variable that measures the mean change in withheld votes across all director re-elections at the last meeting before the matching date versus the previous meeting. This matched sample is expected to be well-balanced in terms of fading vote support for directors, which may eventually pressure them to fire the CEO and thus address the reverse causality issue. The results in Table IA.13 in the Internet Appendix indicate that turnover and control firms differ in terms of most observable characteristics before matching (Panel A), but are statistically indistinguishable after matching (Panel B). Most importantly, the matched sample is well-balanced in terms of pressure at the turnover firm that stems from director re-elections before the forced turnover. Propensity scores align closely across the full spectrum of propensity scores after matching (see Figure IA.5 in the Internet Appendix). The results from re-estimating Columns 1 to 3 of Table 9 using the matched sample that is based on this extended propensity score model are reported in Columns 7 to 9 of Table 9. Across all three columns, which include different fixed effects, we find that directors interlocked to firms that forced out their CEO receive significantly more withheld votes than directors interlocked to firms with the same propensity of a forced CEO turnover but no actual turnover *and* similar pre-turnover election outcomes. Hence, reverse causality is unlikely to drive our results.

In summary, the results in this section support our conjecture that neither poor performance, nor the (unobservable) reason behind the turnover decision, nor negative re-election vote pressure at the turnover firm drive our results. Instead, causality appears to run from forced CEO turnovers to increases in withheld votes at turnover-interlocked firms.[28]

4.3. Reputation versus distraction

An alternative interpretation of the increase in withheld votes following a forced CEO turnover is director distraction. A forced turnover may demand significant time and effort from directors involved in the process. Consequently, turnover-interlocked directors likely divert some of their limited attention to the turnover firm and may be penalized for it by interlocked firms' shareholders at the subsequent re-election. Such an explanation would be in line with Masulis & Zhang (2019) and Stein & Zhao (2019), who associate increased director distraction from various sources, including CEO turnovers at interlocked firms, with reduced monitoring efficiency.

We conduct two tests of the director distraction hypothesis. The first test explores sudden CEO deaths. Falato et al. (2014) show that committee peers of suddenly deceased directors

[28]These tests using matched samples also address the concern that our baseline estimates are biased because of a size imbalance between treated and control samples. Given that we continue to find results that are very similar to our baseline regression, it seems unlikely that a sample size imbalance drives the result in our main analysis.

experience a workload increase that negatively impacts the attention devoted to interlocked firms. Sudden CEO deaths likely require even more attention and time from the board of directors than sudden director deaths do. However, sudden CEO deaths are, by definition, outside of the board's control and thus are not expected to affect director reputation. Hence, if our results are driven by director distraction, we would expect to observe an increase in withheld votes for directors who experience the sudden death of a CEO at another firm on whose board they serve. To test this empirically, we re-estimate the baseline regression in Column 1 of Table 4, augmented with a dummy variable equal to one if the director is interlocked to another firm that experiences a sudden death of the CEO, and zero otherwise. To construct this variable, we search for CEO departures caused by sudden deaths as defined by Nguyen & Nielsen (2010). To increase sample size, in an alternative specification, we extend our measure of sudden CEO deaths to include cases where CEOs take health-related leaves of absence but die subsequently.[29] Results are reported in Columns 1 and 2 of Table 10. Consistent with our reputation-based explanation but inconsistent with a distraction-based explanation, the coefficients on the dummy variables indicating an interlocked outside directorship to a firm experiencing the CEO's death are statistically insignificant in both columns.

In a second test of the director distraction hypothesis, we test whether forced CEO turnovers affect board meeting attendance at interlocked firms. Masulis & Zhang (2019) show that directors suffering from external distractions typically attend fewer board meetings and exhibit reduced board commitment, adversely affecting the performance of the firms at which distracted directors hold board seats. If a forced turnover distracts a director in a significant manner, we would expect to observe a decline in board meeting attendance at interlocked firms. To test this conjecture, we re-estimate the baseline regression from Column 1 of Table 4 with the change in directors' board meeting attendance at interlocked firms as an outcome variable. We obtain board meeting attendance data from ISS, measured using a dummy variable set equal to one if a director attended less than 75% of all board meetings within a fiscal year, and zero otherwise. Since ISS only provides these data for S&P1500 firms, our sample size is reduced to 51,451 directorships. The results are reported in Column 3 of Table 10. The estimated coefficient is close to zero and not statistically significant, suggesting that there is no relationship between forced CEO turnovers at interlocked firms and directors' board meeting attendance. Hence, these results are again inconsistent with director distraction driving our results.

Overall, the results in this section show that exogenous shocks, which are confined to the workload of directors but do not reveal any information on directors' monitoring capabilities, do not result in increases in withheld votes. Together with the finding that forced CEO turnovers do not reduce board meeting attendance at the interlocked firms, these results suggest that our results are not caused by director distraction but by shareholders reassessing individual directors' capabilities to monitor and, if needed, fire CEOs.

[29] To ensure that these later deaths constitute a shock similar to sudden deaths, we restrict the extension to deaths that occur within 30 days of the sick leave announcement.

5. The effect of forced CEO turnovers on directors' labor market opportunities

So far, we have shown that forced CEO turnovers negatively affect director reputation, as measured by changes in withheld votes at interlocked firms. These reputational effects may extend into the director labor market and affect career prospects. Consistently, Aggarwal et al. (2019) show that directors who suffer an increase in withheld votes in uncontested elections are more likely to sustain reduced labor market opportunities. Similarly, Johnson et al. (2023) find that directors involved in the adoption of a poison pill suffer reputational damage that impacts their career outlooks. Consequently, we expect that directors' labor market opportunities are reduced following a forced CEO turnover.

To test this conjecture empirically, we conduct analyses akin to a difference-in-differences setting. Specifically, we analyze changes in directors' labor market opportunities between the forced CEO turnover announcement date and up to five years after the turnover (first difference) and compare these changes between turnover-interlocked directors and non-turnover-interlocked directors (second difference). To construct the sample for this analysis, we use our director re-election sample and retain all outside directors of turnover-interlocked firms at the CEO departure announcement date. Using BoardEx, we collect data on all outside directorships these directors hold at the CEO departure date and all directorships they gain or lose within one and five years after the departure. In these analyses, we include turnover event fixed effects, controlling for all turnover-specific effects, as well as firm fixed effects, absorbing time-invariant characteristics of the interlocked firms.

We first analyze whether directors involved in a forced CEO turnover have a higher propensity for losing outside directorships compared to other directors of the turnover-interlocked firms. Hence, our first outcome variables are two dummy variables equal to one if a director loses at least one of her directorships within one or five years following the forced turnover, respectively, and zero otherwise. The positive and significant coefficients reported in Columns 1 and 2 of Table 11 suggest that involvement in a forced turnover increases the likelihood of losing board seats. The obtained estimates indicate a 7.6 percentage point increase in the probability of losing a board seat over a one-year horizon and a 9.7 percentage point increase over a five-year horizon, respectively. The unconditional probabilities of losing a directorship in our sample are 13.1% and 46.0% over one and five years, respectively. Hence, the economic magnitude is sizeable: An involvement in a forced CEO turnover increases the probability of losing a directorship by 58% versus the sample mean over one year and 21% over five years.

Next, we test whether the loss in directorships following a forced CEO turnover is driven by a loss in the directorship at the turnover firm. To this end, we omit the directorship at the turnover firm when computing our dependent variables and rerun the regressions from Columns 1 and 2. Results reported in Columns 3 and 4 show that the coefficients on the forced interlocked dummy variable turn economically and statistically insignificant in both columns. Hence, the

overall loss in directorships is driven by a loss of directorships at the turnover firm.[30,31]

We also test whether directors can make up for the lost board seats at the turnover firm by gaining board seats at other firms. To this end, we replace the dependent variable with dummy variables that are equal to one if a director gains at least one new directorship within either one or five years following the turnover, respectively, and zero otherwise. The results are reported in Columns 5 and 6. They show that turnover-interlocked directors are significantly more likely to gain new board seats five years after the forced turnover, but not within one year after the turnover. Five years after the turnover, the likelihood of gaining a new board seat is 8.7 percentage points higher for turnover-interlocked directors versus non-turnover-interlocked directors, respectively. This coefficient estimate is very similar in magnitude to that for directorship losses reported in Column 2, suggesting that the gains in directorships at other firms substitute for the losses of directorships at the turnover firms. To explicitly test for such substitution effects, we again replicate the analysis and use a dummy variable that indicates a net loss of outside directorships as the dependent variable. The results reported in Columns 7 and 8 confirm our conjecture: On average, directors involved in a forced turnover have a 7% higher likelihood of losing a directorship in the first year after the turnover. However, this initial loss, driven by the loss of the directorship at the turnover firm, is offset by a higher likelihood of gaining directorships in subsequent years. As a result, net losses of directorships five years after the forced CEO turnover do not differ between turnover-interlocked directors and non-turnover-interlocked directors sitting on the boards of the same firms.

A reputational loss may show not only in the number but also in the quality of the outside directorships. Board seats at larger firms are associated with higher compensation packages (Ryan & Wiggins, 2004), more power and prestige (Shivdasani, 1993; Adams & Ferreira, 2008; Masulis & Mobbs, 2014), and better networking opportunities (Yermack, 2004; Fich, 2005). Hence, we analyze the change in the aggregate total assets represented by all firms at which a director holds an outside board seat in the first year after the forced CEO turnover or the first five years after the turnover.[32] To account for the skewness in the distribution of this variable, we

[30]We also test whether the cross-sectional patterns on votes withheld described in Section 3.3 translate into the labor market and affect directors' losses of directorships. Results from cross-sectional regressions using the loss of board seats as a dependent variable reported Table IA.15 in the Internet Appendix are in line with those in Section 3.3.

[31]Our finding that turnover-interlocked directors face a significant risk of losing their directorship at the turnover firm may raise the concern that increases in withheld votes documented in Section 3 are driven by shareholders' dissatisfaction with turnover-interlocked directors losing their board seat in the turnover firm, which may be accompanied by a decline in influence, network connections, and prestige. To address this concern, we re-estimate our regressions from Columns 1 to 3 of Table 9 with a dummy variable set equal to one if a director leaves the turnover/matched control firm before the next re-election at the interlocked firm, and zero otherwise, and an interaction term between this variable and the dummy variable for an interlock to a forced turnover. Results reported in Table IA.16 in the Internet Appendix show that neither the interaction term nor the standalone variable indicating the loss of a board seat at the turnover/matched control firm is statistically significant, suggesting that the increase in withheld votes of turnover-interlocked directors is independent of a loss of their board seat at the turnover firm.

[32]In Table IA.14 in the Internet Appendix, we replicate this analysis using the change in market capitalization as the dependent variable and find very similar results.

apply the inverse hyperbolic sine transformation (Burbidge et al., 1988).[33] Results are reported in Columns 1 and 2 of Table 12. They show that turnover-interlocked directors experience a significant decline in aggregate total assets represented by their board seats compared to non-turnover-interlocked directors. Hence, board seats lost, in particular at the turnover firm, tend to be replaced by new board seats at smaller firms, resulting in a decline in total assets represented by the entire portfolio of firms at which turnover-interlocked directors hold board seats.

An even more drastic labor market consequence than losses of directorships or declines in the quality of directorships is a complete exit from the labor market. In our final set of tests, we thus study whether directors involved in a forced turnover have a higher propensity to leave the director labor market post-turnover. To this end, we construct a dummy variable that is equal to one if the total number of board seats held declines to zero and the director is still alive, and zero otherwise. Results in Columns 3 and 4 show that the probability of exiting the director labor market increases significantly following a forced turnover. Specifically, directors interlocked to a forced turnover are 12.1 (9.2) percentage points more likely to exit the director labor market one (five) year(s) after a forced turnover relative to directors on the same board not interlocked to a turnover. These findings provide strong evidence that involvement in a forced CEO turnover has adverse effects on director labor market opportunities.

In summary, this section shows that directors' labor market opportunities are reduced following a forced CEO turnover and thus supports our main finding of a reputational loss resulting from involvement in a forced turnover. However, it is important to note that all outcome variables used here may be subject to endogeneity concerns, in particular, that directors may choose to either terminate some board seats or attempt to solicit new board appointments for reasons unobservable to the researcher (Ertimur et al., 2012; Levit & Malenko, 2016).

6. Conclusion

Monitoring and, if necessary, firing the CEO of a corporation is one of the primary tasks of the board of directors (e.g., Fama, 1980; Fama & Jensen, 1983; Jenter & Kanaan, 2015; Jenter & Lewellen, 2021). Hence, directors' involvement in forced CEO turnovers can be expected to be assessed by the market and to affect directors' reputation. However, research studying the consequences of forced CEO turnovers on involved directors is scarce. Such analysis is empirically challenging as the turnover decision is endogenous and often related to company performance (Fee et al., 2013). Moreover, the outcome variables commonly used to measure reputational effects for directors, such as gains and losses in the number of board memberships, are subject to endogenous selection by directors (Levit & Malenko, 2016). We overcome these challenges by using changes in the percentage of withheld votes in director re-elections as our primary outcome variable and observing this outcome at interlocked directorships.

[33] Note that we cannot use the natural logarithm of the change in total assets as these changes can take on negative values.

This paper establishes novel evidence on the reputational effects of forced CEO turnovers on directors involved in the turnover decision. We find that directors interlocked to a forced turnover experience an economically large and statistically significant increase in withheld votes at subsequent director re-elections, suggesting that directors involved in a forced turnover lose reputation. Additional tests show that directors are not penalized for involvement in a CEO turnover *per se*, but for forced CEO turnovers that are related to governance failures by the board.

The results presented in this paper challenge the predominant view that forcing out a CEO is a sign of well-functioning corporate governance at the board level. Our results support an alternative view: Depending on the timing and circumstances of the turnover, forcing out a CEO can be perceived as a signal of failure in the monitoring, and in particular the firing of the CEO, and thus be detrimental to a director's reputation.

References

Adams, R. B., & Ferreira, D. (2007). A theory of friendly boards. *Journal of Finance*, *62*, 217–250.

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

Aggarwal, R., Dahiya, S., & Prabhala, N. R. (2019). The power of shareholder votes: Evidence from uncontested director elections. *Journal of Financial Economics*, *133*, 134–153.

Aghamolla, C., & Hashimoto, T. (2021). Aggressive boards and CEO turnover. *Journal of Accounting Research*, *59*, 437–486.

Ali, A., & Zhang, W. (2015). CEO tenure and earnings management. *Journal of Accounting and Economics*, *59*, 60–79.

Allgood, S., & Farrell, K. (2003). The match between CEO and firm. *Journal of Business*, *76*, 317–341.

Appel, I. R., Gormley, T. A., & Keim, D. B. (2016). Passive investors, not passive owners. *Journal of Financial Economics*, *121*, 111–141.

Austin, P. C. (2011a). An introduction to propensity score methods for reducing the effects of confounding in observational studies. *Multivariate Behavioral Research*, *46*, 399–424.

Austin, P. C. (2011b). Optimal caliper widths for propensity-score matching when estimating differences in means and differences in proportions in observational studies. *Pharmaceutical Statistics*, *10*, 150–161.

Azar, J., Schmalz, M. C., & Tecu, I. (2018). Anticompetitive effects of common ownership. *Journal of Finance*, *73*, 1513–1565.

Bach, L., & Metzger, D. (2017). How do shareholder proposals create value? Working paper. Stockholm School of Economics & Swedish House of Finance.

Baker, A. C., Larcker, D. F., & Wang, C. C. (2022). How much should we trust staggered difference-in-differences estimates? *Journal of Financial Economics*, *144*, 370–395.

Bizjak, J., Lemmon, M., & Whitby, R. (2009). Option backdating and board interlocks. *Review of Financial Studies*, *22*, 4821–4847.

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

Bouwman, C. H. (2011). Corporate governance propagation through overlapping directors. *Review of Financial Studies*, *24*, 2358–2394.

Brav, A., Jiang, W., Partnoy, F., & Thomas, R. (2008). Hedge fund activism, corporate governance, and firm performance. *Journal of Finance*, *63*, 1729–1775.

Brick, I. E., & Chidambaran, N. K. (2010). Board meetings, committee structure, and firm value. *Journal of Corporate Finance*, *16*, 533–553.

