Crowd-Sourced CEO Approval and Turnover*

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This Draft: August 20, 2021

Abstract

This study examines how prevailing employee approval ratings of CEOs improve the predictability of CEO turnover. Using a novel dataset of crowd-sourced reviews, we find that CEOs with high employee approval are less likely to be removed, even after a poor performance. The decrease in turnover–performance sensitivity is particularly strong when the relative importance of employees is greater in industries of higher intangible asset intensity and in states with strong employee protection. Firms with higher CEO approval subsequently show improved performance and lowered firm-specific risk. We highlight the role of employees as a key stakeholder in predicting CEO turnover, consistent with the value creation view of stakeholder capitalism.

JEL Classifications: G12; G14; G34

Keywords: CEO turnover; crowd-sourced reviews; internal stakeholders; stakeholder capitalism; social media.

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* Chang and Park acknowledge generous research support from KAIST. We thank conference and seminar participants at Asian Finance Association Annual Meeting, Bocconi University, FMA Annual Meeting, INSEAD, KAIST, Korea University, Nanyang Technological University, Seoul National University, Sungkyunkwan University, the University of Hawaii, SMS Annual Conference, and the University of Sydney for their valuable comments. Tae Yeon Kim and Saeyeon Oh provided excellent research assistance.

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1. Introduction

For whom should corporations operate? Since the famous Berle–Dodd debate of the 1930s, whether corporations should serve the interests of their stakeholders has been a subject of long, intense debate. With the recent surge of interest in stakeholder capitalism, the 2019 Business Roundtable Statement on the Purpose of a Corporation has overturned its 22-year focus on maximizing shareholder return, declaring instead that companies "share a fundamental commitment to all of [their] stakeholders." Yet, questions remain as to what it means for corporations to incorporate the views and act in the interests of their stakeholders in everyday operation, particularly from their shareholders' perspective. Do shareholders benefit from stakeholder-oriented corporate behavior? If not, does the move toward stakeholder capitalism occur at their expense? With the extant literature highlighting the importance of key stakeholders—particularly employees—in shaping corporate governance, the question of whether stakeholder-oriented governance pays from the shareholders' perspectives has become fundamentally important.[1]

Deciding over whether to retain or fire a poorly performing CEO is a key role performed by the corporate board in a firm's internal governance. The aforementioned discussion on stakeholder capitalism suggests that this CEO turnover decision may also be influenced by whether employees endorse or approve their CEOs. Whether the shareholders benefit when the boards listen to the employees' voices, if at all, is also unclear. On the one hand, employee approval of CEOs could hold valuable information about the CEO's ability or indicate the internal stakeholders' willingness to maintain and furnish the firm's implicit contracts.[2] On the other hand, a CEO's popularity among his/her employees could be symptomatic of a manager–worker

[1] For example, previous studies raise the possibility of a manager–worker alliance, whereby the support of employees enables the manager to become more entrenched and harm shareholder interests (Pagano and Volpin, 2005; Atanassov and Kim, 2009; Cronqvist, Heyman, Nilsson, Svaleryd, and Vlachos, 2009; John, Knyazeva, and Knyazeva, 2015; Masulis, Wang, and Xie, 2020).

[2] Many studies highlight that employee support could reduce the firm's costs of maintaining its implicit contracts with internal stakeholders (Jensen and Meckling, 1976), which would in turn contribute to shareholder wealth (Edmans, 2009; Deng, Kang, and Low, 2013; Dimson, Karakaş, and Li, 2015; Ferrell, Liang, and Renneboog, 2016; Flammer and Kacperczyk, 2016), a result commonly referred to as "doing well by doing good."

alliance detrimental to shareholder wealth. Using a novel social media dataset that allows us to isolate the prevailing employee sentiment concerning the CEO, we examine the role of employees' perception of their CEOs in the board's turnover–retention decisions and what it means for shareholder wealth. Specifically, we ask the following questions: Are CEOs who are popular among the employees less likely to be fired after a bad performance? If so, is it in the shareholder's interests to retain these CEOs?

The mainstream CEO turnover literature highlights that nonperformance factors affect the board's turnover decisions. For example, the prevailing strength of internal governance as proxied by the level of board independence, CEO-chair duality, and the board directors' social ties with the CEO has been identified as a significant factor in determining whether a poorly performing CEO is fired (e.g., Weisbach, 1988; Denis, Denis, and Sarin, 1997; Goyal and Park, 2002; Hwang and Kim, 2009; Coles, Daniel, and Naveen, 2014; Guo and Masulis, 2015). In fact, CEOs may even be fired for factors beyond their own control, such as an adverse industry-wide shock (Jenter and Kanaan, 2015). A recent study by Jenter and Lewellen (2021) estimates that performance-induced turnover accounts for 38%–55% of all turnovers. Although this number is considerably higher than that of conventionally classified forced turnovers (Parrino, 1997), this again emphasizes that CEO turnovers are not decided on the basis of performance alone, ultimately because performance only serves as an imperfect signal of the CEO's ability.

If so, considering employee perceptions of the current CEO before the turnover decision may be in the board's interest for various reasons. First, the rich literature on the stakeholder theory, which views the firm as a nexus of implicit contracts (Alchian and Demsetz, 1972; Jensen and Meckling, 1976) predicts that the stakeholders' willingness to maintain implicit contracts with the firm is critical to shareholder wealth. According to this line of argument, when a CEO is popular with the stakeholders, they are more likely to cooperate and subscribe to the CEO's management style. This would make the board more reluctant to fire such CEOs after temporary underperformance, as their termination would bring about contracting costs and lower the employee commitment, which would be damaging to shareholder wealth. Rather, keeping these

CEOs could enhance shareholder welfare in the long term through better internal stakeholder cooperation. Anecdotal evidence from professional sports illustrates this aptly. Bill Belichick's first season as head coach of the NFL's New England Patriots in 2000 was poor, with a record of 5–11. Yet, over the season, players became aware of Belichick's qualities and rallied to his support, encouraging other promising players to join the team; their post-2000 performance vindicated players' rally, with 17 playoffs and 6 Super Bowls.

Second, in some circumstances, employees may directly hold crucial information about the CEO. Theranos Inc. is a case in point. The Silicon Valley-based health startup, which claimed to have revolutionized the blood testing process, had reached a height of $10 billion valuation in 2013 and 2014. However, two of its employees blew the whistle on its fraudulent claims, notifying the superiors that the company was performing blood tests not on its own machines but conventional testing machines. When the company's management failed to respond, they reported the allegations to the regulatory authorities. The company's wrongdoing was uncovered; it was dissolved in 2018 with its CEO, Elizabeth Holmes, facing fraud and conspiracy charges. Although a single rank-and-file employee holding relevant information about the CEO is not always likely, the employees, as a group, may generate some valuable "wisdom of crowds," as shown in recent studies (e.g., Babenko and Sen, 2016; Green, Huang, Wen, and Zhou, 2019). Indeed, the textual contents of crowd-sourced social media reviews hold considerable information about the firm (Chen, De, Hu, and Hwang, 2014; Jame, Johnston, Markov, and Wolfe, 2016; Huang, 2018). If so, the prevailing employee perception of the CEO may indicate not only the employees' willingness to cooperate with the CEO but also some information about the CEO's managerial qualities.