Brochet, F., Limbach, P., Schmid, M., & Scholz-Daneshgari, M. (2021). CEO tenure and firm value. *The Accounting Review*, *96*, 47–71.

Brochet, F., & Srinivasan, S. (2014). Accountability of independent directors: Evidence from firms subject to securities litigation. *Journal of Financial Economics*, *111*, 430–449.

Brown, J. L., & Drake, K. D. (2014). Network ties among low-tax firms. *The Accounting Review*, *89*, 483–510.

Burbidge, J. B., Magee, L., & Robb, A. L. (1988). Alternative transformations to handle extreme values of the dependent variable. *Journal of the American Statistical Association*, *83*, 123–127.

Cai, J., Garner, J. L., & Walkling, R. A. (2009). Electing directors. *Journal of Finance*, *64*, 2389–2421.

Cai, Y., Xu, J., & Yang, J. (2021). Paying by donating: Corporate donations affiliated with independent directors. *Review of Financial Studies*, *34*, 618–660.

Callaway, B., & Sant'Anna, P. H. (2021). Difference-in-differences with multiple time periods. *Journal of Econometrics*, *225*, 200–230.

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

Chiu, P. C., Teoh, S. H., & Tian, F. (2013). Board interlocks and earnings management contagion. *The Accounting Review*, *88*, 915–944.

Coles, J. L., Daniel, N. D., & Naveen, L. (2014). Co-opted boards. *Review of Financial Studies*, *27*, 1751–1796.

Cvijanović, D., Gantchev, N., & Li, R. (2023). CEO succession roulette. *Management Science*, *69*, 5794–5815.

Dalton, D. R., & Dalton, C. M. (2007). CEO succession: Some finer - and perhaps provocative - points. *Journal of Business Strategy*, *28*, 6–8.

Daniel, N. D., Li, Y., Naveen, L., & Cornelli, F. (2020). Symmetry in pay for luck. *Review of Financial Studies*, *33*, 3174–3204.

Dasgupta, S., Li, X., & Wang, A. Y. (2018). Product market competition shocks, firm performance, and forced CEO turnover. *Review of Financial Studies*, *31*, 4187–4231.

Davis, G. F. (1991). Agents without principles? The spread of the poison pill through the intercorporate network. *Administrative Science Quarterly*, *36*, 583.

Denis, D. J., & Denis, D. K. (1995). Performance changes following top management dismissals. *Journal of Finance*, *50*, 1029–1057.

Dow, J. (2013). Boards, CEO entrenchment, and the cost of capital. *Journal of Financial Economics*, *110*, 680–695.

Eisfeldt, A. L., & Kuhnen, C. M. (2013). CEO turnover in a competitive assignment framework. *Journal of Financial Economics*, *109*, 351–372.

Ellis, J., Guo, L., & Mobbs, S. (2021). How does forced-CEO-turnover experience affect directors? *Journal of Financial and Quantitative Analysis*, *56*, 1163–1191.

Erel, I., Stern, L. H., Tan, C., & Weisbach, M. S. (2021). Selecting directors using machine learning. *Review of Financial Studies*, *34*, 3226–3264.

Ertimur, Y., Ferri, F., & Maber, D. A. (2012). Reputation penalties for poor monitoring of executive pay: Evidence from option backdating. *Journal of Financial Economics*, *104*, 118–144.

Ertugrul, M., & Krishnan, K. (2011). Can CEO dismissals be proactive? *Journal of Corporate Finance*, *17*, 134–151.

Fahlenbrach, R., Low, A., & Stulz, R. M. (2017). Do independent director departures predict future bad events? *Review of Financial Studies*, *30*, 2313–2358.

Falato, A., Kadyrzhanova, D., & Lel, U. (2014). Distracted directors: Does board busyness hurt shareholder value? *Journal of Financial Economics*, *113*, 404–426.

Faleye, O. (2007). Classified boards, firm value, and managerial entrenchment. *Journal of Financial Economics*, *83*, 501–529.

Fama, E. (1980). Agency problems and the theory of the firm. *Journal of Political Economy*, *88*, 288–307.

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

Farrell, K. A., & Whidbee, D. A. (2000). The consequences of forced CEO succession for outside directors. *Journal of Business*, *73*, 597–627.

Fee, C. E., Hadlock, C. J., Huang, J., & Pierce, J. R. (2018). Robust models of CEO turnover: New evidence on relative performance evaluation. *Review of Corporate Finance Studies*, *7*, 70–100.

Fee, C. E., Hadlock, C. J., & Pierce, J. R. (2013). Managers with and without style: Evidence using exogenous variation. *Review of Financial Studies*, *26*, 567–601.

Fich, E. M. (2005). Are some outside directors better than others? Evidence from director appointments by Fortune 1000 firms. *Journal of Business*, *78*, 1943–1971.

Fich, E. M., & Shivdasani, A. (2007). Financial fraud, director reputation, and shareholder wealth. *Journal of Financial Economics*, *86*, 306–336.

Fischer, P. E., Gramlich, J. D., Miller, B. P., & White, H. D. (2009). Investor perceptions of board performance: Evidence from uncontested director elections. *Journal of Accounting and Economics*, *48*, 172–189.

Foroughi, P., Marcus, A. J., Nguyen, V., & Tehranian, H. (2022). Peer effects in corporate governance practices: Evidence from universal demand laws. *Review of Financial Studies*, *35*, 132–167.

Fos, V., Li, K., & Tsoutsoura, M. (2018). Do director elections matter? *Review of Financial Studies*, *31*, 1499–1531.

Garrett, D. F., & Pavan, A. (2012). Managerial turnover in a changing world. *Journal of Political Economy*, *120*, 879–925.

Geng, H., Hau, H., Michaely, R., & Nguyen, B. (2021). Does board overlap promote coordination between firms? Working paper. University of Geneva.

Gibson, S., Safieddine, A., & Sonti, R. (2004). Smart investments by smart money: Evidence from seasoned equity offerings. *Journal of Financial Economics*, *72*, 581–604.

Gopalan, R., Gormley, T. A., & Kalda, A. (2021). It's not so bad: Director bankruptcy experience and corporate risk taking. *Journal of Financial Economics*, *142*, 261–292.

Gow, I. D., Wahid, A. S., & Yu, G. (2018). Managing reputation: Evidence from biographies of corporate directors. *Journal of Accounting and Economics*, *66*, 448–469.

Guo, L., & Masulis, R. W. (2015). Board structure and monitoring: New evidence from CEO turnovers. *Review of Financial Studies*, *28*, 2770–2811.

Hambrick, D. C., & Fukutomi, G. D. (1991). The seasons of a CEO's tenure. *Academy of Management Review*, *16*, 719–742.

He, J., Huang, J., & Zhao, S. (2019). Internalizing governance externalities: The role of institutional cross-ownership. *Journal of Financial Economics*, *134*, 400–418.

Heider, F., & Ljungqvist, A. (2015). As certain as debt and taxes: Estimating the tax sensitivity of leverage from state tax changes. *Journal of Financial Economics*, *118*, 684–712.

Henderson, A. D., Miller, D., & Hambrick, D. C. (2006). How quickly do CEOs become obsolete?

Industry dynamism, CEO tenure, and company performance. *Strategic Management Journal*, *27*, 447–460.

Huson, M. R., Malatesta, P. H., & Parrino, R. (2004). Managerial succession and firm performance. *Journal of Financial Economics*, *74*, 237–275.

Huson, M. R., Parrino, R., & Starks, L. T. (2001). Internal monitoring mechanisms and CEO turnover: A long-term perspective. *Journal of Finance*, *56*, 2265–2297.

Jensen, M. C. (1993). The modern Industrial Revolution, exit, and the failure of internal control systems. *Journal of Finance*, *48*, 831–880.

Jenter, D., & Kanaan, F. (2015). CEO turnover and relative performance evaluation. *Journal of Finance*, *70*, 2155–2184.

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

Johnson, W. C., Karpoff, J. M., & Wittry, M. D. (2023). The consequences to directors for deploying poison pills. Working paper. Suffolk University, University of Washington, Ohio State University.

Jovanovic, B. (1979). Job matching and the theory of turnover. *Journal of Political Economy*, *87*, 972–990.

Kempf, E., Manconi, A., & Spalt, O. (2017). Distracted shareholders and corporate actions. *Review of Financial Studies*, *30*, 1660–1695.

Klein, A. (1998). Firm performance and board committee structure. *The Journal of Law and Economics*, *41*, 275–304.

Laux, V. (2010). Effects of litigation risk on board oversight and CEO incentive pay. *Management Science*, *56*, 938–948.

Lechner, M., & Strittmatter, A. (2019). Practical procedures to deal with common support problems in matching estimation. *Econometric Reviews*, *38*, 193–207.

Levit, D., & Malenko, N. (2016). The labor market for directors and externalities in corporate governance. *Journal of Finance*, *71*, 775–808.

Lewellen, K., & Lowry, M. (2021). Does common ownership really increase firm coordination? *Journal of Financial Economics*, *141*, 322–344.

Liu, C., Low, A., Masulis, R. W., & Zhang, L. (2020). Monitoring the monitor: Distracted institutional investors and board governance. *Review of Financial Studies*, *33*, 4489–4531.

Mace, M. L. (1971). *Directors: Myth and reality*. Boston, MA: Division of Research, Graduate School of Business Administration, Harvard University.

Marcel, J. J., Cowen, A. P., & Ballinger, G. A. (2017). Are disruptive CEO successions viewed as a governance lapse? Evidence from board turnover. *Journal of Management*, *43*, 1313–1334.

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

Masulis, R. W., & Zhang, E. J. (2019). How valuable are independent directors? Evidence from external distractions. *Journal of Financial Economics*, *132*, 226–256.

Matvos, G., & Ostrovsky, M. (2010). Heterogeneity and peer effects in mutual fund proxy voting. *Journal of Financial Economics*, *98*, 90–112.

Miller, D. (1991). Stale in the saddle: CEO tenure and the match between organization and environment. *Management Science*, *37*, 34–52.

Nguyen, B. D., & Nielsen, K. M. (2010). The value of independent directors: Evidence from sudden deaths. *Journal of Financial Economics*, *98*, 550–567.

Parrino, R. (1997). CEO turnover and outside succession A succession analysis. *Journal of Financial Economics*, *46*, 165–197.

Parrino, R., Sias, R. W., & Starks, L. T. (2003). Voting with their feet: Institutional ownership changes around forced CEO turnover. *Journal of Financial Economics*, *68*, 3–46.

Peters, F. S., & Wagner, A. F. (2014). The executive turnover risk premium. *Journal of Finance*, *69*, 1529–1563.

Ryan, H. E., & Wiggins, R. A. (2004). Who is in whose pocket? Director compensation, board independence, and barriers to effective monitoring. *Journal of Financial Economics*, *73*, 497–524.

Shivdasani, A. (1993). Board composition, ownership structure, and hostile takeovers. *Journal of Accounting and Economics*, *16*, 167–198.

Srinivasan, S. (2005). Consequences of financial reporting Failure for outside directors: Evidence from accounting restatements and audit committee members. *Journal of Accounting Research*, *43*, 291–334.

Stein, L. C., & Zhao, H. (2019). Independent executive directors: How distraction affects their advisory and monitoring roles. *Journal of Corporate Finance*, *56*, 199–223.

Stuart, T. E., & Yim, S. (2010). Board interlocks and the propensity to be targeted in private equity transactions. *Journal of Financial Economics*, *97*, 174–189.

Sun, L., & Abraham, S. (2021). Estimating dynamic treatment effects in event studies with heterogeneous treatment effects. *Journal of Econometrics*, *225*, 175–199.

Weisbach, M. S. (1988). Outside directors and CEO turnover. *Journal of Financial Economics*, *20*, 431–460.

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

Zhang, S. (2021). Directors's career concerns: Evidence from proxy contests and board interlocks. *Journal of Financial Economics*, *140*, 894–915.

Table 1: Forced CEO turnover and interlocked director characteristics at turnover firms

This table reports descriptive statistics on forced CEO turnover characteristics (Panel A) and interlocked director characteristics at the turnover firms (Panel B). A CEO departure at an S&P1500 firm between 2013 and 2017 is classified as a forced turnover if i) newspaper articles indicate that the CEO is fired, is forced out of her position, or departs due to unspecified policy differences, ii) the CEO does not leave to take over an executive position at another organization, and iii) the CEO leaves within one month after the departure is announced, which includes the termination of a board membership but does not include a consulting position at the turnover firm. Interlocked directors are directors who contemporaneously serve on the board of a firm that announces a forced CEO turnover and on the board of another firm that does not fire the CEO. Interlocked directors appear in our sample if re-election vote data from ISS, director data from BoardEx and ISS, stock price data from CRSP, accounting data from Compustat, and ownership data from Thomson Reuters are available. Definitions and data sources of all variables are provided in Table A.1.

Panel A: Forced turnover characteristics

	Forced CEO turnovers		Interlocked directorships	
	Mean	N	Mean	N
Successor announced (d)	0.451	206	0.448	607
Performance-induced (d)	0.881	201	0.902	591
Honeymoon stage (d)	0.320	206	0.308	607
Harvest stage (d)	0.655	206	0.685	607
Decline stage (d)	0.024	206	0.012	607

Panel B: Interlocked director characteristics at turnover firms

	Interlocked directorships	
	Mean	N
Co-opted director (d)	0.504	607
Monitoring committee member (d)	0.796	604

Table 2: Turnover-interlocked director and firm characteristics

This table reports descriptive statistics on turnover-interlocked director characteristics (Panel A), turnover-interlocked director characteristics at the interlocked firms (Panel B), and turnover-interlocked firm characteristics (Panel C). A CEO departure at an S&P1500 firm between 2013 and 2017 is classified as a forced CEO turnover if i) newspaper articles indicate that the CEO is fired, is forced out of her position, or departs due to unspecified policy differences, ii) the CEO does not leave to take over an executive position at another organization, and iii) the CEO leaves within one month after the departure is announced, which includes the termination of a board membership but does not include a consulting position at the turnover firm. Interlocked directors are directors who contemporaneously serve on the board of a firm that announces a forced CEO turnover and on the board of another firm that does not fire the CEO. Interlocked directors appear in our sample if re-election vote data from ISS, director data from BoardEx and ISS, stock price data from CRSP, accounting data from Compustat, and ownership data from Thomson Reuters are available. Definitions and data sources of all variables are provided in Table A.1.

Panel A: Turnover-interlocked director characteristics

	Mean	Median	SD	N
Age (yrs)	63.534	64.739	6.904	607
Female (d)	0.173	0.000	0.379	607
# of other board seats	3.142	3.000	1.918	607

Panel B: Turnover-interlocked director characteristics at interlocked firms

	Mean	Median	SD	N
% votes withheld	7.116	2.687	10.887	607
Tenure (yrs)	8.328	6.995	5.514	607
ISS withhold/against (d)	0.074	0.000	0.262	607

Panel C: Turnover-interlocked firm characteristics

	Mean	Median	SD	N
Total assets (millions)	14,662.478	2,532.490	56,107.593	607
Tobin's Q	2.028	1.647	1.220	607
ROA	0.138	0.133	0.110	607
BH return (m270,m21)	0.022	-0.007	0.407	607
Board size	9.778	10.000	2.180	607
% outside directors	0.852	0.875	0.076	607
% busy outside directors	0.342	0.333	0.189	607
Institutional ownership (%)	0.773	0.818	0.218	607

Table 3: Non-turnover-interlocked director and firm characteristics

This table reports descriptive statistics on non-turnover-interlocked director characteristics (Panel A), non-turnover-interlocked director characteristics at the non-interlocked firms (Panel B), and non-turnover-interlocked firm characteristics (Panel C). The sample comprises director re-elections between 2003 and 2017 from ISS Voting Analytics, augmented with director data from BoardEx and ISS, stock price data from CRSP, accounting data from Compustat, and ownership data from Thomson Reuters. Definitions and data sources of all variables are provided in Table A.1. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively, of tests for differences in means and medians between the turnover-interlocked director sample reported in Table 2 and the non-turnover-interlocked director sample reported in this table.

Panel A: Non-turnover-interlocked director characteristics

	Mean	Median	SD	N
Age (yrs)	63.003	63.819*	8.707	87,786
Female (d)	0.131***	0.000***	0.337	87,799
# of other board seats	1.770***	1.000***	2.093	87,799

Panel B: Non-turnover-interlocked director characteristics at non-interlocked firms

	Mean	Median	SD	N
% votes withheld	6.139**	2.458**	9.623	87,799
Tenure (yrs)	8.691	6.995	6.604	87,799
ISS withhold/against (d)	0.096*	0.000*	0.295	87,799

Panel C: Non-turnover-interlocked firm characteristics

	Mean	Median	SD	N
Total assets (millions)	10,957.859**	1,422.700***	43,764.939	87,799
Tobin's Q	2.035	1.615	1.316	87,799
ROA	0.103***	0.128***	0.176	87,799
BH return (m270,m21)	0.006	-0.046***	0.718	87,799
Board size	9.223***	9.000***	2.359	87,799
% outside directors	0.836***	0.857***	0.089	87,799
% busy outside directors	0.254***	0.250***	0.193	87,799
Institutional ownership (%)	0.701***	0.794***	0.281	87,799

Table 4: Forced CEO turnovers and withheld votes at interlocked firms

This table reports results from ordinary least squares regressions of the change in withheld votes in director re-elections on a dummy variable set equal to one if a director is involved in a forced CEO turnover at an interlocked firm, and zero otherwise, as well as control variables and fixed effects. All regressions include interacted industry-year fixed effects. The regression reported in Column 2 additionally includes firm fixed effects. The regression reported in Column 3 replaces firm fixed effects with director fixed effects. The sample comprises director re-elections between 2003 and 2017 from ISS Voting Analytics, augmented with director data from BoardEx and ISS, stock price data from CRSP, accounting data from Compustat, and ownership data from Thomson Reuters. All variables are in first-differences. Definitions and data sources of all variables are provided in Table A.1. *t*-statistics are reported in parentheses and are based on standard errors clustered at the Fama-French 48 industry level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	% votes withheld		
	(1)	(2)	(3)
Forced CEO turnover (d)	1.204***	0.878**	1.034**
	(3.071)	(2.553)	(2.407)
ISS withhold/against (d)	18.214***	18.462***	18.644***
	(29.462)	(29.645)	(26.995)
# of other board seats	0.128***	0.133***	0.172***
	(3.474)	(3.100)	(3.866)
Total assets, log	0.562***	0.514**	0.434*
	(2.940)	(2.326)	(1.909)
Tobin's Q	-0.194***	-0.140*	-0.151*
	(-2.827)	(-1.976)	(-1.871)
ROA	-1.915**	-2.160**	-1.816*
	(-2.676)	(-2.336)	(-1.981)
BH return (m270,m21)	-0.586***	-0.564***	-0.596***
	(-6.892)	(-6.273)	(-6.711)
Board size	-0.096**	-0.087	-0.103
	(-2.081)	(-1.653)	(-1.632)
% outside directors	2.536**	2.044*	2.009
	(2.427)	(1.840)	(1.607)
% busy outside directors	0.261	0.533	0.193
	(0.614)	(0.987)	(0.354)
Institutional ownership (%)	0.049	-0.009	0.062
	(0.153)	(-0.020)	(0.131)
Year × Industry FE	Yes	Yes	Yes
Firm FE	No	Yes	No
Director FE	No	No	Yes
Observations	88,406	88,406	88,406
Firms	3,269	3,269	3,269
Directors	18,693	18,693	18,693
Turnover-interlocked directorships	607	607	607
Adjusted R^2	0.333	0.347	0.354

Table 5: Cross-sectional tests: Turnover types

This table reports results from ordinary least squares regressions of the change in withheld votes in director re-elections on a dummy variable set equal to one if a director is involved in a certain type of CEO turnover at an interlocked firm, and zero otherwise, as well as control variables and fixed effects. Regressions reported in Columns 1 to 3 include a dummy variable set equal to one if a director is involved in a forced turnover, zero otherwise, and a dummy variable set equal to one if a director is involved in an unforced turnover, and zero otherwise. Regressions reported in Columns 4 to 6 include four dummy variables indicating whether a director is involved in a performance-induced forced turnover, a non-performance-induced forced turnover, a performance-induced unforced turnover, and a non-performance-induced unforced turnover, and zero otherwise, respectively. The sample comprises director re-elections between 2003 and 2017 from ISS Voting Analytics, augmented with director data from BoardEx and ISS, stock price data from CRSP, accounting data from Compustat, and ownership data from Thomson Reuters. All variables are in first-differences. Control variables are the same as in Table 4. Definitions and data sources of all variables are provided in Table A.1. *t*-statistics are reported in parentheses and are based on standard errors clustered at the Fama-French 48 industry level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	% votes withheld					
	(1)	(2)	(3)	(4)	(5)	(6)
Forced CEO turnover (d)	1.173***	0.873**	1.038**			
	(3.001)	(2.541)	(2.414)			
Unforced CEO turnover (d)	0.490***	0.137	0.239			
	(3.848)	(1.150)	(1.304)			
Forced CEO turnover, performance-induced (d)				1.419***	1.069***	1.271***
				(3.474)	(2.897)	(2.864)
Forced CEO turnover, non-performance-induced (d)				-0.681	-0.806	-0.893
				(-0.855)	(-1.006)	(-0.721)
Unforced CEO turnover, performance-induced (d)				0.585**	0.173	0.238
				(2.114)	(0.527)	(0.605)
Unforced CEO turnover, non-performance-induced (d)				0.377***	0.042	0.113
				(2.890)	(0.337)	(0.678)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	No	Yes	No	No	Yes	No
Director FE	No	No	Yes	No	No	Yes
Observations	88,406	88,406	88,406	88,322	88,322	88,322
Firms	3,269	3,269	3,269	3,268	3,268	3,268
Directors	18,693	18,693	18,693	18,691	18,691	18,691
Interlocked directorships	3,868	3,868	3,868	3,784	3,784	3,784
Adjusted R^2	0.334	0.347	0.354	0.334	0.347	0.354

Table 6: Cross-sectional tests: Turnover and director characteristics

This table reports results from ordinary least squares regressions of the change in withheld votes in director re-elections on a dummy variable set equal to one if a director is involved in a forced CEO turnover at an interlocked firm, and zero otherwise, as well as control variables and interacted industry-year fixed effects. In the regression reported in Column 1, the dummy variable is split based on whether the turnover takes place during the first three years (Honeymoon stage), between the third and 13th year (Harvest stage), or after the 13th year of the departing CEO's tenure (Decline stage). The regression reported in Column 2 includes an indicator variable set equal to one if a director is involved in a forced turnover at an interlocked firm and an indicator variable set equal to one if a director was involved in hiring of the fired CEO but left the interlocked firm's board. In the regression reported in Column 3, the dummy variable is split based on whether or not the turnover-interlocked director was appointed to the turnover firm's board during the departing CEO's tenure (co-opted). In the regression reported in Column 4, the dummy variable is split based on whether or not a full CEO replacement is announced with the departure. In the regression reported in Column 5, the dummy variable is split based on whether or not the turnover-interlocked director is a member of the nominating or compensation committee of the turnover firm. The sample comprises director re-elections between 2003 and 2017 from ISS Voting Analytics, augmented with director data from BoardEx and ISS, stock price data from CRSP, accounting data from Compustat, and ownership data from Thomson Reuters. All variables are in first-differences. Control variables are the same as in Table 4. Definitions and data sources of all variables are provided in Table A.1. t-statistics are reported in parentheses and are based on standard errors clustered at the Fama-French 48 industry level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	% votes withheld				
	(1)	(2)	(3)	(4)	(5)
Forced CEO turnover, honeymoon stage (d)	0.197				
	(0.314)				
Forced CEO turnover, harvest stage (d)	1.679***				
	(4.288)				
Forced CEO turnover, decline stage (d)	-0.121				
	(-0.049)				
Forced CEO turnover (d)		1.204***			
		(3.068)			
Hired CEO and left before forced turnover (d)		-0.002			
		(-0.003)			
Forced CEO turnover, co-opted director (d)			1.670***		
			(3.373)		
Forced CEO turnover, non-co-opted dir. (d)			0.720		
			(1.566)		
Forced CEO turnover, monitoring comm. (d)				1.566***	
				(3.748)	
Forced CEO turnover, non-mon. comm. (d)				-0.246	
				(-0.348)	
Forced CEO turnover, successor announced (d)					0.837
					(1.539)
Forced CEO turnover, successor not ann. (d)					1.507***
					(3.172)
Control variables	Yes	Yes	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes	Yes	Yes
Observations	88,406	88,406	88,406	88,403	88,406
Firms	3,269	3,269	3,269	3,269	3,269
Directors	18,693	18,693	18,693	18,693	18,693
Turnover-interlocked directorships	607	607	607	604	607
Adjusted R^2	0.334	0.333	0.333	0.334	0.333

Table 7: Cross-sectional tests: Common ownership in turnover and interlocked firms

This table reports results from ordinary least squares regressions of the change in withheld votes in director re-elections on a dummy variable set equal to one if a director is involved in a forced CEO turnover at an interlocked firm, and zero otherwise, as well as control variables and interacted industry-year fixed effects. In the regression reported in Column 1 (2), the dummy variable is split into two variables depending on whether or not common institutional ownership in the turnover and the interlocked firm is above the mean (median) common ownership. The sample comprises director re-elections between 2003 and 2017 from ISS Voting Analytics, augmented with director data from BoardEx and ISS, stock price data from CRSP, accounting data from Compustat, and ownership data from Thomson Reuters. All variables are in first-differences. Control variables are the same as in Table 4. t-statistics are reported in parentheses and are based on standard errors clustered at the Fama-French 48 industry level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	% votes withheld	
	(1)	(2)
Forced CEO turnover $\geq$ mean common ownership (d)	1.442**	
	(2.678)	
Forced CEO turnover $<$ mean common ownership (d)	0.900	
	(1.670)	
Forced CEO turnover $\geq$ median common ownership (d)		1.513**
		(2.603)
Forced CEO turnover $<$ median common ownership (d)		0.870*
		(1.758)
Control variables	Yes	Yes
Year $\times$ Industry FE	Yes	Yes
Observations	88,390	88,390
Firms	3,269	3,269
Directors	18,693	18,693
Turnover-interlocked directorships	591	591
Adjusted R^2	0.334	0.334

Table 8: Treatment reversal and pseudo treatments

This table reports results from ordinary least squares regressions of the change in withheld votes in director re-elections on a dummy variable set equal to one if a director is involved in a forced CEO turnover at an interlocked firm, and zero otherwise, as well as control variables and interacted industry-year fixed effects. In the regressions reported in Columns 1 and 2, the baseline regression reported in Column 1 of Table 4 is augmented with lags of the dummy variable indicating a forced turnover at an interlocked firm. In the regressions reported in Columns 3 and 4, pseudo-treatment dummy variables are set equal to one for one and two re-elections prior to the actual forced turnover, and zero otherwise, respectively. In the regression reported in Column 5, the baseline regression reported in Column 1 of Table 4 is augmented with an indicator variable that is equal to one if the director joined the board after the departure of the CEO but before the date of her re-election. The sample comprises director re-elections between 2003 and 2017 from ISS Voting Analytics, augmented with director data from BoardEx and ISS, stock price data from CRSP, accounting data from Compustat, and ownership data from Thomson Reuters. All variables are in first-differences. Control variables are the same as in Table 4. Definitions and data sources of all variables are provided in Table A.1. t-statistics are reported in parentheses and are based on standard errors clustered at the Fama-French 48 industry level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	% votes withheld				
	Baseline plus lag	Baseline plus lags	Pseudo $t-1$	Pseudo $t-2$	Joined after
	(1)	(2)	(3)	(4)	(5)
Forced CEO turnover (d)	1.202***	1.279***	0.020	-0.390	1.202***
	(3.052)	(2.863)	(0.054)	(-0.835)	(3.074)
Forced CEO turnover (d) $t-1$	0.097	0.373			
	(0.272)	(1.066)			
Forced CEO turnover (d) $t-2$		-0.325			
		(-0.506)			
Joined after forced CEO turnover (d)					0.629
					(0.583)
Control variables	Yes	Yes	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes	Yes	Yes
Observations	88,406	64,555	64,450	47,544	88,406
Firms	3,269	2,582	2,577	2,098	3,269
Directors	18,693	13,817	13,788	10,588	18,693
Turnover-interlocked directorships	607	424	420	315	607
Adjusted R^2	0.333	0.360	0.418	0.431	0.333

Table 9: Propensity score matching analysis

This table reports results from ordinary least squares regressions of withheld votes in director re-elections on a dummy variable set equal to one if a director is involved in a forced CEO turnover at an interlocked firm, and zero otherwise, as well as control variables. The regressions reported in Columns 2, 5, and 8 include year and interlocked firm industry fixed effects. The regressions reported in Columns 3, 6, and 9 include turnover event fixed effects. The treatment sample comprises re-elections of directors involved in a forced CEO turnover at an interlocked firm. The control sample comprises re-elections of directors interlocked to a sample of propensity score-matched firms with characteristics similar to the turnover firms. The sample in Columns 1 to 3 is based on propensity scores estimated using the forced CEO turnover likelihood model of Peters & Wagner (2014). The sample in Columns 4 to 6 is based on propensity scores estimated using the forced CEO turnover likelihood model of Peters & Wagner (2014) augmented with aggregate news sentiment prior to the CEO departure date, and the sample in Columns 7 to 9 is based on propensity scores estimated using the forced CEO turnover likelihood model of Peters & Wagner (2014) augmented with the mean change in director re-election votes of all board members prior to the CEO turnover. For details, see Section 4.2. Definitions and data sources of all variables are provided in Table A.1. *t*-statistics are reported in parentheses and are based on standard errors clustered at the Fama-French 48 industry level (Columns 1, 2, 4, 5, 7, and 8) or at the turnover level (Columns 3, 6, and 9). *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	% votes withheld								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Forced CEO turnover (d)	1.436**	1.434***	1.017*	1.381**	1.387***	0.842*	1.478**	1.244**	0.955*
	(2.673)	(2.953)	(1.843)	(2.440)	(2.955)	(1.754)	(2.585)	(2.225)	(1.778)
ISS withhold/against (d)	19.516***	19.333***	19.701***	19.089***	19.228***	19.475***	21.817***	22.316***	22.181***
	(10.421)	(10.070)	(10.244)	(9.759)	(9.602)	(11.360)	(11.628)	(11.382)	(14.823)
# of other board seats	-0.030	0.048	0.042	0.255*	0.300**	0.289**	0.270**	0.329***	0.281**
	(-0.192)	(0.391)	(0.232)	(1.988)	(2.228)	(2.237)	(2.489)	(3.103)	(2.123)
Female (d)	-0.456	-0.301	-0.357	-0.785	-0.786	-0.050	-1.037	-0.541	-0.569
	(-0.679)	(-0.464)	(-0.663)	(-1.271)	(-1.217)	(-0.074)	(-1.290)	(-0.633)	(-0.960)
Age (yrs), log	-0.668	-1.853	-2.035	1.943	0.577	1.054	2.976	2.941	1.532
	(-0.244)	(-0.684)	(-0.907)	(1.088)	(0.245)	(0.508)	(1.379)	(1.276)	(0.574)
Tenure (yrs), log	1.489***	1.301***	1.793***	0.879**	0.713*	0.577*	1.210***	1.157***	1.092***
	(4.052)	(3.817)	(5.265)	(2.163)	(1.868)	(1.815)	(2.824)	(2.922)	(2.833)
Total assets, log	0.139	0.372	0.013	0.433	0.534**	0.374*	0.528*	0.527*	0.412
	(0.547)	(1.348)	(0.050)	(1.653)	(2.158)	(1.794)	(1.745)	(1.857)	(1.518)

Table 9: Propensity score matching analysis (cont.)