Under the first two hypotheses, considering the employee perception of the CEO in the board's turnover decision needs not be in conflict with shareholder interests. Keeping CEOs with temporary poor performance may be an optimal choice for the firm's shareholders if this is justified through "doing well by doing good" or if employee approval contains valuable information about CEO ability. In contrast, keeping underperforming CEOs popular among employees could be detrimental to shareholder wealth if high levels

of employee approval indicate an agency problem that arises from a manager–worker alliance. After all, some managers engage in costly labor-friendly policies to make the company less attractive to raiders (Pagano and Volpin, 2005), for example, by persuading employees to hold their own firm's stock through company pension plans or employee stock ownership programs (Rauh, 2006; Kim and Ouimet, 2014).[3] Indeed, as Atanassov and Kim (2009) reveal, strong union collective bargaining rights protect the employees from large-scale layoffs and the top management from being fired, which in turn allows the manager to become more entrenched. If high levels of employee approval are symptomatic of a manager–worker alliance, we expect its implication for the shareholders to be largely negative, as high employee approval enables and widens the interest misalignment between shareholders and entrenched managers.

Thus, our research questions are twofold. First, we establish whether CEOs regarded highly by their employees are indeed less likely to face turnover, following their poor performance. In doing so, we also examine the circumstances under which employee approval matters more for CEO turnover decisions, which help us weigh the relative likelihoods of these competing hypotheses as to why employee perceptions matter, if at all. Second, by examining the value implications of favorable employee perceptions, we explore whether keeping such popular CEOs with temporarily poor performance is in the shareholders' interest. This, in turn, allows us to ascertain whether high employee approval is merely symptomatic of an internal agency problem arising from a manager–worker alliance or whether a popular CEO's temporary underperformance experiences a rebound, possibly due to the CEO's better stakeholder management and through other managerial qualities not captured in current financial statements but discernable in the employees' eyes.

Our research question necessitates a measure of the prevailing employee sentiment concerning the CEO. To this end, we assemble a novel dataset containing more than one million crowd-sourced employer reviews of Execucomp firms posted on Glassdoor, a popular career community website, between 2012 and

[3] John, Knyazeva, and Knyazeva (2015) and Dessaint, Golubov, and Volpin (2017) similarly find that acquirers in high employee protection states or countries receive lower announcement returns and are less likely to engage in mergers in the first place.

2018. This allows us to directly identify the level of CEO approval among employees, as they indicate in their voluntary reviews whether they approve, disapprove, or are neutral toward their CEOs. In particular, because of the multi-faceted nature of these review scores, we can compare the CEO approval score with other categories. These voluntary registrations of CEO approval also help us because they differ from the firm's public-relations-driven images of CEOs (Guiso, Sapienza, and Zingales, 2015). Recent studies examine the information contents of these social media reviews in different asset pricing or corporate finance contexts (Huang, Li, Meschke, and Guthrie, 2015; Green, Huang, Wen, and Zhou, 2019; Huang, Li, and Markov, 2020; Lee, Ng, Shevlin, and Venkat, 2020; Chemmanur, Rajaiya, and Sheng, 2020; Welch and Yoon, 2021). We contribute to this growing literature as the first empirical study to explore the relationship between crowd-sourced employee reviews and the likelihood of CEO turnover.

We first examine the relationship between the CEO approval score and the likelihood of forced turnover. Even after controlling for firm performance and other characteristics, we find that a high level of CEO approval is associated with a significantly lower likelihood of forced turnover. We uncover a similar pattern for turnover–performance sensitivity, with a high level of CEO approval significantly weakening the sensitivity. This suggests that the board places a lower weight on the recent performance when deciding whether to retain a CEO who is popular among employees. In contrast to the CEO approval score, we find the relations between other Glassdoor categories including firm outlook and overall satisfaction scores and the likelihood of forced turnover are time-sensitive, highlighting the importance of the employees' *CEO-specific* sentiments in the board's turnover decision.

As discussed earlier, the board may consider prevailing employee sentiment for various reasons, including (i) implicit contracting costs and the need for stakeholder management, (ii) employees' information about the CEO's managerial qualities, and (iii) agency problems associated with a manager–worker alliance. To explore these hypotheses in more detail, we form various subsamples and reexamine the turnover–performance relationship. First, according to the contracting cost hypothesis, the board is more likely to

consider employee opinions among firms where employee cooperation is vital. Specifically, in firms where employees hold more bargaining power and the relative importance of physical capital is lower, we expect the effect of CEO approval on the turnover–performance relationship to be stronger. We indeed find that the effect is stronger among firms with high employee protection as measured by the absence of a right-to-work provision in the headquarter state (e.g., John, Knyazeva, and Knyazeva, 2015) and those with high asset intangibility (e.g., Hart and Moore, 1994).

Second, employees' reviews may contain valuable information about the CEO's managerial quality not reflected in current accounting performance. If so, the effect of CEO approval on turnover–performance sensitivity should be more pronounced among firms where the marginal value of additional information is at its greatest, that is, among firms with high degrees of insider–outsider information asymmetry. In contrast with this information hypothesis, we find that the effect of CEO approval on turnover–performance sensitivity is almost exclusively observed among firms with low degrees of information asymmetry as measured by analyst forecast error or dispersion. In other words, the board seems to listen to the prevailing employee opinions on the CEO in firms where the need for stakeholder relationship management, *not* additional informational signal, is at its greatest. Finally, a high level of employee approval may indicate agency problems stemming from a manager–worker alliance. However, we find evidence to the contrary; the effect of CEO approval on turnover–performance sensitivity is markedly stronger among firms with low CEO power—as indicated by the CEO pay slice measure of Bebchuk, Cremers, and Peyer (2011)—and high levels of board independence, suggesting that the board does not consider employee opinions due to managerial entrenchment.

We then examine whether a high level of employees' CEO approval is consistent with superior subsequent performance. This is important in determining whether keeping temporarily underperforming managers with high levels of employee approval is indeed in the shareholders' interest. Interestingly, we find strong evidence that a high level of employee approval translates into superior performance, both in terms of

abnormal stock and accounting performance. Specifically, the return-on-assets (ROA) change regressions and Fama-MacBeth characteristic regressions as in Brennan, Chordia, and Subrahmanyam (1998) reveal that a high level of CEO approval is consistent with superior subsequent performance. We further uncover evidence of poor performance having a feedback effect on employee sentiment; among firms with high employee approval, poor performance brings about a subsequent deterioration in employee CEO approval over the next year.

Further evidence suggests that, apart from superior performance, high employee approval may also be associated with risk management benefits, in line with the findings in the recent literature on CSR and firm risk (e.g., Godfrey, Merrill, and Hansen, 2009; Lins, Servaes, and Tamayo, 2017; Albuquerque, Koskinen, and Zhang, 2019; Ding, Levine, Lin, and Xie, 2021). We find that a high level of employee CEO approval is associated with lower implied and firm-specific idiosyncratic volatility, in line with Kim, Lee, and Kang (2021). If we think of CEOs with high employee approval as more adept at managing internal stakeholder relations, our results suggest that the market views firms managed by these CEOs to be less likely to experience a negative idiosyncratic shock. Furthermore, we find that a high level of CEO approval score is associated with a lower likelihood of asset impairment or earnings restatement, echoing Kim, Park, and Wier (2012). Our evidence of performance and risk management benefits is consistent with Chemmanur, Rajaiya, and Sheng (2020), who find that firms with higher Glassdoor ratings enjoy lower equity financing costs at around seasoned equity offering (SEO) announcements. The overall evidence suggests that, from shareholders' perspective, listening to the opinions of the internal stakeholders pays, a finding that echoes Edmans (2011), Deng, Kang, and Low (2013), and Krüger (2015), among others.

This study's findings contribute to the existing literature in several ways. First, our study can be added to the rich strand of literature on CEO turnover, particularly the studies that suggest various boards and other governance-related factors as important determinants of CEO turnover (e.g., Yermack, 1996; Core, Holthausen, and Larcker, 1999; Goyal and Park, 2002; McNeil, Niehaus, and Powers, 2004; Fich and Shivdasani, 2006; Chhaochharia and Grinstein, 2007; Adams and Ferreira, 2009; Hwang and Kim, 2009;

Fracassi and Tate, 2012; Masulis, Wang, and Xie, 2012; Coles, Daniel, and Naveen, 2014; Guo and Masulis, 2015). Our contribution to this strand of the literature lies in revealing a strong association between the prevailing employee sentiments concerning the CEO and the latter's likelihood of turnover following poor performance. Put differently, how internal stakeholders view the CEO may be relevant in the board's decision over whether to fire a struggling CEO following poor performance.[4]

Second, our study also contributes to the literature on the role of stakeholders in value creation, namely, whether incorporating stakeholder opinions within a firm's decision-making process is in the interests of its shareholders. In so doing, we contribute to the ongoing debate on stakeholder capitalism whereby a board serves the interest of all stakeholders.[5] A strand of the literature views labor as a manager's natural ally, who enables managerial entrenchment in return for pay and protection (Pagano and Volpin, 2005; Atanassov and Kim, 2009; Kim and Ouimet, 2014; John, Knyazeva, and Knyazeva, 2015). When viewed this way, a high level of employee approval could be symptomatic of managers "doing good with other people's money," to the detriment of the firm's shareholders (Cheng, Hong, and Shue, 2013). Our contribution is in revealing that favorable employee perceptions of the CEO are associated with a superior subsequent firm performance and a lower likelihood of damaging corporate events, suggesting that the value implications of employee CEO approval run contrary to the predictions of manager–worker alliance. Instead, positive value implications and evidence consistent with risk management benefits of high employee approval that we uncover suggest that listening to the voices of internal stakeholders may actually also be in the interests of the shareholders. In this way, we extend the discussion on stakeholder governance and "doing well by doing good" (Edmans, 2011;

[4] By revealing that high employee CEO approval significantly lowers the turnover–performance sensitivity, we also contribute to the broader literature on Bayesian learning of CEO ability that considers the recent firm performance as a noisy signal (e.g., Hermalin and Weisbach, 1998; Holmstrom, 1999; Taylor, 2013; Pan, Wang, and Weisbach, 2015). In untabulated analysis, we confirm that our main results remain unchanged when we additionally control for the managerial ability measures of Demerjian, Lev, and McVay (2012) and Custódio, Ferreira, and Matos (2013).

[5] The recent debate on stakeholder capitalism between Lucian Bebchuk and Alex Edmans, for example, aptly highlights the cases for and against such stakeholder capitalism. Bebchuk and Tallarita (2020) rigorously discuss the negative effects of the stakeholder capitalism, whereas Edmans (2011), Edmans, Li, and Zhang (2020) advocate the critical role of satisfied stakeholders in enhancing firm value. For more information, refer to the following YouTube discussion (https://www.youtube.com/watch?v=3tMYfLLzoi4).

Deng, Kang, and Low, 2013; Dimson, Karakaş, and Li, 2015; Ferrell, Liang, and Renneboog, 2016; Lins, Servaes, and Tamayo, 2017; Ding, Levine, Lin, and Xie, 2021).

Finally, we extend the literature on stock price implications of stakeholder-related information (e.g., Chen, De, Hu, and Hwang, 2014; Jame, Johnston, Markov, and Wolfe, 2016). For example, Huang (2018) reveals that Amazon consumer reviews contain valuable information to which investors underreact, and Edmans (2011) find similar investor underreaction to stocks included in the Fortune magazine's 100 Best Companies to Work For list. As for the studies using the Glassdoor database, Green, Huang, Wen, and Zhou (2019) document that a recent change in overall satisfaction ratings predicts the firm's future stock returns, whereas Welch and Yoon (2021) find that the favorable future stock performance is more pronounced among firms with high Glassdoor *and* CSR scores. A similarly positive future operating performance implication of Glassdoor ratings, particularly concerning the firm outlook score, is documented by Huang, Li, and Markov (2020). Moreover, a recent study by Chemmanur, Rajaiya, and Sheng (2020) find that firms with high Glassdoor ratings experience high announcement returns and better long-term performance around SEOs, and that firms respond by issuing more equity relative to debt. Our contribution to the literature lies in revealing that, apart from informational contents concerning firm value, employee perceptions of the CEO are also essential for the firm's corporate governance, as exemplified in the board's turnover decisions.

2. Data and Variable Construction

In this section, we first outline how we measure CEO approval using Glassdoor reviews. We then proceed to discuss how we classify CEO turnovers and construct other variables of interest.

2.1. Glassdoor review scores

Prior works on a firm's employee relations use the MSCI KLD, ASSET4, or the Fortune magazine's annual 100 Best Companies to Work For in America list (Bae, Kang and Wang, 2011; Edmans, 2011; Hong and Kostovetsky, 2012; Deng, Kang and Low, 2013; Di Giuli and Kostovetsky, 2014; Kang and Kim, 2020).

However, as these scores do not directly measure the employees' perceptions of their CEOs, we take a different approach by using crowd-sourced employer reviews on Glassdoor voluntarily posted by the employee themselves.

Glassdoor is a social media platform that allows employees to post anonymous reviews about their firms, both quantitatively and qualitatively. Its specifics are as follows. Employees first assess their overall job satisfaction and their satisfaction concerning the following sub-categories on 5-point Likert scales: (1) work–life balance, (2) culture and values (from 2012), (3) career opportunities, (4) compensation and benefits, and (5) senior management. Employees then enter a binary response about whether they would recommend the firm to their friends. Finally, employee perceptions of firm outlook (from 2012), and most importantly, their opinions on their CEOs are measured by two more 3-point Likert scale assessments (i.e., positive, neutral, or negative). We assign "approve" with a score of +1, "no opinion" with 0, and "disapprove" with −1, respectively. In addition to these Likert scale ratings, qualitative assessments of the pros and cons of working for their firms and any specific advice for management must also be offered. They may remain anonymous, but they must indicate whether they are current or former employees and, if willing, describe their job title, work location, salary, full/part-time status, and length of tenure. To begin with, we collect more than 1.5 million reviews of all public firms in the Execucomp database between 2008 and 2018. However, to enable a direct comparison between all Glassdoor categories, we limit the sample period of our main analysis to 2012 and 2018 and utilize over 1.04 million reviews during the period. We average the review scores for each firm-fiscal-year observation. However, to enable meaningful aggregation of individual employee's sentiment concerning the CEO, we require a minimum of 10 employee reviews when averaging.

This CEO approval rating, in particular, has been the subject of much media attention recently, with the Wall Street Journal, Forbes, Fortune, and Business Insider all providing in-depth coverage of CEOs with

the highest approval ratings on Glassdoor,[6] with a Wall Street Journal article reporting that "chief executives are increasingly perusing their online reviews to determine what employees think of them (July 11, 2017)."[7] Panel A of Figure 1 illustrates an example for Costco, whose CEO, Craig Jelinek, was chosen as the most loved CEO by Forbes magazine in 2017. Panel B of Figure 1 further illustrates the firm-level summary of employees' written qualitative reviews about the pros and cons of the firm as presented on Glassdoor.