Dependent variable:	% votes withheld								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Tobin's Q	0.043	0.160	0.055	-0.163	-0.084	-0.248	0.184	0.321*	0.151
	(0.183)	(0.670)	(0.256)	(-0.795)	(-0.353)	(-1.275)	(1.126)	(1.938)	(0.648)
ROA	-2.490	-4.111**	-1.376	-2.196	-2.117	-1.568	-2.482	-3.570*	-1.381
	(-0.958)	(-2.149)	(-0.677)	(-1.566)	(-1.532)	(-0.903)	(-0.941)	(-1.695)	(-0.703)
BH return (m270,m21)	-1.933***	-1.611***	-2.010***	-1.551***	-1.480***	-1.589***	-3.137***	-3.244***	-3.637***
	(-3.135)	(-2.947)	(-3.197)	(-3.380)	(-3.152)	(-2.854)	(-4.347)	(-3.895)	(-4.539)
Board size	-0.115	-0.046	-0.135	-0.162	-0.057	-0.166	-0.324**	-0.192	-0.300
	(-0.786)	(-0.353)	(-0.838)	(-1.347)	(-0.433)	(-1.342)	(-2.395)	(-1.400)	(-1.605)
% outside directors	6.883*	-0.292	4.588	3.232	-0.521	1.428	7.022	3.469	1.735
	(1.700)	(-0.064)	(1.248)	(0.956)	(-0.182)	(0.440)	(1.156)	(0.579)	(0.384)
% busy outside dirs	0.007	0.321	0.666	0.696	1.162	-0.623	0.738	0.917	0.323
	(0.005)	(0.260)	(0.440)	(0.540)	(0.950)	(-0.463)	(0.479)	(0.631)	(0.210)
Inst. ownership (%)	0.545	0.105	-0.505	-0.657	-0.334	-1.404	0.171	-0.399	-0.586
	(0.474)	(0.096)	(-0.484)	(-0.670)	(-0.410)	(-1.364)	(0.150)	(-0.319)	(-0.548)
Year FE	No	Yes	No	No	Yes	No	No	Yes	No
Industry FE	No	Yes	No	No	Yes	No	No	Yes	No
Turnover FE	No	No	Yes	No	No	Yes	No	No	Yes
Observations	1,112	1,112	1,112	1,072	1,072	1,072	935	935	935
Firms	745	745	745	730	730	730	646	646	646
Directors	762	762	762	720	720	720	619	619	619
Turnover-interl. d'ships	526	526	526	516	516	516	440	440	440
Adjusted R^2	0.283	0.303	0.305	0.268	0.285	0.302	0.351	0.372	0.393

Table 10: Forced CEO turnovers, director distraction, and withheld votes at interlocked firms

This table reports results from ordinary least squares regressions of the change in withheld votes in director re-elections (Columns 1 and 2) or the change in board meeting attendance (Column 3) on a dummy variable set equal to one if a director is involved in a forced CEO turnover at an interlocked firm, and zero otherwise, as well as control variables and interacted industry-year fixed effects. The regression reported in Column 1 augments the baseline regression reported in Column 1 of Table 4 with a dummy variable equal to one if a director is involved in a sudden CEO death at an interlocked firm, and zero otherwise. In the regression reported in Column 2, the sample of unexpected CEO deaths is augmented with CEO sick leaves during which the CEO subsequently dies. The regression in Column 3 reports results of the baseline regression reported in Column 1 of Table 4 with the outcome variable replaced by the change in board meeting attendance. Meeting attendance is a dummy variable set equal to one if a director attended less than 75% of all board meetings within a fiscal year at the interlocked firm, and zero otherwise. The sample comprises director re-elections between 2003 and 2017 from ISS Voting Analytics, augmented with director data from BoardEx and ISS, stock price data from CRSP, accounting data from Compustat, and ownership data from Thomson Reuters. All variables are in first-differences. Control variables are the same as in Table 4. Definitions and data sources of all variables are provided in Table A.1. t-statistics are reported in parentheses and are based on standard errors clustered at the Fama-French 48 industry level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	% votes withheld		Attended < 75% of meetings (d)
	(1)	(2)	(3)
Forced CEO turnover (d)	1.211***	1.209***	-0.001
	(3.070)	(3.067)	(-0.238)
Sudden CEO death (d)	-0.586		
	(-1.005)		
Sudden CEO death (extended) (d)		0.768	
		(0.870)	
Control variables	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes
Observations	88,372	88,363	51,451
Firms	3,269	3,269	1,470
Directors	18,692	18,692	10,382
Turnover-interlocked directorships	605	605	434
Death-interlocked directorships	28	39	-
Adjusted R^2	0.333	0.333	0.036

Table 11: Forced CEO turnovers and gains and losses of directorships

This table reports results from ordinary least squares regressions of variables capturing gains and losses of directorships within t years after the turnover on a dummy variable set equal to one if a director is involved in a forced CEO turnover, and zero otherwise, as well as director control variables, turnover event fixed effects, and interlocked firm fixed effects. The dependent variable is a dummy variable indicating a loss of directorships (Columns 1-4), a gain in directorships (Columns 5-6), a net loss in directorships (Columns 7-8), and zero otherwise. In the regressions reported in Columns 3 and 4, the turnover firms are omitted when constructing the dependent variable. The treatment sample comprises outside directorships of directors interlocked to forced CEO turnovers between 2003 and 2017. The control sample comprises outside directorships of directors not interlocked to a forced turnover but share a board seat with a director interlocked to a forced CEO turnover at the turnover announcement. Definitions and data sources of all variables are provided in Table A.1. t-statistics are reported in parentheses and are based on standard errors clustered at the turnover level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	Loss of directorship (d)				Gain of directorship (d)		Net loss of directorship (d)	
	w/ turnover firm		w/o turnover firm					
	t=[0,1]	t=[0,5]	t=[0,1]	t=[0,5]	t=[0,1]	t=[0,5]	t=[0,1]	t=[0,5]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Forced CEO turnover (d)	0.076***	0.097***	-0.000	-0.016	0.018	0.087***	0.068***	0.033
	(2.925)	(2.711)	(-0.009)	(-0.478)	(0.776)	(2.925)	(2.875)	(1.106)
# of other board seats	0.028***	0.043***	0.029***	0.045***	0.016***	0.032***	0.021***	0.017***
	(4.052)	(3.696)	(4.127)	(3.769)	(3.302)	(5.059)	(3.958)	(3.099)
Female (d)	-0.018	0.024	-0.014	0.019	0.001	0.018	-0.011	0.035*
	(-1.147)	(0.950)	(-0.903)	(0.806)	(0.048)	(0.654)	(-0.758)	(1.725)
Age (yrs), log	0.006	0.487***	-0.001	0.478***	-0.220***	-0.673***	0.056	0.750***
	(0.107)	(5.484)	(-0.022)	(5.343)	(-3.774)	(-8.410)	(1.001)	(9.984)
Tenure (yrs), log	0.001	0.049***	0.001	0.052***	-0.016	-0.067***	0.000	0.074***
	(0.134)	(3.057)	(0.128)	(3.322)	(-1.541)	(-4.699)	(0.012)	(5.709)
Turnover FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,013	3,300	4,013	3,300	4,013	3,300	4,013	3,300
Firms	465	404	465	404	465	404	465	404
Directors	2,885	2,425	2,885	2,425	2,885	2,425	2,885	2,425
Turnover-interlocked directorships	594	489	594	489	594	489	594	489
Adjusted R^2	0.055	0.089	0.046	0.081	0.017	0.084	0.042	0.086

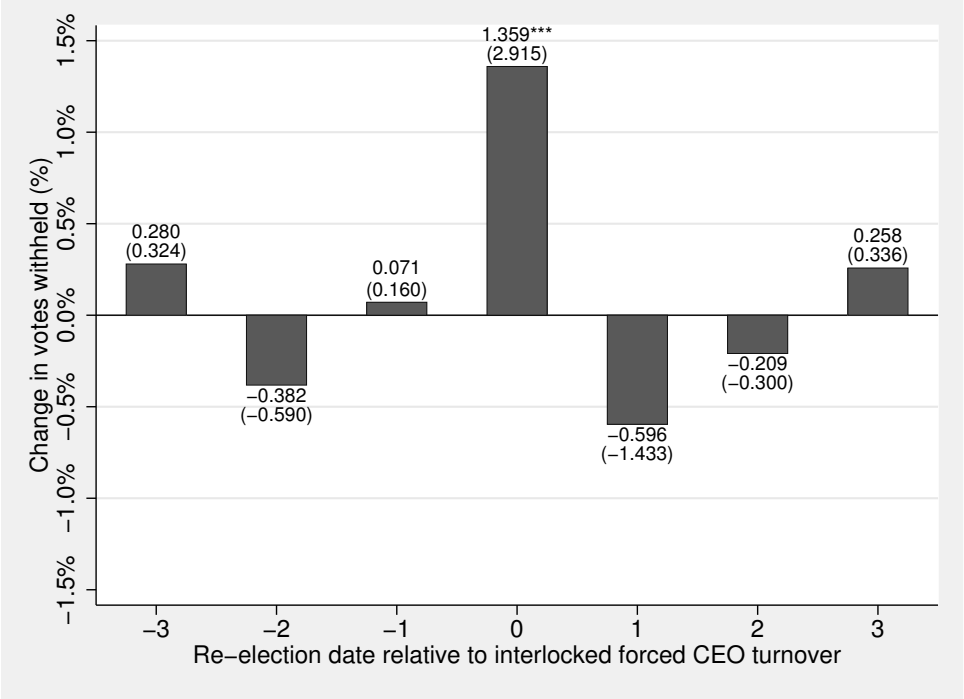
Table 12: Forced CEO turnovers, changes in directorship quality, and exits from director labor market

This table reports results from ordinary least squares regressions of changes in total assets of all directorships and a dummy variable indicating whether a director holds zero board seats within t years after the turnover on a dummy variable set equal to one if a director is involved in a forced CEO turnover, and zero otherwise, as well as director control variables, turnover event fixed effects, and interlocked firm fixed effects. The treatment sample comprises outside directorships of directors interlocked to forced CEO turnovers between 2003 and 2017. The control sample comprises outside directorships of directors not interlocked to a forced turnover but share a board seat with a director interlocked to a forced CEO turnover at the turnover announcement. Director control variables are the same as in Table 11. Definitions and data sources of all variables are provided in Table A.1. t-statistics are reported in parentheses and are based on standard errors clustered at the turnover level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable	Difference in the sum of total assets over all directorships		Exit from labor market (d)	
	$t_1 - t_0$	$t_5 - t_0$	$t = 1$	$t = 5$
	(1)	(2)	(3)	(4)
Forced CEO turnover (d)	-1.100***	-1.785***	0.121***	0.092***
	(-3.504)	(-3.298)	(4.525)	(4.773)
Director control variables	Yes	Yes	Yes	Yes
Turnover FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Observations	4,013	3,300	4,019	3,305
Firms	465	404	465	404
Directors	2,885	2,425	2,887	2,426
Turnover-interlocked directorships	594	489	594	489
Adjusted R^2	0.026	0.102	0.115	0.057

Figure 1: Forced CEO turnovers and withheld votes at interlocked firms

This figure plots coefficient estimates obtained from an ordinary least squares regression of the change in withheld votes in director re-elections on a dummy variable set equal to one if a director is involved in a forced CEO turnover at an interlocked firm. Each bar represents the coefficient estimate obtained from a separate regression that uses leads of lags of up to three elections relative to the turnover. The sample comprises director re-elections between 2003 and 2017 from ISS Voting Analytics, augmented with director data from BoardEx and ISS, stock price data from CRSP, accounting data from Compustat, and ownership data from Thomson Reuters. t-statistics are reported in parentheses and are based on standard errors clustered at the Fama-French 48 industry level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively. Definitions and data sources of all variables are provided in Table A.1.



Appendix

Table A.1: Variable definitions

This table reports variable definitions. Database mnemonics are provided in italics (if available).

Panel A: Director characteristics

Variable	Definition	Source
% votes withheld	Fraction of votes withheld and against the re-election of the director; $(votedagainst + votedabstain)/(votedfor + votedagainst + votedabstain)$	ISS
≥15% votes withheld (d)	Dummy variable equal to one if the fraction of votes withheld and against the re-election of the director exceeds or is equal to 15%, zero otherwise	ISS
Attended < 75% of meetings (d)	Dummy variable equal to one if the director attended less than 75% of all board meetings in a fiscal year, zero otherwise	ISS
ISS withhold/against (d)	Dummy variable equal to one if ISS recommends shareholders to withhold their votes or vote against the re-election of the director, zero otherwise	ISS
# of other board seats	Number of other outside board seats held by the director	BoardEx
Female (d)	Dummy variable equal to one if the director is female, zero otherwise	BoardEx/ISS
Age (yrs)	Age of the director	BoardEx/ISS
Tenure (yrs)	Time in years since the director joined the board	BoardEx/ISS
Monitoring committee (d)	Dummy variable equal to one if the director is a member of the nominating or compensation committee of the turnover firm at the turnover announcement date, zero otherwise	BoardEx/ISS
Co-opted director (d)	Dummy variable equal to one if the director became director of the turnover firm after the departing CEO was appointed, zero otherwise	BoardEx/ISS
≥ (<)t yrs until meeting date (d)	Dummy variable equal to one if the time between turnover announcement date and the next re-election date is larger or equal to (below) t years, zero otherwise	ISS
Leaves board (d)	Dummy variable equal to one if the director leaves the board of the turnover firm until the next meeting date, zero otherwise	ISS

Panel B: Firm characteristics

Variable	Definition	Source
Total assets	Total assets in million USD; AT	Compustat
Tobin's Q	Tobin's Q (market value of assets to book value); $(AT + CSHO * PRCC\_F - CEQ - TXDB)/AT$. Missing values in $TXDB$ have been set to 0. Winsorized at the 1st and 99th percentiles	Compustat
ROA	Return on assets; $coalesce(OIBDP, SALE - XOPR, REVT - XOPR)/((AT + lag(AT))/2)$. Winsorized at the 1st and 99th percentiles	Compustat
BH return (m270,m21)	Buy-and-hold-return from $t-270$ to $t-21$ with $t=0$ being the director re-election date; adjusted for equally weighted market return. Winsorized at the 1st and 99th percentiles	CRSP
Board size	Number of directors on the board	Boardex
% outside directors	The percentage of outside directors on the board, as a fraction of board size	BoardEx
% busy outside directors	The percentage of outside directors with more than two board memberships, as a fraction of the number of outside directors	BoardEx
Institutional ownership (%)	The percentage of shares owned by 13F institutions, as a fraction of shares outstanding	Thomson Reuters
≥ (<) median (mean) common ownership (d)	Dummy variable equal to one if the common ownership between the interlocked firm and the turnover firm is at least equal to (below) the median (mean), zero otherwise	Thomson Reuters

Table A.1: Variable definitions (cont.)

Panel C: Events at interlocked firms

Variable	Definition	Source
Forced CEO turnover (d)	Dummy variable equal to one if a director is involved in a forced CEO turnover at an interlocked firm, zero otherwise. A CEO departure is classified as forced if i) newspaper articles indicate that the CEO is fired, is forced out of her position, or departs due to unspecified policy differences, ii) the CEO does not leave to take over an executive position at another organization, and iii) the CEO leaves within one month after the departure is announced, which includes the termination of a board membership but does not include a consulting position at the turnover firm.	Hand-collected (Factiva/Boardex)
Unforced CEO turnover (d)	Dummy variable equal to one if a director is involved in a CEO turnover not classified as forced at an interlocked firm, zero otherwise	Hand-collected (Factiva/Boardex)
Hired CEO and left before forced CEO turnover (d)	Dummy variable equal to one if the director hired the CEO who gets fired but left the turnover firm before the firing, zero otherwise	Hand-collected (Factiva/Boardex)
Joined after forced CEO turnover (d)	Dummy variable equal to one if a director joined the board of the turnover firm after the departure of the CEO and before the date of her re-election at the interlocked firm, zero otherwise	Hand-collected (Factiva/Boardex)
Sudden CEO death (d)	Dummy variable equal to one if a director is involved in a CEO turnover at an interlocked firm caused by the sudden death of the CEO, zero otherwise	Hand-collected (Factiva/Boardex)
Sudden CEO death (extended) (d)	Dummy variable equal to one if a director is involved in a CEO turnover at an interlocked firm caused by the CEO's sudden death, zero otherwise. We also consider cases where CEOs take health-related leaves of absence but die subsequently	Hand-collected (Factiva/Boardex)
Restatement (d)	Dummy variable equal to one if a director is involved in a restatement at an interlocked firm, zero otherwise	Audit Analytics
Class action lawsuit (d)	Dummy variable equal to one if a director is involved in a class action lawsuit at an interlocked firm, zero otherwise	Securities Class Action Clearinghouse
Poison pill (d)	Dummy variable equal to one if a director is involved in the adoption of a poison pill at an interlocked firm, zero otherwise	Shark-Repellent
Bankruptcy (d)	Dummy variable equal to one if a director is involved in a bankruptcy filing at an interlocked firm, zero otherwise	Florida-UCLA-LoPucki

Panel D: CEO turnover characteristics

Variable	Definition	Source
Successor announced (d)	Dummy variable equal to one if the company announces a full replacement with the departure of the outgoing CEO, zero otherwise	Hand-collected (Factiva/Boardex)
Performance-induced (d)	Dummy variable equal to one if the CEO turnover is performance-induced as estimated using the two-probit model by Jenter & Lewellen (2021), zero otherwise	See Table IA.1
Honeymoon stage (d)	Dummy variable equal to one if the outgoing CEO has a tenure of less than three years, zero otherwise	BoardEx/ISS
Harvest stage (d)	Dummy variable equal to one if the outgoing CEO has a tenure of between three and 13 years, zero otherwise	BoardEx/ISS
Decline stage (d)	Dummy variable equal to one if the outgoing CEO has a tenure of more than 13 years, zero otherwise	BoardEx/ISS

Table A.1: Variable definitions (cont.)

Panel E: Labor market outcomes

Variable	Definition	Source
Loss of directorship (d)	Dummy variable equal to one if the director loses any of her outside directorships within t years following the interlocked forced CEO turnover, zero otherwise	BoardEx
Gain of directorship (d)	Dummy variable equal to one if the director obtains a new outside directorship within t years following the interlocked forced CEO turnover, zero otherwise	BoardEx
Net loss of directorship (d)	Dummy variable equal to one if the director loses more outside directorships than she gains within t years following the forced CEO turnover at an interlocked firm, zero otherwise	BoardEx
Sum of total assets (market cap.) over all directorships	Sum of total assets (market capitalization) in million USD over all directorships a director holds; *AT*	BoardEx, Compustat
Exit from labor market (d)	Dummy variable equal to one if the director is alive but has no board memberships t years following the interlocked forced CEO turnover, zero otherwise	BoardEx

Internet Appendix to: "CEO Turnover and Director Reputation"

– Not for publication –

Table IA.1: Definitions of variables used in the performance-induced turnover model

This table reports variable definitions of all variables used in the two-probit performance-induced turnover model borrowed from (Jenter & Lewellen, 2021). Database mnemonics are provided in italic capitals (if available).

Variable	Definition	Source
CEO turnover (d)	Dummy variable equal to one if a firm experiences a CEO turnover in a given year, zero otherwise	Hand-collected (Factiva/Boardex)
Scaled return	Average one-year industry-adjusted monthly stock returns, scaled by the standard deviation of returns over the past 48 months. $t = 0$ is defined as the fiscal year for non-turnover years, and the 12 months until the turnover announcement date for turnover years	CRSP/Ken French's Data Library
Age (yrs)	Age of the CEO	BoardEx
Age 61-63 (d)	Dummy variable equal to one if the age of the CEO is between 61 and 63 years, zero otherwise	BoardEx
Age 64-66 (d)	Dummy variable equal to one if the age of the CEO is between 64 and 66 years, zero otherwise	BoardEx
Age $>$ 66 (d)	Dummy variable equal to one if the age of the CEO is above 66 years	BoardEx
Tenure (yrs)	Time in years the CEO spent in office, zero otherwise	BoardEx
Dividend payer (d)	Dummy variable equal to one if the company paid a non-zero dividend, zero otherwise; $DVPSX\_F > 0$	Compustat
Total assets	Total assets in million USD; AT	Compustat

Table IA.2: Determinants of performance-induced CEO turnovers

This table reports results from probit regressions of a dummy equal to one if a firm experiences a CEO turnover in a given year on firm performance measures and controls (Jenter & Lewellen, 2021). The sample consists of all firm-years of S&P1500 firms for which data to construct the full set of explanatory variables are available. Definitions and data sources of all variables are provided in Table IA.1 in the Internet Appendix. z-statistics are reported in parentheses. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	CEO turnover (d)	
	Performance-induced	Other
	(1)	(2)
Scaled return $t = 0$	-0.028***	
	(-7.837)	
Scaled return $t = -1$	-0.021***	
	(-5.902)	
Scaled return $t = -2$	-0.006*	
	(-1.888)	
Age (yrs)	0.036***	0.025***
	(17.881)	(8.556)
Age 61-63 (d)		0.218***
		(4.910)
Age 64-66 (d)		0.449***
		(8.280)
Age > 66 (d)		0.148**
		(2.468)
Tenure (yrs)	-0.009***	-0.008***
	(-4.562)	(-4.248)
Dividend payer (d)	-0.086***	-0.082***
	(-3.012)	(-2.891)
Total assets, log	-0.014*	-0.013*
	(-1.786)	(-1.649)
Observations	20,471	20,471
Firms	2,523	2,523
Pseudo R^2	0.036	0.034

Table IA.3: Excluding treated directors from the control group

This table reports results from ordinary least squares regressions of the change in withheld votes in director re-elections on a dummy variable set equal to one if a director is involved in a forced CEO turnover at an interlocked firm, and zero otherwise, as well as control variables and fixed effects. The table reports results from tests that replicate the baseline regressions reported in Table 4 of the paper excluding treated directors from the control group (Panel A) and excluding treated directors from the control group after the onset of treatment (Panel B). All regressions include interacted industry-year fixed effects. The regression reported in Column 2 additionally includes firm fixed effects. The regression reported in Column 3 replaces firm fixed effects with director fixed effects. The sample comprises director re-elections between 2003 and 2017 from ISS Voting Analytics, augmented with director data from BoardEx and ISS, stock price data from CRSP, accounting data from Compustat, and ownership data from Thomson Reuters. All variables are in first-differences. Control variables are the same as in Table 4. Definitions and data sources of all variables are provided in Table A.1. *t*-statistics are reported in parentheses and are based on standard errors clustered at the Fama-French 48 industry level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Excluding treated directors from the control group

Dependent variable:	% votes withheld	
	(1)	(2)
Forced CEO turnover (d)	1.211***	0.877**
	(3.084)	(2.616)
Control variables	Yes	Yes
Year × Industry FE	Yes	Yes
Firm FE	No	Yes
Observations	83,730	83,730
Firms	3,266	3,266
Directors	18,693	18,693
Turnover-interlocked directorships	607	607
Adjusted R^2	0.332	0.345

Panel B: Excluding treated directors from the control group after the onset of treatment

Dependent variable:	% votes withheld		
	(1)	(2)	(3)
Forced CEO turnover (d)	1.213***	0.894**	1.257**
	(3.083)	(2.593)	(2.315)
Control variables	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes
Firm FE	No	Yes	No
Director FE	No	No	Yes
Observations	85,911	85,911	85,911
Firms	3,268	3,268	3,268
Directors	18,693	18,693	18,693
Turnover-interlocked directorships	607	607	607
Adjusted R^2	0.334	0.348	0.356

Table IA.4: Other reputation events and withheld votes at interlocked firms

This table reports results from ordinary least squares regressions of the change in withheld votes in director re-elections on a dummy variable set equal to one if a director is involved in another reputation event at an interlocked firm, and zero otherwise, as well as control variables and interacted industry-year fixed effects. The reputation event varies across columns. In the regression reported in Column 1, the event is a restatement with board involvement (sourced from Audit Analytics). In the regression reported in Column 2, it is a filing of a Class Action Lawsuit against a firm (sourced from the Securities Class Action Clearinghouse). In the regression reported in Column 3, it is the adoption of a poison pill (sourced from SharkRepellent). In the regression reported in Column 4, it is a filing for bankruptcy (sourced from the Florida-UCLA-LoPucki Bankruptcy Research Database). The sample comprises director re-elections between 2003 and 2017 from ISS Voting Analytics, augmented with director data from BoardEx and ISS, stock price data from CRSP, accounting data from Compustat, and ownership data from Thomson Reuters. In the regression reported in Column 1, the sample ends in 2016 because the restatement data available to us ends in 2016. All variables are in first-differences. Control variables are the same as in Table 4. Definitions and data sources of all variables are provided in Table A.1. t-statistics are reported in parentheses and are based on standard errors clustered at the Fama-French 48 industry level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	% votes withheld			
	(1)	(2)	(3)	(4)
Restatement (d)	0.508			
	(1.617)			
Class action lawsuit (d)		0.854***		
		(4.515)		
Poison pill (d)			0.875**	
			(2.077)	
Bankruptcy (d)				2.404**
				(2.102)
Control variables	Yes	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes	Yes
Observations	76,988	87,595	87,820	88,406
Firms	3,105	3,264	3,266	3,269
Directors	17,227	18,644	18,654	18,693
Events	330	217	139	8
Interlocked directorships	905	770	402	33
Adjusted R^2	0.405	0.333	0.328	0.333

Table IA.5: Exploring unusually high losses in vote support

This table reports results from ordinary least squares regressions of the change in withheld votes in director re-elections on a dummy variable set equal to one if a director is involved in a forced CEO turnover at an interlocked firm, and zero otherwise, as well as control variables and fixed effects. The table reports results from tests that replicate the baseline regressions reported in Table 4 of the paper, but uses as dependent variable the change in a dummy variable set equal to one if 15% or more of the votes cast in a director's re-election are against her, and zero otherwise (Bach & Metzger, 2017). All regressions include interacted industry-year fixed effects. The regression reported in Column 2 additionally includes firm fixed effects. The regression reported in Column 3 replaces firm fixed effects with director fixed effects. The sample comprises director re-elections between 2003 and 2017 from ISS Voting Analytics, augmented with director data from BoardEx and ISS, stock price data from CRSP, accounting data from Compustat, and ownership data from Thomson Reuters. All variables are in first-differences. Control variables are the same as in Table 4 of the paper. t-statistics are reported in parentheses and are based on standard errors clustered at the Fama-French 48 industry level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	≥15% votes withheld (d)		
	(1)	(2)	(3)
Forced CEO turnover (d)	0.038***	0.036***	0.040***
	(3.012)	(2.913)	(2.705)
Control variables	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes
Firm FE	No	Yes	No
Director FE	No	No	Yes
Observations	88,406	88,406	88,406
Firms	3,269	3,269	3,269
Directors	18,693	18,693	18,693
Turnover-interlocked directorships	607	607	607
Adjusted R^2	0.148	0.159	0.170

Table IA.6: Excluding directors without multiple board seats

This table reports results from ordinary least squares regressions of the change in withheld votes in director re-elections on a dummy variable set equal to one if a director is involved in a forced CEO turnover at an interlocked firm, and zero otherwise, as well as control variables and fixed effects. The table reports results from tests that replicate the baseline regressions reported Table 4 of the paper, but omit control directors who do not hold multiple board seats. All regressions include interacted industry-year fixed effects. The regression reported in Column 2 additionally includes firm fixed effects. The regression reported in Column 3 replaces firm fixed effects with director fixed effects. The sample comprises director re-elections between 2003 and 2017 from ISS Voting Analytics, augmented with director data from BoardEx and ISS, stock price data from CRSP, accounting data from Compustat, and ownership data from Thomson Reuters. All variables are in first-differences. Control variables are the same as in Table 4 of the paper. t-statistics are reported in parentheses and are based on standard errors clustered at the Fama-French 48 industry level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	% votes withheld		
	(1)	(2)	(3)
Forced CEO turnover (d)	1.116***	0.842**	0.878**
	(2.843)	(2.378)	(2.044)
Control variables	Yes	Yes	Yes
Year × Industry FE	Yes	Yes	Yes
Firm FE	No	Yes	No
Director FE	No	No	Yes
Observations	62,226	62,226	62,226
Firms	3,136	3,136	3,136
Directors	12,705	12,705	12,705
Turnover-interlocked directorships	607	607	607
Adjusted R^2	0.331	0.345	0.352

Table IA.7: Excluding staggered elections and testing for the impact of the time between turnover and re-election

This table reports results from ordinary least squares regressions of the change in withheld votes in director re-elections on a dummy variable set equal to one if a director is involved in a forced CEO turnover at an interlocked firm, and zero otherwise, as well as control variables and interacted industry-year fixed effects. Column 1 reports results from tests that replicate the baseline regressions reported in Column 1 of Table 4 of the paper but omits directors elected in a staggered manner. In the remaining columns, we split the dummy variable into two dummy variables depending on whether the time between the date of the turnover announcement and the date of the next re-election is below or above a certain threshold, and zero otherwise. This threshold is set to one year in Column 2, to 0.75 years in Column 3, and to 1.25 years in Column 4. The sample comprises director re-elections between 2003 and 2017 from ISS Voting Analytics, augmented with director data from BoardEx and ISS, stock price data from CRSP, accounting data from Compustat, and ownership data from Thomson Reuters. All variables are in first-differences. Control variables are the same as in Table 4 of the paper. *t*-statistics are reported in parentheses and are based on standard errors clustered at the Fama-French 48 industry level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	% votes withheld			
	Baseline w/o staggered	Time until meetingdate		
	(1)	(2)	(3)	(4)
Forced CEO turnover (d)	1.032**			
	(2.573)			
$<$ 1y until meeting date (d)		1.162***		
		(2.778)		
$\geq$ 1y until meeting date (d)		1.332*		
		(1.890)		
$<$ 0.75yrs until meeting date (d)			1.241***	
			(2.716)	
$\geq$ 0.75yrs until meeting date (d)			1.163*	
			(1.879)	
$<$ 1.25yrs until meeting date (d)				1.120**
				(2.535)
$\geq$ 1.25yrs until meeting date (d)				1.488**
				(2.207)
Control variables	Yes	Yes	Yes	Yes
Year $\times$ Industry FE	Yes	Yes	Yes	Yes
Observations	70,852	88,406	88,406	88,406
Firms	2,263	3,269	3,269	3,269
Directors	14,134	18,693	18,693	18,693
Turnover-interlocked directorships	369	607	607	607
Adjusted R^2	0.299	0.333	0.333	0.333

Table IA.8: Definitions of variables used to estimate propensity scores

This table reports variable definitions of all variables used in the propensity score estimation model of Peters & Wagner (2014). Database mnemonics are provided in italic capitals (if available).