FIGURE 1 HERE

Apart from its widest coverage, Glassdoor have additional aspects that instill greater confidence in the data. Each reviewer can leave at most one review per firm, minimizing the possibility of systematic distortion by a handful of individuals. Reviews are also screened by its web editors, with defamatory attacks or meaningless repetition regularly rejected by in-house staff. Moreover, reviewers are encouraged to complete both the pros and cons sections of the qualitative assessment to provide a balanced picture to the best of their ability. Nevertheless, as the site has gained popularity, some circumstantial evidence shows that firms engage in a PR campaign to artificially boost their Glassdoor ratings in recent years, particularly around the time of Glassdoor's annual ranking calculation.[8] Even so, we believe that our sample, which ends in May 2018, is relatively free of these concerns that emerged only recently.

In the baseline analysis, we focus on the CEO approval score. However, we further compare how our baseline results differ when we consider other Glassdoor categories including firm outlook, and overall and sub-categories of employee satisfaction scores, the former of which, in particular, is shown to hold strong value implications in previous studies using the Glassdoor database (Green, Huang, Wen, and Zhou, 2019; Huang, Li, and Markov, 2020). However, we confirm that all main results concerning CEO approval remain qualitatively intact when we extend the beginning of our sample period to Glassdoor's inception in 2008.

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[6] For more detail, see "The 26 most popular CEOs in America, according to Glassdoor" (Business Insider, June 21, 2017) or "Employees Give These CEOs Top Reviews" (Wall Street Journal, June 8, 2016).

[7] For more information, see "Who's Reading Employees' Online Reviews? Their CEOs" (Wall Street Journal, July 11, 2017).

[8] For more information, see "How companies secretly boost their Glassdoor ratings" (Wall Street Journal, Jan 22, 2019).

2.2. CEO turnover classification

We classify all CEO turnovers of our Execucomp sample firms during our sample period using Factiva media search engine and S&P Capital IQ Key Developments. Using this, we classify whether the CEO departure is forced or voluntary in the identical manner to Fee, Hadlock, and Pierce (2013). We initially classify CEO turnover as "forced" if the following conditions are met: (1) departure is not announced at least 6 months in advance; (2) reasons for departure are not related to health, death, or accepting another CEO position elsewhere;[9] (3) the departing CEO is under the age of 60; and (4) the departing CEO does not serve on the firm's board of directors subsequently. We further corroborate media announcements to check whether the turnover events classified as forced and reclassify it as "voluntary" if media reports consistently confirm that the CEO departure is unrelated to firm activities. Finally, following Jenter and Kanaan (2015), we exclude CEO step-downs associated with mergers and spin-offs. We focus on CEOs with tenures longer than three years as we use a three-year performance measure as in Jenter and Lewellen (2021).

For our baseline sample period between 2012 and 2018, we identify 346 CEO turnovers, which account for 7.9% of our firm-year observations. Out of these 346 turnovers, 170 (49%) are classified as forced according to the criteria above. Table 1 reports the breakdown of our turnover and forced turnovers by Fama-French 12-industry and year of departure announcement. Following the definition of Execucomp, we assign a turnover event to fiscal year *t* if it occurs during the second half of year *t* or during the first half of year *t* + 1 (e.g., Lee, Lee, and Nagarajan, 2014).

TABLE 1 HERE

2.3. Firm performance measure and other variables

Following Jenter and Lewellen (2021), we use the industry-adjusted scaled return as the main measure

[9] Campbell, Gallmeyer, Johnson, Rutherford, and Stanley (2012) raise a possibility that a CEO turnover classified as voluntary due to immediate re-hiring by another firm may in fact be forced, since the hiring firm may not know the details or may not care whether the person is replaced either voluntarily or involuntarily. We, however, classify it as voluntary departure, following Fee, Hadlock, and Pierce (2013).

of firm performance. Specifically, we use the mean industry-adjusted monthly stock returns, with the industry defined as the equal-weighted return of the corresponding Fama-French 49-industry, scaled by their standard deviation. As in Jenter and Lewellen (2021), we focus on the firm's scaled return over a rolling three-year period between fiscal years [t – 2: t], with the standard deviation also measured over the identical horizon. This normalization procedure makes the stock returns more comparable for firms with different levels of industry-adjusted volatility.[10]

Firm-level controls consist of firm size, R&D ratio, R&D missing dummy, cash ratio, market leverage, and Tobin's Q, with each variable constructed using CRSP/Compustat. Controls are similar to those employed in Hwang and Kim (2009) and Coles, Daniel, and Naveen (2014). We complement these controls with CEO- and board-level controls using BoardEx and Execucomp, including CEO equity holdings, CEO pay slice, CEO-chair duality, CEO age, CEO tenure, board size, board independence, busy board, and the fraction of old directors, following previous studies on the determinants of CEO turnover (e.g., Yermack, 1996; Fich and Shivdasani, 2006; Bebchuk, Cremers, and Peyer, 2011).[11] We provide a detailed description on how each variable is constructed in the Appendix.

2.4. Summary statistics

We present the summary statistics of main variables and their correlation with CEO approval and the forced CEO turnover dummy in Table 2. Summary statistics of CEO and board characteristics in Table 2 are broadly consistent with those in previous studies such as Coles, Daniel, and Naveen (2014) and Lee, Lee, and Nagarajan (2014), except for a significantly lower proportion of CEO duality, coming from the drive toward the separation of CEO and chair in many listed firms (Larcker and Tayan, 2016). Moreover, given that our sample period spans the post-Sarbanes-Oxley era, independent directors comprise the majority of

[10] We confirm that qualitative results remain broadly intact when we use raw industry-adjusted returns instead and alternative horizons for computing the scaled returns (e.g., 4 years).

[11] In untabulated analysis, we control for the E-index of Bebchuk, Cohen, and Ferrell (2009) as an alternative measure of internal governance. Our main results are consistent. However, due to a substantial loss of sample firms not covered by the ISS database, we present the regressions with CEO pay slice in our main result.

virtually all boards.

TABLE 2 HERE

Furthermore, we find a strong positive correlation between employees' CEO approval score and three-year scaled return. The CEO approval score is also higher among firms with large size, high Tobin's Q, high cash holdings, and low leverage, consistent with Bae, Kang, and Wang (2011). Interestingly, as measured by high CEO pay slice, powerful CEOs are negatively associated with employee CEO approval, which *prima facie* suggests that employee CEO approval may not be a mere proxy for managerial entrenchment. We also find that the CEO approval score exhibits a significantly negative correlation with the forced turnover dummy. The same is true of the three-year scaled return, although the relationship is somewhat weaker when we use the three-year ROA as the performance measure.[12] Other board-level controls broadly bear the expected signs: the forced turnover dummy is significantly negatively correlated with the CEO-chair duality dummy and the fraction of old directors, but positively correlated with the level of board independence. Above all, the strong negative statistical association between the CEO approval scores and the forced CEO turnover dummy calls for further investigation into the relationship.