Variable	Definition	Source
Forced CEO turnover (d)	Dummy variable equal to one if a firm experiences a forced CEO turnover in a given year, zero otherwise	Hand-collected (Factiva/Boardex)
Industry volatility in $t-1$	Industry volatility in $t-1$ years with $t=0$ being the CEO turnover date, calculated over 10 years, using monthly returns	Ken French's Data Library
Total assets	Total assets in million USD; *AT*	Compustat
Tobin's Q	Tobin's Q (market value of assets to book value); $(AT + CSHO * PRCC\_F - CEQ - TXDB)/AT$. Missing values in $TXDB$ have been set to 0. Winsorized at the 1st and 99th percentiles	Compustat
Idiosyncratic return (m270,m21)	Buy-and-hold-return from $t-270$ to $t-21$ with $t=0$ being the CEO turnover date; adjusted for equally weighted industry return. Winsorized at the 1st and 99th percentiles	CRSP/Ken French's Data Library
Market-adj. industry return (m270,m21)	Buy-and-hold-return from $t-270$ to $t-21$ with $t=0$ being the CEO turnover date; adjusted for equally weighted market return. Winsorized at the 1st and 99th percentiles	CRSP/Ken French's Data Library
Industry-adj. volatility in $t-1$	Volatility in $t-1$ years with $t=0$ being the CEO turnover date, calculated over 48 months, adjusted for equally weighted industry returns, using monthly returns	CRSP/Ken French's Data Library
Equity-based pay >0 (d)	Dummy equal to one if the CEO received a positive amount of equity-based pay, zero otherwise	Execucomp
Dollar incentives	Pay-performance-sensitivity, calculated based on the SAS code from Daniel et al. (2020). Winsorized at the 1st and 99th percentiles	Execucomp
CEO age ≥ 60 (d)	Dummy equal to one if the CEO is older than 59, zero otherwise	BoardEx
CEO tenure	Time in years the CEO spent in office	BoardEx/ Execucomp
CEO is outsider (d)	Dummy variable equal to one if the CEO joined the company less than one year prior to his appointment as CEO, zero otherwise	BoardEx/ Execucomp
CEO is chairman (d)	Dummy variable equal to one if the CEO serves as chairman of the board, zero otherwise	BoardEx
Board size	Number of directors on the board	BoardEx
% independent directors >50 (d)	Dummy equal to one if a majority of directors is independent, zero otherwise	BoardEx
GIM index (mod.)	Modified G-Index based on Peters & Wagner (2014)	ISS
Aggregate Event Sentiment (m21,m111)	Aggregate news sentiment on a company, measured over a rolling 91-day window from $t-111$ to $t-21$ with $t=0$ being the CEO departure date. It takes into account all news sources from the Dow Jones universe	Ravenpack
Mean change in withheld votes (%)	Mean change in withheld votes across all director re-elections at the most recent meeting prior to the matching date	ISS

Table IA.9: Propensity score estimation

This table reports the results of logistic regressions of a forced CEO turnover dummy on a set of predictors and year fixed effects. The regressions reported in Columns 1 and 2 are based on Model 5 of Peters & Wagner (2014)'s first-stage regression. The regressions reported in Columns 3 and 4 extend the Peters & Wagner (2014) model by aggregate news sentiment prior to the CEO departure date, and Columns 5 and 6 extend the Peters & Wagner (2014) model by the mean change in withheld votes at director re-elections of all board members prior to the CEO departure. Columns 1, 3 and 5 report log-odds. Columns 2, 4 and 6 report odd ratios. Turnover firms are S&P 1500 firms that force out a CEO. Control firms are S&P 1500 firms that do not force out a CEO within five years before or after the CEO departure and for which we can identify outside directors with interlocked directorships and obtain re-election vote data at the interlocked firms. Definitions and data sources of all variables are provided in Table IA.8 in the Internet Appendix. z-statistics are reported in parentheses. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	Forced CEO turnover (d)					
	Log-odds	Odd ratios	Log-odds	Odd ratios	Log-odds	Odd ratios
	(1)	(2)	(3)	(4)	(5)	(6)
Industry volatility in $t-1$	2.304	10.012	3.098	22.152	0.736	2.087
	(0.663)	(0.663)	(0.881)	(0.881)	(0.184)	(0.184)
Total assets, log	0.074	1.076	0.053	1.054	0.065	1.068
	(0.998)	(0.998)	(0.709)	(0.709)	(0.867)	(0.867)
Tobin's Q	-0.106	0.900	-0.091	0.913	-0.111	0.895
	(-1.029)	(-1.029)	(-0.888)	(-0.888)	(-0.973)	(-0.973)
Idiosyncratic return (m270,m21)	-3.004***	0.050***	-2.877***	0.056***	-3.116***	0.044***
	(-9.196)	(-9.196)	(-8.535)	(-8.535)	(-8.686)	(-8.686)
Market-adj. industry return (m270,m21)	-1.717***	0.180***	-1.538***	0.215***	-1.872***	0.154***
	(-4.023)	(-4.023)	(-3.511)	(-3.511)	(-3.749)	(-3.749)
Industry-adj. volatility in $t-1$	1.265	3.544	1.200	3.319	2.635	13.945
	(0.741)	(0.741)	(0.693)	(0.693)	(1.383)	(1.383)
Equity-based pay >0 (d)	0.111	1.118	0.094	1.098	-0.137	0.872
	(0.397)	(0.397)	(0.333)	(0.333)	(-0.463)	(-0.463)
Dollar incentives, log	-0.084	0.919	-0.077	0.926	-0.099	0.906
	(-1.237)	(-1.237)	(-1.128)	(-1.128)	(-1.321)	(-1.321)

Table IA.9: Propensity score estimation (cont.)

Dependent variable:	Forced CEO turnover (d)					
	Log-odds	Odd ratios	Log-odds	Odd ratios	Log-odds	Odd ratios
	(1)	(2)	(3)	(4)	(5)	(6)
CEO age $\geq$ 60 (d)	-0.974***	0.378***	-0.961***	0.383***	-0.882***	0.414***
	(-3.571)	(-3.571)	(-3.521)	(-3.521)	(-3.022)	(-3.022)
CEO tenure	-0.056***	0.945***	-0.058***	0.943***	-0.067***	0.935***
	(-3.193)	(-3.193)	(-3.267)	(-3.267)	(-3.434)	(-3.434)
CEO is outsider (d)	0.689***	1.992***	0.707***	2.028***	0.761***	2.140***
	(4.325)	(4.325)	(4.423)	(4.423)	(4.223)	(4.223)
CEO is chairman (d)	-0.705***	0.494***	-0.687***	0.503***	-0.741***	0.476***
	(-3.382)	(-3.382)	(-3.260)	(-3.260)	(-3.085)	(-3.085)
Board size, log	-1.117**	0.327**	-1.003**	0.367**	-1.328**	0.265**
	(-2.450)	(-2.450)	(-2.197)	(-2.197)	(-2.520)	(-2.520)
% independent directors > 50 (d)	-0.325	0.723	-0.355	0.701	-0.169	0.844
	(-1.032)	(-1.032)	(-1.129)	(-1.129)	(-0.412)	(-0.412)
GIM index (mod.)	-0.026	0.974	-0.021	0.979	-0.022	0.978
	(-0.546)	(-0.546)	(-0.435)	(-0.435)	(-0.385)	(-0.385)
Aggregate Event Sentiment (m21,m111)			-0.008**	0.992**		
			(-2.270)	(-2.270)		
Mean change in withheld votes (%)					0.022**	1.022**
					(2.361)	(2.361)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	160,494	160,494	157,896	157,896	115,909	115,909
Firms	1,888	1,888	1,868	1,868	1,710	1,710
Pseudo R^2	0.098	0.098	0.100	0.100	0.119	0.119

Table IA.10: Covariate balancing tests with Peters & Wagner (2014)'s forced CEO turnover likelihood model

This table reports differences in firm characteristics between firms that force out a CEO and firms that do not force out a CEO. The table reports means and the number of observations as well as results from tests for differences in means between the two samples. Turnover firms are S&P 1500 firms that force out a CEO. Control firms are S&P 1500 firms that do not force out a CEO within five years before or after the CEO departure and for which we can identify outside directors with interlocked directorships and obtain re-election vote data at the interlocked firms. Panel A reports results of balancing tests for the full sample. Panel B reports results of balancing tests after matching control firms using the forced CEO turnover likelihood model of Peters & Wagner (2014). Definitions and data sources of all variables are provided in Table IA.8 in the Internet Appendix. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Pre-matching

	Turnover firms		Control firms		Difference	
	N	Mean	N	Mean	Diff.	t-value
Industry volatility in $t-1$	183	0.08	160,311	0.07	0.00***	2.80
Total assets, log	183	7.89	160,311	8.32	-0.43***	-3.46
Tobin's Q	183	1.64	160,311	1.82	-0.18**	-2.43
Idiosyncratic return (m270,m21)	183	-0.28	160,311	-0.04	-0.24***	-10.69
Market-adj. industry return (m270,m21)	183	0.02	160,311	0.02	-0.00	-0.34
Industry-adj. volatility in $t-1$	183	0.06	160,311	0.04	0.01***	4.00
Equity-based pay >0 (d)	183	0.91	160,311	0.91	-0.00	-0.22
Dollar incentives, log	183	4.75	160,311	5.55	-0.80***	-7.51
CEO age ≥ 60 (d)	183	0.09	160,311	0.30	-0.21***	-6.13
CEO tenure	183	4.88	160,311	7.60	-2.72***	-5.64
CEO is outsider (d)	183	0.44	160,311	0.29	0.15***	4.47
CEO is chairman (d)	183	0.27	160,311	0.55	-0.28***	-7.49
Board size, log	183	2.18	160,311	2.26	-0.08***	-4.38
% independent directors >50 (d)	183	0.93	160,311	0.96	-0.02	-1.38
GIM index (mod.)	183	5.30	160,311	5.50	-0.21	-1.59

Table IA.10: Covariate balancing tests with Peters & Wagner (2014)'s forced CEO turnover likelihood model (cont.)

Panel B: Post-matching

	Turnover firms		Control firms		Difference	
	N	Mean	N	Mean	Diff.	t-value
Industry volatility in $t-1$	181	0.08	181	0.08	0.00	0.10
Total assets, log	181	7.91	181	8.04	-0.13	-0.73
Tobin's Q	181	1.65	181	1.67	-0.03	-0.30
Idiosyncratic return (m270,m21)	181	-0.28	181	-0.27	-0.01	-0.30
Market-adj. industry return (m270,m21)	181	0.02	181	0.01	0.01	0.59
Industry-adj. volatility in $t-1$	181	0.06	181	0.05	0.00	0.95
Equity-based pay >0 (d)	181	0.91	181	0.90	0.01	0.18
Dollar incentives, log	181	4.78	181	4.76	0.03	0.19
CEO age ≥ 60 (d)	181	0.09	181	0.08	0.02	0.56
CEO tenure	181	4.89	181	4.79	0.10	0.23
CEO is outsider (d)	181	0.43	181	0.40	0.03	0.53
CEO is chairman (d)	181	0.28	181	0.25	0.02	0.48
Board size, log	181	2.19	181	2.20	-0.01	-0.43
% independent directors >50 (d)	181	0.93	181	0.96	-0.02	-0.92
GIM index (mod.)	181	5.29	181	5.04	0.25	1.34

Table IA.11: Propensity score matching analysis with prolonged performance measures

This table reports results from ordinary least squares regressions of withheld votes in director re-elections on a dummy variable set equal to one if a director is involved in a forced CEO turnover at an interlocked firm, and zero otherwise, as well as control variables. The regression reported in Column 2 includes year and interlocked firm industry fixed effects. The regression reported in Column 3 includes turnover event fixed effects. The treatment sample comprises re-elections of directors involved in a forced CEO turnover at an interlocked firm. The control sample comprises re-elections of directors interlocked to a sample of propensity score-matched firms with characteristics similar to the turnover firms. The sample is based on propensity scores estimated using the forced CEO turnover likelihood model of Peters & Wagner (2014), but with performance measures estimated over a three-year period preceding the turnover (instead of a one-year period). *t*-statistics are reported in parentheses and are based on standard errors clustered at the Fama-French 48 industry level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	% votes withheld		
	(1)	(2)	(3)
Forced CEO turnover (d)	1.351***	1.319***	0.981**
	(3.882)	(3.852)	(2.019)
ISS withhold/against (d)	18.634***	18.261***	18.354***
	(9.665)	(9.649)	(10.184)
# of other board seats	0.187**	0.195**	0.144
	(2.131)	(2.231)	(1.132)
Female (d)	-0.094	0.525	0.251
	(-0.152)	(0.831)	(0.403)
Age (yrs), log	1.681	0.918	1.135
	(0.661)	(0.365)	(0.568)
Tenure (yrs), log	1.456***	1.152***	1.052***
	(4.290)	(3.847)	(3.153)

Table IA.11: Propensity score matching analysis with prolonged performance measures (cont.)

Dependent variable:	% votes withheld		
	(1)	(2)	(3)
Total assets, log	0.490*	0.573**	0.628***
	(1.939)	(2.506)	(2.893)
Tobin's Q	0.212*	0.255*	0.155
	(1.705)	(1.777)	(0.742)
ROA	-2.685	-1.723	-0.878
	(-1.528)	(-0.901)	(-0.477)
BH return (m270,m21)	-1.681*	-0.979	-1.049
	(-1.748)	(-0.985)	(-1.524)
Board size	-0.271**	-0.145	-0.214
	(-2.024)	(-1.227)	(-1.580)
% outside directors	7.924**	3.603	3.606
	(2.066)	(0.922)	(0.969)
% busy outside dirs	0.511	0.547	-0.279
	(0.387)	(0.447)	(-0.187)
Institutional ownership (%)	0.629	-0.183	-0.555
	(0.676)	(-0.234)	(-0.516)
Year FE	No	Yes	No
Industry FE	No	Yes	No
Turnover FE	No	No	Yes
Observations	1,122	1,122	1,122
Firms	726	726	726
Directors	739	739	739
Turnover-interl. d'ships	526	526	526
Adjusted R^2	0.255	0.266	0.263

Table IA.12: Covariate balancing tests with Peters & Wagner (2014)'s forced CEO turnover likelihood model extended by aggregate news sentiment

This table reports differences in firm characteristics between firms that force out a CEO and firms that do not force out a CEO. The table reports means and the number of observations as well as results from tests for differences in means between the two samples. Turnover firms are S&P 1500 firms that force out a CEO. Control firms are S&P 1500 firms that do not force out a CEO within five years before or after the CEO departure and for which we can identify outside directors with interlocked directorships and obtain re-election vote data at the interlocked firms. Panel A reports results of balancing tests for the full sample. Panel B reports results of balancing tests after matching control firms using the forced CEO turnover likelihood model of Peters & Wagner (2014), augmented with the aggregate company news sentiment prior to the CEO departure date. Definitions and data sources of all variables are provided in Table IA.8 in the Internet Appendix. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Pre-matching

	Turnover firms		Control firms		Difference	
	N	Mean	N	Mean	Diff.	t-value
Industry volatility in $t-1$	181	0.08	157,715	0.07	0.00***	2.97
Total assets, log	181	7.86	157,715	8.33	-0.47***	-3.73
Tobin's Q	181	1.64	157,715	1.82	-0.18**	-2.36
Idiosyncratic return (m270,m21)	181	-0.28	157,715	-0.03	-0.24***	-10.65
Market-adj. industry return (m270,m21)	181	0.02	157,715	0.02	-0.00	-0.37
Industry-adj. volatility in $t-1$	181	0.06	157,715	0.04	0.01***	4.03
Equity-based pay >0 (d)	181	0.91	157,715	0.91	-0.01	-0.29
Dollar incentives, log	181	4.74	157,715	5.55	-0.81***	-7.58
CEO age ≥ 60 (d)	181	0.09	157,715	0.30	-0.21***	-6.06
CEO tenure	181	4.89	157,715	7.61	-2.72***	-5.61
CEO is outsider (d)	181	0.44	157,715	0.29	0.16***	4.62
CEO is chairman (d)	181	0.27	157,715	0.55	-0.28***	-7.46
Board size, log	181	2.18	157,715	2.26	-0.08***	-4.36
% independent directors >50 (d)	181	0.93	157,715	0.96	-0.02	-1.50
GIM index (mod.)	181	5.32	157,715	5.51	-0.19	-1.48
Aggregate Event Sentiment (m21,m111)	181	62.35	157,715	70.13	-7.78***	-5.22

Table IA.12: Covariate balancing tests with Peters & Wagner (2014)'s forced CEO turnover likelihood model extended by aggregate news sentiment (cont.)

Panel B: Post-matching

	Turnover firms		Control firms		Difference	
	N	Mean	N	Mean	Diff.	t-value
Industry volatility in $t-1$	178	0.08	178	0.08	-0.00	-0.06
Total assets, log	178	7.89	178	7.64	0.26	1.35
Tobin's Q	178	1.65	178	1.65	0.01	0.09
Idiosyncratic return (m270,m21)	178	-0.27	178	-0.25	-0.02	-0.51
Market-adj. industry return (m270,m21)	178	0.02	178	0.00	0.01	0.75
Industry-adj. volatility in $t-1$	178	0.06	178	0.06	-0.00	-0.29
Equity-based pay >0 (d)	178	0.90	178	0.85	0.05	1.46
Dollar incentives, log	178	4.77	178	4.75	0.03	0.17
CEO age ≥ 60 (d)	178	0.10	178	0.06	0.03	1.18
CEO tenure	178	4.91	178	5.33	-0.43	-0.95
CEO is outsider (d)	178	0.43	178	0.46	-0.03	-0.53
CEO is chairman (d)	178	0.28	178	0.29	-0.01	-0.24
Board size, log	178	2.19	178	2.16	0.03	1.11
% independent directors >50 (d)	178	0.94	178	0.93	0.01	0.22
GIM index (mod.)	178	5.33	178	5.50	-0.17	-0.94
Aggregate Event Sentiment (m21,m111)	178	62.83	178	64.37	-1.54	-0.65

Table IA.13: Covariate balancing tests with Peters & Wagner (2014)'s forced CEO turnover likelihood model extended by mean change in withheld votes

This table reports differences in firm characteristics between firms that force out a CEO and firms that do not force out a CEO. The table reports means and the number of observations as well as results from tests for differences in means between the two samples. Turnover firms are S&P 1500 firms that force out a CEO. Control firms are S&P 1500 firms that do not force out a CEO within five years before or after the CEO departure and for which we can identify outside directors with interlocked directorships and obtain re-election vote data at the interlocked firms. Panel A reports results of balancing tests for the full sample. Panel B reports results of balancing tests after matching control firms using the forced CEO turnover likelihood model of Peters & Wagner (2014), augmented with the mean change in withheld votes at director re-elections of all board members prior to the CEO departure. Definitions and data sources of all variables are provided in Table IA.8 in the Internet Appendix. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Pre-matching

	Turnover firms		Control firms		Difference	
	N	Mean	N	Mean	Diff.	t-value
Industry volatility in $t-1$	149	0.07	115,760	0.07	0.00**	2.32
Total assets, log	149	7.90	115,760	8.42	-0.52***	-3.71
Tobin's Q	149	1.63	115,760	1.82	-0.19**	-2.29
Idiosyncratic return (m270,m21)	149	-0.27	115,760	-0.02	-0.25***	-10.14
Market-adj. industry return (m270,m21)	149	0.01	115,760	0.02	-0.01	-0.73
Industry-adj. volatility in $t-1$	149	0.06	115,760	0.04	0.02***	5.02
Equity-based pay >0 (d)	149	0.89	115,760	0.92	-0.03	-1.43
Dollar incentives, log	149	4.69	115,760	5.53	-0.84***	-7.23
CEO age ≥ 60 (d)	149	0.10	115,760	0.31	-0.21***	-5.54
CEO tenure	149	4.92	115,760	7.74	-2.82***	-5.33
CEO is outsider (d)	149	0.46	115,760	0.28	0.18***	4.88
CEO is chairman (d)	149	0.25	115,760	0.53	-0.28***	-6.90
Board size, log	149	2.17	115,760	2.26	-0.09***	-4.87
% independent directors >50 (d)	149	0.95	115,760	0.97	-0.01	-0.84
GIM index (mod.)	149	5.33	115,760	5.59	-0.26*	-1.85
Mean change in withheld votes (%)	149	2.86	115,760	0.84	2.03***	3.14

Table IA.13: Covariate balancing tests with Peters & Wagner (2014)'s forced CEO turnover likelihood model extended by mean change in withheld votes (cont.)

Panel B: Post-matching

	Turnover firms		Control firms		Difference	
	N	Mean	N	Mean	Diff.	t-value
Industry volatility in $t-1$	147	0.07	147	0.08	-0.00	-0.92
Total assets, log	147	7.93	147	7.69	0.24	1.25
Tobin's Q	147	1.63	147	1.69	-0.06	-0.59
Idiosyncratic return (m270,m21)	147	-0.27	147	-0.26	-0.01	-0.23
Market-adj. industry return (m270,m21)	147	0.01	147	0.02	-0.00	-0.15
Industry-adj. volatility in $t-1$	147	0.06	147	0.06	-0.00	-0.07
Equity-based pay >0 (d)	147	0.89	147	0.90	-0.01	-0.38
Dollar incentives, log	147	4.71	147	4.74	-0.02	-0.16
CEO age ≥ 60 (d)	147	0.10	147	0.08	0.02	0.60
CEO tenure	147	4.90	147	4.63	0.27	0.64
CEO is outsider (d)	147	0.45	147	0.46	-0.01	-0.12
CEO is chairman (d)	147	0.25	147	0.26	-0.01	-0.13
Board size, log	147	2.18	147	2.16	0.02	0.70
% independent directors >50 (d)	147	0.95	147	0.97	-0.02	-0.92
GIM index (mod.)	147	5.32	147	5.45	-0.13	-0.61
Mean change in withheld votes (%)	147	2.71	147	2.47	0.24	0.26

Table IA.14: Forced CEO turnovers and the cumulative market capitalization of all board seats

This table reports results from ordinary least squares regressions of the change in the cumulative market capitalization of all firms where a director holds board seats t years after a forced CEO turnover on a dummy variable set equal to one if a director is involved in the forced CEO turnover, and zero otherwise, as well as director control variables, turnover event fixed effects, and interlocked firm fixed effects. The dependent variable is transformed using the inverse hyperbolic sine transformation. The treatment sample comprises outside directorships of directors interlocked to forced CEO turnovers between 2003 and 2017. The control sample comprises outside directorships of directors not interlocked to a forced turnover but share a board seat with a director interlocked to a forced CEO turnover at the turnover announcement. Control variables are the same as in Table 11. Definitions and data sources of all variables are provided in Table A.1. t-statistics are reported in parentheses and are based on standard errors clustered at the turnover level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable	Difference in the sum of market cap. over all directorships	
	$t_1 - t_0$	$t_5 - t_0$
	(1)	(2)
Forced CEO turnover (d)	-1.186***	-1.817***
	(-4.045)	(-4.016)
Director control variables	Yes	Yes
Turnover FE	Yes	Yes
Firm FE	Yes	Yes
Observations	4,013	3,300
Firms	465	404
Directors	2,885	2,425
Turnover-interlocked directorships	594	489
Adjusted R^2	0.035	0.125

Table IA.15: Cross-sectional tests: Forced CEO turnovers and losses of directorships

This table reports results from ordinary least squares regressions of a dummy variable indicating a loss of directorships within 5 years after the turnover on dummy variables set equal to one if a director is involved in a certain type of CEO turnover at an interlocked firm, and zero otherwise, control variables, as well as turnover event fixed effects and interlocked firm fixed effects. The regression reported in Column 1 includes indicator variables for forced and unforced CEO turnovers at interlocked firms. The regression reported in Column 2 includes indicator variables for performance-induced forced turnovers, non-performance-induced forced turnovers, performance-induced unforced turnovers, and non-performance-induced unforced turnovers at interlocked firms. In the regression reported in Column 3, the variable indicating a forced turnover at an interlocked firm is split based on whether the turnover takes place during the first three years (Honeymoon stage), between the third and 13th year (Harvest stage), or after the 13th year of the departing CEO's tenure (Decline stage). The regression reported in Column 4 includes a dummy variable equal to one if a director is involved in a forced turnover at an interlocked firm and an indicator variable set equal to one if a director was involved in hiring the fired CEO but left the interlocked firm's board before the departure of the CEO, and zero otherwise, respectively. In the regression reported in Column 5, the dummy variable indicating a forced CEO turnover at an interlocked firm is split based on whether or not the turnover-interlocked director was appointed to the turnover firm's board during the departing CEO's tenure (co-opted). In the regression reported in Column 6, the dummy variable indicating a forced CEO turnover at an interlocked firm is split based on whether or not a full CEO replacement is announced with the departure. In the regression reported in Column 7, the dummy variable indicating a forced CEO turnover at an interlocked firm is split based on whether or not the turnover-interlocked director is a member of the nominating or compensation committee of the turnover firm. The treatment sample comprises outside directorships of directors interlocked to forced CEO turnovers between 2003 and 2017. The control sample comprises outside directorships of directors not interlocked to a forced turnover but share a board seat with a director interlocked to a forced CEO turnover at the turnover announcement. Control variables are the same as in Table 11. Definitions and data sources of all variables are provided in Table A.1. *t*-statistics are reported in parentheses and are based on standard errors clustered at the turnover level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	Loses directorships within [0,5] years (d)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Forced CEO turnover (d)	0.081***			0.093***			
	(2.749)			(2.804)			
Unforced CEO turnover (d)	0.065***						
	(5.104)						
Forced CEO turnover, performance-induced (d)		0.096***					
		(3.061)					
Forced CEO turnover, non-performance-induced (d)		-0.037					
		(-0.440)					
Unforced performance-induced turnover		0.068**					
		(2.553)					
Unforced non-performance-induced turnover		0.075***					
		(3.668)					

Table IA.15: Cross-sectional tests: Forced CEO turnovers and losses of directorships (cont.)

Dependent variable:	Loses directorships within [0,5] years (d)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Forced CEO turnover, honeymoon stage (d)			0.054				
			(1.048)				
Forced CEO turnover, harvest stage (d)			0.107***				
			(2.713)				
Forced CEO turnover, decline stage (d)			-0.189				
			(-0.663)				
Hired CEO and left before forced turnover (d)				0.093			
				(1.316)			
Forced CEO turnover, co-opted director (d)					0.109**		
					(2.473)		
Forced CEO turnover, non-co-opted director (d)					0.068		
					(1.583)		
Forced CEO turnover, monitoring committee (d)						0.083**	
						(2.274)	
Forced CEO turnover, non-monitoring committee (d)						0.101	
						(1.605)	
Forced CEO turnover, successor announced (d)							0.060
							(1.279)
Forced CEO turnover, successor not announced (d)							0.113***
							(2.679)
Director control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Turnover FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	22,730	22,250	3,299	3,813	3,299	3,291	3,299
Firms	1,224	1,214	404	450	404	402	404
Directors	7,386	7,318	2,424	2,709	2,424	2,417	2,424
Turnover-interlocked directorships	3,435	3,365	488	488	488	487	488
Adjusted R^2	0.104	0.103	0.091	0.082	0.091	0.090	0.091

Table IA.16: Propensity score matching analysis: Left before re-election

This table reports results from ordinary least squares regressions of withheld votes in director re-elections on an indicator set equal to one if a director is involved in a forced CEO turnover at an interlocked firm, an indicator variable set equal to one if a director leaves the turnover/matched control firm before the next re-election at the interlocked firm, an interaction term between these two variables, director control variables, as well as turnover event and firm fixed effects. The regression reported in Column 2 includes year and interlocked firm industry fixed effects. The regression reported in Column 3 includes turnover event fixed effects. The treatment sample comprises re-elections of directors involved in a forced CEO turnover at an interlocked firm. The control sample comprises re-elections of directors interlocked to a sample of propensity score-matched firms with characteristics similar to the turnover firms. The sample is based on propensity scores estimated using the forced CEO turnover likelihood model of Peters & Wagner (2014). For details, see Section 4.2 of the paper. *t*-statistics are reported in parentheses and are based on standard errors clustered at the Fama-French 48 industry level. *, **, and ***, indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Dependent variable:	% votes withheld		
	(1)	(2)	(3)
Forced CEO turnover (d)	1.449**	1.518***	1.058*
	(2.570)	(2.808)	(1.800)
Leaves board (d)	-0.877	-0.415	-0.683
	(-0.885)	(-0.307)	(-0.597)
Forced CEO turnover (d)× Leaves board (d)	0.227	-0.676	-0.240
	(0.170)	(-0.427)	(-0.150)
ISS withhold/against (d)	19.513***	19.335***	19.708***
	(10.436)	(10.088)	(10.254)
# of other board seats	-0.044	0.034	0.026
	(-0.270)	(0.261)	(0.143)
Female (d)	-0.484	-0.331	-0.380
	(-0.733)	(-0.522)	(-0.702)
Age (yrs), log	-0.629	-1.846	-1.970
	(-0.226)	(-0.656)	(-0.885)
Tenure (yrs), log	1.474***	1.289***	1.773***
	(3.980)	(3.698)	(5.232)

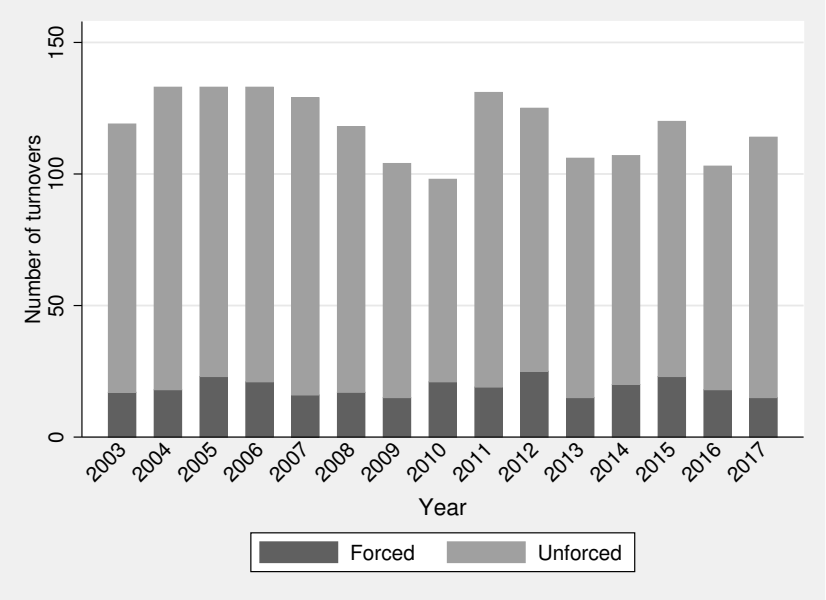
Table IA.16: Propensity score matching analysis: Left before re-election (cont.)

Dependent variable:	% votes withheld		
	(1)	(2)	(3)
Total assets, log	0.130	0.364	0.006
	(0.512)	(1.322)	(0.025)
Tobin's Q	0.045	0.154	0.054
	(0.193)	(0.648)	(0.251)
ROA	-2.429	-4.053**	-1.311
	(-0.931)	(-2.098)	(-0.652)
BH return (m270,m21)	-1.952***	-1.625***	-2.040***
	(-3.155)	(-2.983)	(-3.242)
Board size	-0.106	-0.035	-0.123
	(-0.718)	(-0.265)	(-0.769)
% outside directors	6.938*	-0.171	4.595
	(1.705)	(-0.038)	(1.252)
% busy outside directors	0.066	0.360	0.695
	(0.051)	(0.290)	(0.455)
Institutional ownership (%)	0.554	0.095	-0.512
	(0.479)	(0.084)	(-0.487)
Year FE	No	Yes	No
Industry FE	No	Yes	No
Turnover FE	No	No	Yes
Observations	1,112	1,112	1,112
Firms	745	745	745
Directors	762	762	762
Turnover-interlocked directorships	526	526	526
Adjusted R^2	0.283	0.302	0.304

Figure IA.1: CEO turnovers per year

This figure plots the number of CEO turnovers per calendar year. Panel A is based on the full sample of CEO turnover events (N=1,773). Panel B is based on the final sample of forced CEO turnover events (N=206). For details on the sample construction and the methodology used to classify CEO turnovers into forced or unforced, see Section 2 of the paper.

Panel A: Full sample of CEO turnovers



Panel B: Final sample of forced CEO turnovers

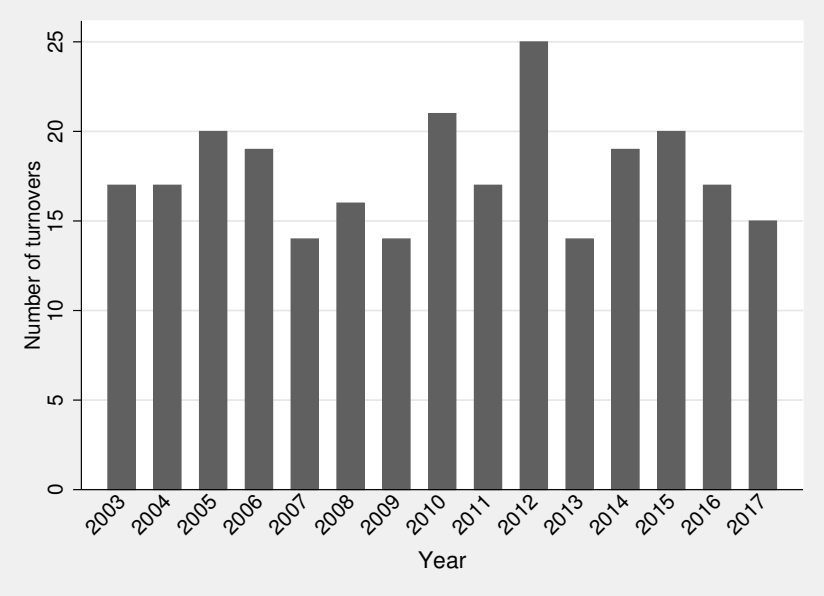


Figure IA.2: Forced CEO turnovers and withheld votes at interlocked and control firms

This figure plots the mean change in withheld votes in director re-elections for directors involved in a forced CEO turnover at an interlocked firm (dark gray bars) and control directors (light gray bars). The figure plots both bars for re-elections three years before the forced CEO turnover to three years after the forced CEO turnover. The sample comprises director re-elections between 2003 and 2017 from ISS Voting Analytics, augmented with director data from BoardEx and ISS, stock price data from CRSP, accounting data from Compustat, and ownership data from Thomson Reuters.