3. Employee Approval and CEO Turnover

3.1. Difference-in-mean tests

We first present subsample difference results of how firm performance and employee CEO approval relate to the likelihood of forced CEO turnover. To this end, for each Fama-French 49-industry and fiscal year pair, we sort our sample firms into high and low subsamples on the basis of the latest three-year scaled return, using the sample median as the cut-off. We similarly form high and low subsamples for each industry-year pair using the CEO approval score. We then calculate the probability of a forced CEO turnover occurring

[12] Based on this evidence, and on the basis of Jenter and Lewellen (2021), we focus on scaled return as the main measure of firm performance for the remainder of this paper.

during the second half of the fiscal year or the first half of the subsequent fiscal year.[13] This enables us to examine *prima facie* evidence of how a firm's recent stock performance and employee CEO approval are associated with the likelihood of forced CEO turnover while controlling for across-industry or across-year heterogeneity in, e.g., employee sentiment. After constructing the two-by-two subsample matrix to examine the likelihood of forced CEO turnover, we further report the difference-in-mean and the difference-in-difference tests. The results are presented in Table 3.

TABLE 3 HERE

Table 3 reports the two-by-two sorting on firm performance and CEO approval. We find that CEOs with high recent stock performance are less likely to experience forced turnover, but crucially, the statistical significance between the high-low performance subsamples is only significant among CEOs with low employee approval. Whereas the difference amounts to 3.2% and statistically significant at the 1% level among the low approval subsample, the difference narrows to 1.0% without statistical significance for the high approval subsample. We observe a similar pattern when we compare CEOs with high vs. low employee approval; the difference is not statistically significant when the CEO's recent stock performance has been favorable, the difference widens to 3.1% with statistical significance at the 1% level for CEOs with poor stock performance. As a result, the difference-in-difference result also turns out to be statistically significant at the 5% level. Table 3 reveals that CEOs are more likely to face forced turnover when both stock performance *and* the prevailing employee sentiment are unfavorable. Interestingly, CEOs with high stock performance but low employee approval versus those with low stock performance but high employee approval have almost equal chance of being fired against their will.

3.2. Are CEOs with high employee approval less likely to be forced out?

We now extend the two-by-two subsample results in Section 3.1 in a full regression setting. To this

[13] As in Jenter and Lewellen (2021), we focus on firm performance (and CEO approval score) all the way up to and including the fiscal year associated with forced CEO turnover.

end, we estimate a Cox (1972) proportional hazard model, which estimates the probability that the CEO is forced out during the next year.[14] For the purpose of estimation, we classify voluntary turnovers and CEOs surviving until the end of the sample as right-censored observations, following Jenter and Kanaan (2015). In estimating forced turnovers for fiscal year t, i.e., those occurring between the second half of fiscal year t and the first half of $t + 1$, we use the scale return between $[t - 2: t]$ as the main measure of firm performance, in the identical manner to Jenter and Lewellen (2021). We then consider the CEO approval score for fiscal year t or $t - 1$. Table 4 presents our results. In columns (1) and (3), we include the firm performance and CEO approval score separately to estimate the standalone effect of CEO approval score on forced CEO turnover. Meanwhile, we estimate its effect on the turnover–performance sensitivity by interacting the two variables in columns (2) and (4). In columns (1) and (2), we use the fiscal year t CEO approval score. In order to check whether the results are sensitive to the timing of score aggregation, we re-run the same set of Cox proportional hazard regressions using the fiscal year $t - 1$ score in columns (3) and (4). In all specifications, we include the Fama-French 49-industry and year fixed effects.

TABLE 4 HERE

In column (1) of Table 4, we find that the CEO approval score has a significantly negative association with the likelihood of forced CEO turnover, with the t-statistic exceeding 4 in absolute magnitude. In terms of economic magnitude, a one-standard-deviation increase in the CEO approval score of 0.306 is consistent with the hazard ratio decreasing by a factor of $\exp(-1.207 \times 0.306 = -0.369) = 0.691$, i.e., a 30.9% decrease. We find qualitatively similar patterns using the lagged CEO approval score in column (3). Unsurprisingly, three-year scaled return is also strongly negatively associated with the likelihood of forced turnover. In addition to the two variables, we find that older CEOs and those with larger equity holdings within the firm are less likely forced out, the latter of which may either indicate a close alignment of the CEO's interests with

[14] This survival analysis is arguably better at dealing with the fact that we do not know what happens to the CEO after the sample period compared to the "point-in-time" logit or probit estimation. We thank the anonymous referee for the suggestion. We confirm that the results are robust to a logit specification with CEO tenure as an additional control (as in Jenter and Kanaan, 2015).

those of the shareholders' (e.g., Morck, Shleifer, and Vishny, 1988), or an indication of strong CEO entrenchment, as in the case of founder CEOs with high equity ownership (e.g., Himmelberg, Hubbard, and Palia, 1999). Moreover, a large CEO pay slice, CEO-chair duality, and a large fraction of old directors, all identified in previous studies to inhibit effective monitoring (e.g., Core, Holthausen, and Larcker, 1999; Bebchuk, Cremers, and Peyer, 2011), are also associated with a lower likelihood of forced CEO turnover.

In column (2), we examine whether a high level of employee approval is associated with a decrease in the turnover–performance sensitivity by interacting the CEO approval score with three-year scaled return. We find that the interaction term is positive with statistical significance at the 5% level. Compared to the CEO approval at the first quartile, i.e., 0, a CEO with the approval score at the third quartile of 0.417 finds that the sensitivity parameter declines from -2.600 to -2.600 + (0.417 × 3.433) = -1.168. Thus, in addition to their standalone effect, it appears that a high level of CEO approval, as evaluated by the employees, substantially reduces the probability of a forced CEO turnover even when the three-year scaled return has been unfavorable. We obtain a similar result in column (4) when we consider the lagged CEO approval score's impact on the turnover–performance sensitivity. Put differently, the evidence in Table 4 strongly indicates that popular CEOs are indeed less likely to be forced out following poor performance.

TABLE 5 HERE

In Table 5, we then examine whether other Glassdoor scores have a similarly strong impact on the likelihood of forced CEO turnover. In contrast to the CEO approval score, we find that the statistical significance of other Glassdoor scores including firm outlook and overall satisfaction is much more sensitive to the timing of the review score aggregation. In fact, apart from the CEO approval score, no other score turns out to exhibit statistical significance at the 5% level when we measure them with one-year lag, which highlights the strong association between the employees' *CEO-specific* sentiment and the board's turnover decision. A speculation is that other Glassdoor scores like firm outlook and employee satisfactions may be driven by some time-specific factors other than CEOs themselves. Table 5 further emphasizes the importance

of the CEO approval score, which has not been the main measure of interest in previous studies using the Glassdoor database (e.g., Green, Huang, Wen, and Zhou, 2019; Huang, Li, and Markov, 2020).

3.3. Does employee approval matter more in certain firms?

In Section 3.2, we established that a high level of employee approval is consistent with a significantly lower likelihood of forced CEO turnover following poor performance. However, as discussed earlier, the board may choose to listen to the employees' voices in turnover decisions for (i) the need for stakeholder management, (ii) employees' information about the CEO's managerial qualities, and (iii) agency problems associated with a manager–worker alliance. In this subsection, we engage in subsample analyses to weigh the relative likelihood of these hypotheses.