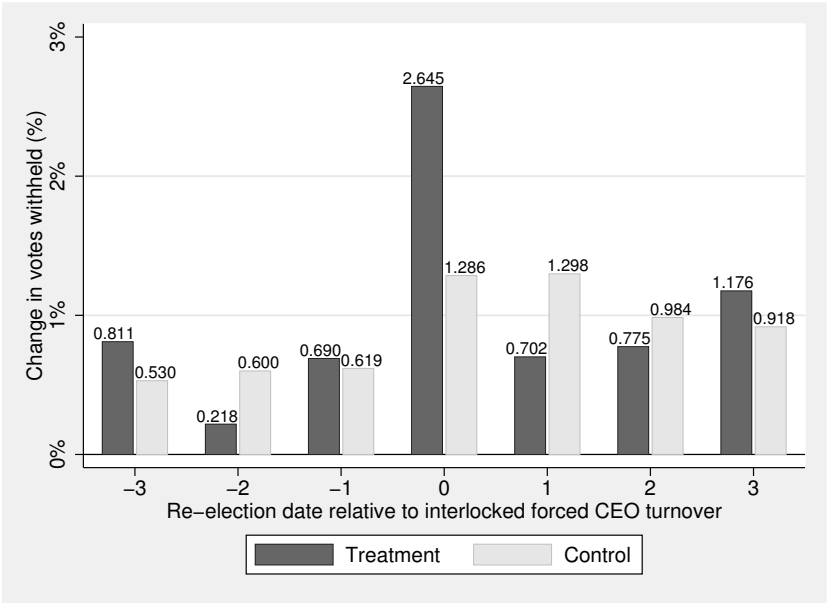
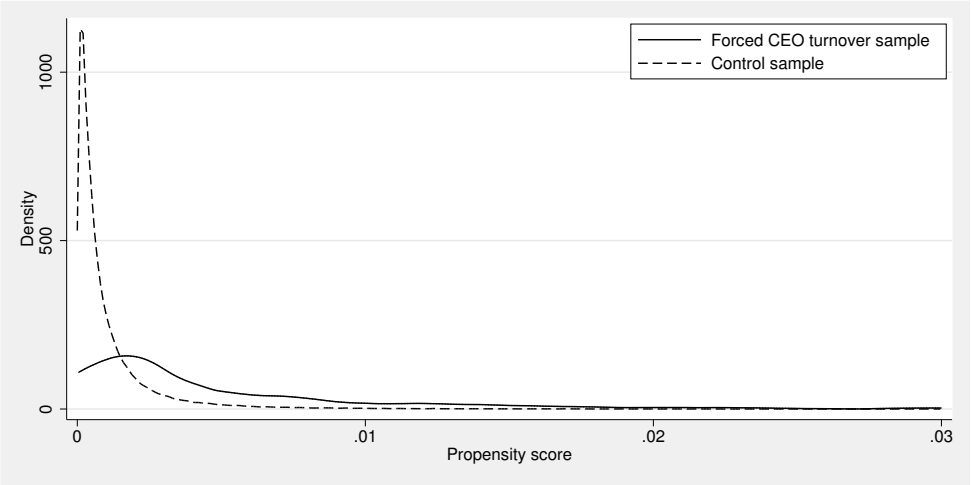


Figure IA.3: Common support with Peters & Wagner (2014)'s forced CEO turnover likelihood model

These figures plot the density distribution of the propensity scores to force out a CEO for the turnover firm sample and the matched control firm sample. Panel A plots the density distribution pre-matching. Control observations with a higher propensity than the maximum propensity of the turnover firm sample are dropped from the figure to increase legibility. Panel B plots the density distribution after applying a one-to-one nearest-neighbor matching algorithm with a maximum caliper width of 0.2 times the pooled standard deviation of the logarithm of the propensity scores (Austin, 2011b). The sample in Panel A consists of 183 turnover firm observations and 160,311 potential control firm observations. The sample in Panel B consists of 181 turnover firm observations and 181 matched control firm observations. Turnover firms are S&P 1500 firms that force out a CEO. Control firms are S&P 1500 firms that do not force out a CEO within five years before or after the departure and for which we can identify outside directors with interlocked directorships and obtain re-election vote data at the interlocked firms. The propensity scores are estimated using the forced CEO turnover likelihood model of Peters & Wagner (2014).

Panel A: Distribution of propensity scores, pre-matching



Panel B: Distribution of propensity scores, post-matching

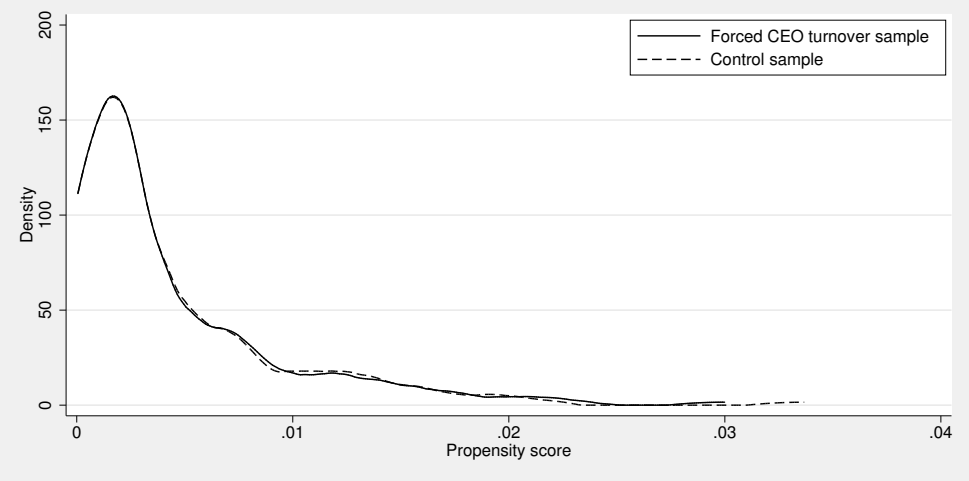
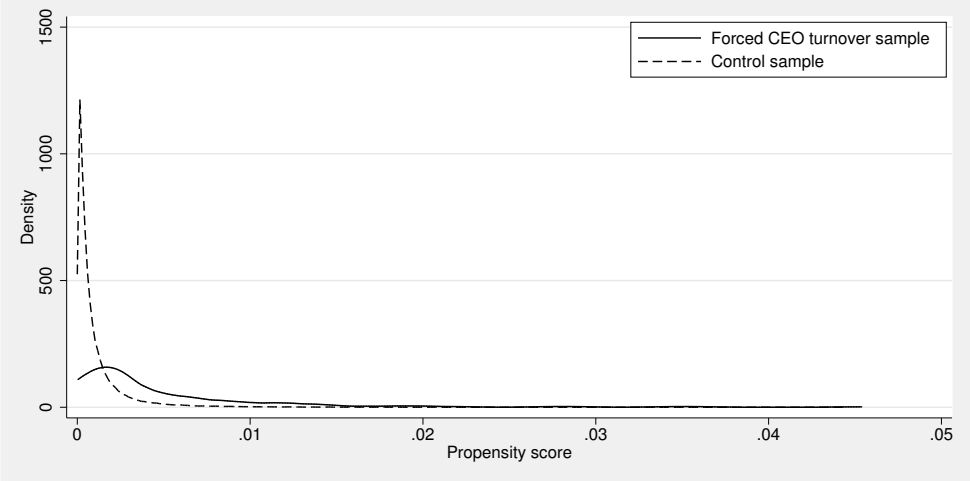


Figure IA.4: Common support with Peters & Wagner (2014)'s forced CEO turnover likelihood model extended by aggregate news sentiment

These figures plot the density distribution of the propensity scores to force out a CEO for the turnover firm sample and the matched control firm sample. Panel A plots the density distribution pre-matching. Control observations with a higher propensity than the maximum propensity of the turnover sample are dropped from the figure to increase legibility. Panel B plots the density distribution after applying a one-to-one nearest-neighbor matching algorithm with a maximum caliper width of 0.2 times the pooled standard deviation of the logarithm of the propensity scores (Austin, 2011b). The sample in Panel A consists of 183 turnover firm observations and 160,311 potential control firm observations. The sample in Panel B consists of 181 turnover firm observations and 181 matched control firm observations. Turnover firms are S&P 1500 firms that force out a CEO. Control firms are S&P 1500 firms that do not force out a CEO within five years before or after the departure and for which we can identify outside directors with interlocked directorships and obtain re-election vote data at the interlocked firms. The propensity scores are estimated using the forced CEO turnover likelihood model of Peters & Wagner (2014), augmented with the aggregate company news sentiment prior to the CEO departure date.

Panel A: Distribution of propensity scores, pre-matching



Panel B: Distribution of propensity scores, post-matching

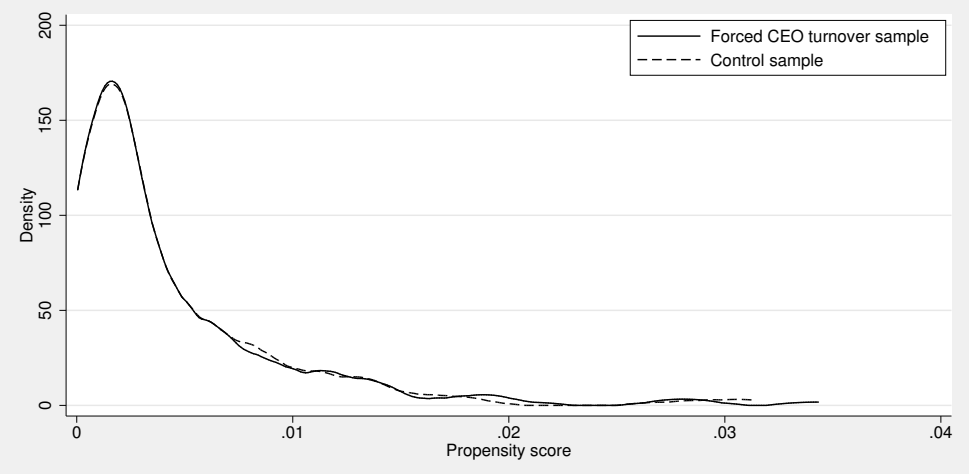
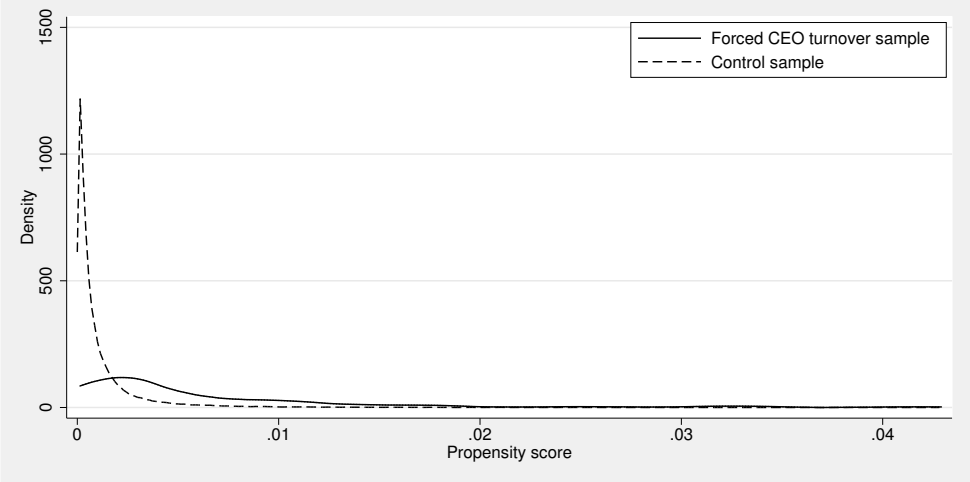


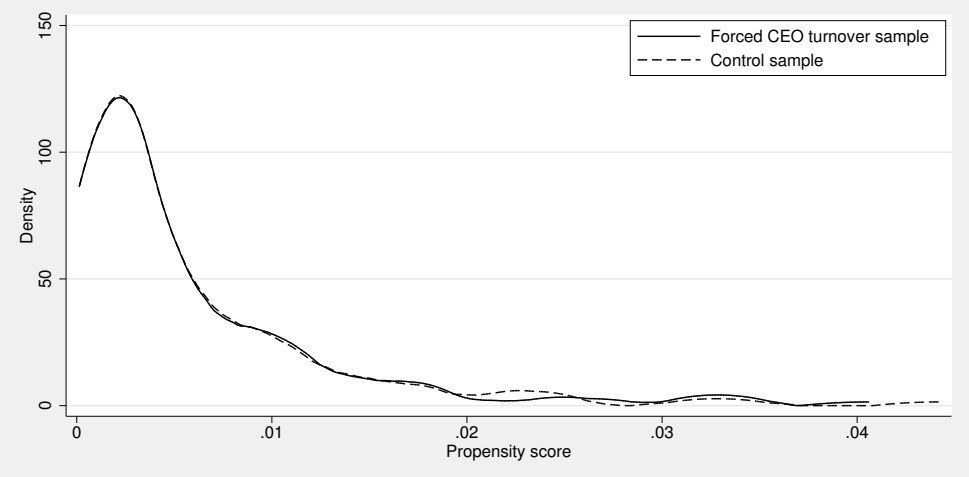
Figure IA.5: Common support with Peters & Wagner (2014)'s forced CEO turnover likelihood model extended by mean change in withheld votes

These figures plot the density distribution of the propensity scores to force out a CEO for the turnover firm sample and the matched control firm sample. Panel A plots the density distribution pre-matching. Control observations with a higher propensity than the maximum propensity of the turnover sample are dropped from the figure to increase legibility. Panel B plots the density distribution after applying a one-to-one nearest-neighbor matching algorithm with a maximum caliper width of 0.2 times the pooled standard deviation of the logarithm of the propensity scores (Austin, 2011b). The sample in Panel A consists of 183 turnover firm observations and 160,311 potential control firm observations. The sample in Panel B consists of 181 turnover firm observations and 181 matched control firm observations. Turnover firms are S&P 1500 firms that force out a CEO. Control firms are S&P 1500 firms that do not force out a CEO within five years before or after the departure and for which we can identify outside directors with interlocked directorships and obtain re-election vote data at the interlocked firms. The propensity scores are estimated using the forced CEO turnover likelihood model of Peters & Wagner (2014), augmented with the mean change in withheld votes across all director re-elections at the most recent meeting prior to the matching date.

Panel A: Distribution of propensity scores, pre-matching



Panel B: Distribution of propensity scores, post-matching



about ECGI

The European Corporate Governance Institute has been established to improve *corporate governance through fostering independent scientific research and related activities.*

The ECGI will produce and disseminate high quality research while remaining close to the concerns and interests of corporate, financial and public policy makers. It will draw on the expertise of scholars from numerous countries and bring together a critical mass of expertise and interest to bear on this important subject.

The views expressed in this working paper are those of the authors, not those of the ECGI or its members.

ECGI Working Paper Series in Finance

www.ecgi.global/content/working-papers

Electronic Access to the Working Paper Series

The full set of ECGI working papers can be accessed through the Institute's Web-site (www.ecgi.global/content/working-papers) or SSRN:

Finance Paper Series	http://www.ssrn.com/link/ECGI-Fin.html
Law Paper Series	http://www.ssrn.com/link/ECGI-Law.html