First, the board may find it in its interest to listen to the employees' opinions when implicit contracts with employees are particularly important to a firm's operations. For example, in firms located in states with strong labor rights, employees hold more bargaining power, making it more valuable to retain CEOs that can better manage employee relations. To this end, we follow John, Knyazeva, and Knyazeva (2015) and divide our firms on the basis of whether their headquarter states have right-to-work statutes or not. Employees in states with right-to-work statutes have weaker collective bargaining power because union membership or payment of union fees cannot be made as a condition of employment. Furthermore, in firms where physical assets account for a relatively low proportion of the total assets, i.e., in firms with high asset intangibility, the relative importance of employees as the firm's input is likely to be heightened, because operating this type of intangible asset relies on employees' on-the-job skills (e.g., Spender and Grant, 1996). To this end, we form subsamples on the basis of (i) the level of employee protection, as measured by the presence or absence of a right-to-work statute in the firm's headquarter state, and (ii) the level of asset intangibility, using the year-by-year sample median as the cut-off. We then re-estimate the Cox proportional hazard turnover–performance sensitivity regression in column (2) of Table 4. Table 6 Panel A presents our results.

TABLE 6 HERE

Columns (1) and (2) Table 6 Panel A presents the results separately for firms in high vs. low employee protection states. We find that the interaction terms between the CEO approval score and three-year scaled return are significant at the 5% level only among firms located in high employee protection states. In contrast, both the standalone CEO approval score and the interaction terms mostly lose statistical significance among firms located in low employee protection states.[15] Similarly, in column (4), we find that the CEO approval score has a statistically significant impact on the turnover–performance sensitivity only among firms with high asset intangibility. The evidence suggests that the board is more receptive to employee opinions in turnover decisions when internal stakeholder relations form an important part of the firm's operations, which also relates to the rich literature on human capital's inalienability beginning with Hart and Moore (1994).

Second, the board may also value information about the CEO contained in employee assessments of the CEO on Glassdoor. If so, the relationship between the CEO approval score and the turnover–performance sensitivity would be more heightened among firms where the marginal value of additional signal about the CEO is at its greatest. Specifically, in firms with high levels of board-CEO information asymmetry (Raheja, 2005; Adams and Ferreira, 2007; Harris and Raviv, 2008; Duchin, Matsusaka, and Ozbas, 2010), the interaction term between the CEO approval score and firm performance would be more pronounced. To this end, we form subsamples on the basis of analyst forecast error or analyst forecast dispersion, both computed in the identical manner to Duchin, Matsusaka, and Ozbas (2010), using the year-by-year sample median as the cut-off, and re-estimate column (2) of Table 4. Table 6 Panel B presents our results.

In both instances in Panel B, we find that the interaction term between CEO approval and three-year scaled return is only significant among firms with low levels of information asymmetry as measured by analyst forecast error or dispersion, contrary to the predictions of the information hypothesis. Of course, employee reviews may contain value-relevant information about the CEO and/or the firm, which we will examine later.

[15] We find similar patterns, albeit with weaker statistical significance, when we use the state-by-state variations in minimum wage as measures of employee protection instead.

However, Table 6 suggests that the board is more responsive to the prevailing employee sentiment regarding the CEO, not among firms where the need for information is greater but among firms where the need for internal stakeholder management is vital.

Third, the board may be reluctant to fire CEOs after bad performance because employee approval aggravates internal agency problems and managerial entrenchment through a manager–worker alliance (e.g., Pagano and Volpin, 2005). If so, we expect the relation between the CEO approval score and the turnover–performance sensitivity to be greater among firms suspected of internal agency issues. To examine this possibility, we form subsamples on the basis of CEO pay slice or board independence, once again using the year-by-year sample median as the cut-off. Table 6 Panel C presents our results.

Contrary to the predictions of the internal agency hypothesis, we find that the interaction term between the CEO approval score and three-year scaled return is markedly stronger among firms with low levels of CEO power as proxied by low CEO pay slice or high board independence. The evidence suggests that the relationship between the prevailing employee CEO approval and turnover–performance sensitivity is not a manifestation of internal agency problem, as argued in previous studies on the manager–worker alliance (e.g., Atanassov and Kim, 2009; Cronqvist, Heyman, Nilsson, Svaleryd, and Vlachos, 2009). Taken together, the evidence in Table 6 supports the hypothesis that the board cares more about employee perceptions of the CEO when the need for maintaining good internal stakeholder relations is important. We thus proceed to examine whether listening to the voices of internal stakeholders in this manner pays off from the shareholder's interest, i.e., through "doing well by doing good," or is to their detriment.

4. Shareholder Implications of Employee Approval

4.1. Does employee approval predict future firm performance?

As revealed in Section 3, employee CEO approval significantly reduces the likelihood of a CEO being forced out following poor performance. If this CEO, on average, achieves superior subsequent performance,

possibly through superior management of the firm's implicit contracts with internal stakeholders, the board's decision is in the shareholder interest. However, the board's reluctance to fire a poorly performing CEO due to her popularity with employees could be to the detriment of shareholder interests if the CEO fails to deliver future performance, or even worse, continuously underperform. In this section, we thus explore shareholder implications of the Glassdoor scores.

For operating performance, we examine the relationship between the change in 3-year ROA between year t and $t + 1$ and the CEO approval score in fiscal year t, after controlling for the latest 3-year scaled return and 3-year ROA as the performance measure, along with the full set of firm controls as in earlier tables. We employ industry-by-year fixed effect, which allows us to examine whether the CEO approval score has predictive power for future operating performance within a given industry in a given year. Out of concern that forced turnovers may alter the relationship, we also separately focus on a subset of firms that did not experience a forced turnover.

In addition to the operating performance, we also examine whether the CEO approval score has predictive power for future stock performance. To this end, we engage in Fama-MacBeth (1973) characteristic regression as in Edmans (2011), using the identical set of controls as in Brennan, Chordia, and Subrahmanyam (1998). Specifically, to predict a stock's monthly return for month t, we control for monthly returns between [$t - 3$: $t - 2$], [$t - 6$: $t - 4$], [$t - 12$: $t - 7$], and size, book-to-market, dividend yield, log dollar trading volume, and price level. In this monthly predictive regression, we use the latest rolling 12-month CEO approval score up to $t - 1$, with a minimum of 10 reviews during the window. We consider both the raw returns and industry-adjusted returns, with the industry return defined as the equal-weighted return on the firm's Fama-French 49-industry. Table 7 presents the operating and stock performance regression results.

TABLE 7 HERE

In Table 7 Panel A, we present the results for the operating performance change. We find that, even after controlling for the current level of stock and operating performance as proxied by the three-year scaled

return and ROA, a higher level of employee approval is consistent with an increase in operating performance relative to the firm's industry peers. In terms of economic magnitude, a one-standard-deviation increase in CEO approval score by 0.306 is consistent with an increase in the subsequent three-year ROA by 0.12%. The result remains largely unchanged when we restrict our attention to the subsample of firms without forced turnover events, as shown in column (2). Our results are in line with Huang, Li, and Markov (2020), who find positive predictive power of Glassdoor outlook scores in predicting future operating performance.

Table 7 Panel B reports the Fama-MacBeth characteristic regression results. Whether we use raw or industry-adjusted returns, results reveal that higher CEO approval score positively predicts the next-month stock return. The results are broadly comparable to those documented by Green, Huang, Wen, and Zhou (2019), except that they do not consider CEO approval in their portfolio analysis. Put together, Table 7 reveals that favorable employee reviews about the CEO are significantly positively associated with subsequent operating and stock performance. Our findings follow previous studies that find crowd-sourced reviews to hold substantial value-relevant information (Chen, De, Hu, and Hwang, 2014; Jame, Johnston, Markov, and Wolfe, 2016; Huang, 2018) and suggests that listening to the voices of employees may actually be in the interests of the firm's shareholders. The evidence further indicates that the board's reluctance to fire CEOs popular among employees after poor performance is not a manifestation of agency problems, and that the prevailing employee sentiment *does* translate into subsequent firm performance.[16]

4.2. Does employee approval respond to poor performance?

We have thus far demonstrated that employee approval holds value-relevant information about the firm's subsequent stock or operating performance. Then, whether the prevailing level of employee sentiment responds to the firm's performance metric is worth examining. Put differently, we ask if employees are

[16] As further corroborative evidence of employee approval being in alignment with shareholder interests, we find untabulated analysis that higher CEO approval is significantly positively associated with the likelihood of a dividend increase announcement during the subsequent fiscal year.

currently approving of the CEO despite poor performance, whether they will continue to exhibit approval in the future. To answer this, we employ a change-in-change specification. Specifically, we regress the change in CEO approval score between [$t : t + 1$] on the change in three-year scaled return [$t - 1 : t$] and the change in the CEO approval score between [$t - 1 : t$].[17] If the employee sentiment exhibits a timely feedback response to the firm's performance change, we expect the coefficient on the difference in the three-year scaled return to be significantly positive, which in turn indicates that employees are sensitive to and revise their opinion of the CEO on the basis of firm performance. As before, we employ industry-by-year fixed effect to compare the employee responses relative to industry peers in a given year. The results are presented in Table 8.

TABLE 8 HERE

Column (1) of Table 8 reveal that CEO approval score declines significantly over the next year following a fall in the firm's three-year scaled return. In terms of economic magnitude, the estimated coefficient of 0.167 implies that a one-standard-deviation fall in three-year scaled return by 0.160, when multiplied, decreases CEO approval score by 0.027, with the *t*-statistic exceeding 5. We exclude the firm-year observations with forced turnovers in column (2) and find consistent results. Therefore, the evidence in Table 8 suggests that employees are not "blindingly" approving of the CEO, and that they revise their opinion of the CEO downward, following poor stock performance. This further indicates that the prevailing employee sentiment concerning the CEO is more than a mere proxy of internal agency problems.

4.3. Does employee approval lower the market perception of firm-specific risk?

The evidence in Section 4 so far suggests that the CEO approval score is positively associated with a firm's subsequent performance. In addition to the return profile, we explore the relationship between the CEO approval score and firm-specific risk profile. Recent studies on CSR suggest that firms with a thriving

[17] Our results remain qualitatively robust to controlling for the level of CEO approval score at *t* instead of or in addition to its change between [$t - 1 : t$]. Our results remain unchanged regardless of whether we use the change or the level of all other firm controls.

stakeholder relationship build up strong social capital that becomes valuable during times of crisis. Lins, Servaes, and Tamayo (2017), for example, find that high-CSR firms fared well compared to their peers during the 2008–2009 financial crisis, and more recently, Albuquerque, Koskinen, Yang, and Zhang (2020) and Ding, Levine, Lin, and Xie (2021) both document a similar result among high-CSR firms during the COVID-19 stock price crash of 2020. In a similar vein, we expect CEOs on favorable terms with employees to have better access to such social capital, which, in turn, would lower the market perception of firm-specific risk.

To this end, we examine two measures of firm volatility, namely implied and idiosyncratic volatilities (Ang, Hodrick, Xing, and Zhang, 2006). Implied volatility is computed using the average implied value of 30-day at-the-money call and put options on a firm's common stock, computed at each month-end and averaged over a fiscal year. Idiosyncratic volatility is the standard deviation of the residual term of daily Fama-French three-factor regressions during the fiscal year. Under the predictions of the earlier hypothesis, a higher level of employee CEO approval should be consistent with a lower idiosyncratic risk, and we thus expect the Glassdoor score to bear a negative sign in these regressions. In addition to the earlier controls, we also control for the Fama-French three-factor loadings, volatility of profitability, which refers to the standard deviation of the AR(1) residual of return on equity (ROE) as in Pástor and Veronesi (2003), ROE, and dividend-paying dummy, following Pan, Wang, and Weisbach (2015). The results are presented in Table 9.

TABLE 9 HERE

Column (1) of Table 9 present the results for implied volatility. We find that a high level of CEO approval score is consistent with a significantly lower implied volatility over the next year, with statistical significance at the 5% level. We find a similar pattern when we consider idiosyncratic volatility instead, albeit with reduced statistical significance. The evidence suggests that firms with high levels of employee CEO approval are associated with a significantly lower degree of firm-specific variation in stock returns, consistent with the notion of stakeholder relationship management as an insurance mechanism highlighted in recent studies. Therefore, firms with high Glassdoor ratings unsurprisingly enjoy lower cost of equity around SEOs,

as documented by Chemmanur, Rajaiya, and Sheng (2020).

In addition to the analysis of volatility measures, we further document evidence consistent with the social capital explanation using S&P Capital IQ Key Developments. We identify all negative corporate announcements relating to earnings restatement or impairments and write-offs, and then we estimate linear probability models predicting the likelihood of such a negative corporate event occurring during the subsequent fiscal year, using the CEO approval score and the baseline firm controls as explanatory variables. The last column of Table 9 reveals that, in line with our expectations, a higher level of CEO approval score is significantly negatively associated with the likelihood of an earnings statement, impairment, or write-off. To summarize, the evidence in Table 9 suggests that listening to the employees' voices has a clear benefit not only in terms of subsequent firm performance but also from a risk management standpoint.

5. Conclusion

Using a novel social media dataset containing over one million employer reviews on Glassdoor, we examine how the internal stakeholders' perceptions of their CEOs affect the board's CEO turnover decision. We find that CEOs with high levels of employee approval are significantly less likely to be replaced, despite poor stock performance, as indicated by a substantially lower turnover–performance sensitivity. Moreover, the relationship between employee CEO approval and turnover–performance sensitivity is more prominent among firms operating in high employee protection and asset intangibility environments (i.e., in firms where employees form an important part of the operation), and the boards are thus likely to care more about the opinions of internal stakeholders. In contrast, alternative hypotheses based on information or internal agency issues appear less plausible; the relationship between employee CEO approval and turnover–performance sensitivity is less prominent among firms with high information asymmetry and CEO power.

Our results further indicate that listening to the voices of internal stakeholders has benefits in terms of both the firm's subsequent financial performance and firm-specific risk. Even after controlling for the

prevailing firm performance, we find that high employee approval is positively associated with future stock and operating performance compared to the firm's industry peers. Moreover, a close feedback between employee approval and firm performance seems to exist, with a decline in performance accompanied by a subsequent downward revision of employee CEO approval ratings. Firms with high employee approval, in addition to performance, appear to benefit from lower firm-specific volatility and higher stock return synchronicity, and a lower likelihood of a negative corporate event like earnings restatement or impairments. The overall evidence thus strongly suggests that listening to employee opinions is very much in the interests of the firm's shareholders. Many previous studies have viewed labor as an impediment to good governance by furthering managerial entrenchment through a manager–worker alliance. By contrast, we find that employee opinions may closely align with shareholder interests. With the prevailing employee sentiment readily available for public viewing in social media, our result highlights that the shareholders may find it in their interests to use this information in shaping a firm's internal governance.

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Appendix. Variable definitions

In this appendix, we provide a detailed explanation on each of the variables used in our analysis. We denote the data source in the parentheses.

A.1. Employee sentiment

CEO approval score (Glassdoor): Average CEO approval score of employee reviews posted on Glassdoor during the fiscal year. For scoring purposes, "approve" is assigned +1, "no opinion" 0, and "disapprove" -1. We require a minimum of 10 reviews for each firm-year observation.

A.2. Performance measure

3-year scaled return (CRSP): Rolling three-year average of monthly industry-adjusted return, divided by its standard deviation during the same period, including and ending in fiscal year-end date. For industry return, we use equal-weighted return on the firm's Fama-French 49-industry.

3-year return on assets (ROA) (Compustat): Income before extraordinary items (*IB*) divided by the beginning-of-fiscal-year book value of total assets (*AT*).

A.3. CEO turnover

CEO turnover (Execucomp): A change in CEO as flagged in Execucomp. We assign a CEO turnover to fiscal year t if the date left as CEO (LEFTOFC) falls during the second half of year t or first half of year $t + 1$.

CEO forced turnover (Execucomp, Factiva, S&P Capital IQ Key Developments): We classify all CEO turnovers into forced or voluntary using the classification method identical to Fee, Hadlock, and Pierce (2013). For more details on the classification mechanism, refer to Section 2.2 of Fee, Hadlock, and Pierce (2013).

A.4. Firm controls

Firm size (Compustat): Log of the book value of total assets (*AT*).

R&D ratio (Compustat): Research and development expenses (*XRD*) divided by the beginning-of-fiscal-year book value of total assets (*AT*), set to zero if missing.

R&D missing dummy (Compustat): This dummy takes a value of 1 if research and development expenses (*XRD*) are missing, and 0 otherwise.

Cash ratio (Compustat): The ratio of cash and equivalent holdings (*CHE*) to the beginning-of-fiscal-year book value of total assets (*AT*).

Market leverage (Compustat): The sum of debt in current liabilities (*DLC*) and long-term debt (*DLTT*), divided by the beginning-of-fiscal year market value of total assets. The market value of total assets is defined as the book value of total assets (*AT*) minus the book value of equity plus the market value of equity minus deferred taxes and investment credits (*TXDITC*), if available. Book value of equity is defined as total stockholders' equity (*SEQ*) minus preferred stock, with the redemption value (*PSTKRV*), liquidation value (*PSTKL*), or total value (*PSTK*) used in the order of availability. Market value of equity is defined as fiscal year market close price (*PRCC_F*) multiplied by the number of common shares outstanding (*CSHO*).

Tobin's Q (Compustat): The market value of total assets divided by the book value of total assets. For the definition of the market value of total assets, see the definition of market leverage above.

Dividend-paying dummy (Compustat): An indicator variable that takes a value of 1 if the firm pays dividends to common equityholders during the fiscal year and 0 otherwise.

Return-on-equity (ROE) (Compustat): Net income (*IB*) divided by the average book value of equity (*SEQ*) between the beginning- and the end-of-fiscal-year periods.

Volatility of profitability (VOLP) (Compustat): Residual volatility of the AR(1) process of ROE, constructed in the identical manner to Pástor and Veronesi (2003).

A.5. CEO controls

CEO age (BoardEx): CEO age as stated in BoardEx.

CEO equity holdings (Execucomp): Fraction of the CEO's common equity ownership.

CEO pay slice (Execucomp): The fraction of the CEO's total compensation (*TDC1*) to the firm's five highest-earning directors' total compensation, constructed in the identical manner to Bebchuk, Cremers, and Peyer

(2011).

CEO tenure (Execucomp): Time elapsed since the data became CEO (*BECAMECEO*), in years. This variable is not used as a control as it is needed for the Cox proportion hazard model survival analysis.

A.6. Board controls

Log board size (BoardEx): Log of the number of directors on the board.

CEO duality (BoardEx): An indicator variable that takes a value of 1 if the CEO serves as the chair of the board and 0 otherwise.

Busy board (BoardEx): An indicator variable that takes a value of 1 if the board is classified as busy according to the definition of Fich and Shivdasani (2006), namely when a majority of the independent directors simultaneously serve on three or more boards.

Old director (BoardEx): Fraction of directors aged 70 or more.

Board independence (BoardEx): Fraction of independent directors as classified by BoardEx.

A.7. Other variables

Implied volatility (OptionMetrics): Average implied volatility from thirty-day at-the-money call and put options on the firm's common stock, computed at each month-end and averaged over a fiscal year.

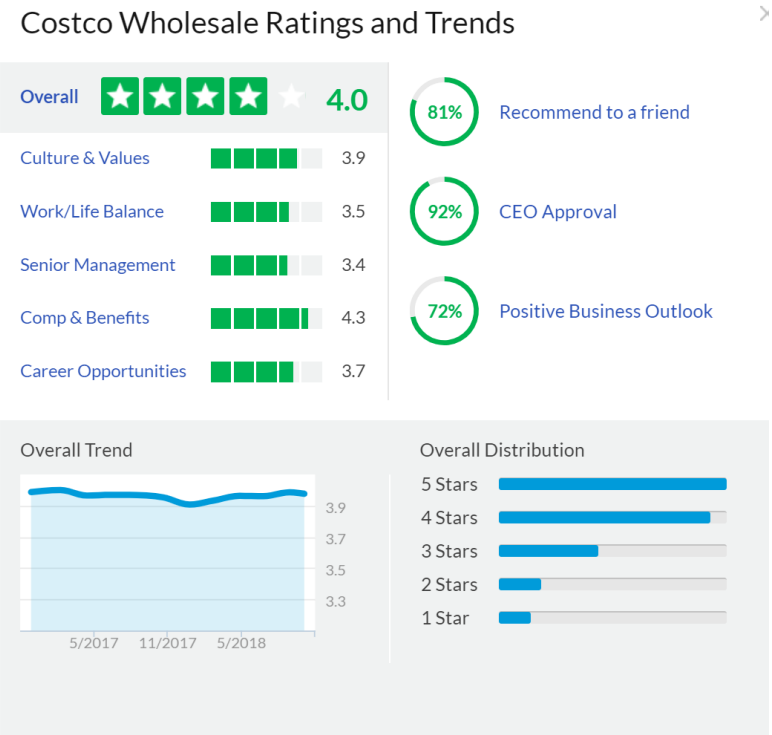
Idiosyncratic volatility (CRSP): Residual volatility of daily Fama-French three-factor model estimated over the fiscal year, similar to Pan, Wang, and Weisbach (2015). We use this method to obtain the firm's three-factor exposures in a fiscal year.

Negative corporate event dummy (S&P Capital IQ Key Developments): An indicator that takes a value of 1 if the firm announces an earnings restatement (item 43) or impairments/write-offs (item 73) during the fiscal year.

Dividend increase dummy (S&P Capital IQ Key Developments): An indicator that takes a value of 1 if the firm announces a dividend increase (item 46) during the fiscal year.

Figure 1. Employer Reviews and Rating Summary Page on Glassdoor

Panel A. Firm-level summary statistics



Panel B. Summary of pros and cons

Table 1. CEO Turnover Sample

This table presents the breakdown of (i) all CEO turnovers and (ii) CEO turnovers that are classified as forced according to the methodology of Fee, Hadlock, and Pierce (2013) by Fama-French 12-industry and the year of departure announcement (with the announcement date identified using Factiva and S&P Capital IQ Key Developments) for our main sample firms between 2012 and 2018. To be included in our sample, we require a minimum of 10 non-missing Glassdoor reviews and non-missing firm outlook score in a given firm-year.

Panel A. All turnovers

	Calendar year of turnover announcement							
	2012	2013	2014	2015	2016	2017	2018	Total
Consumer non-durables	1	2	1	5	9	4	3	25
Consumer durables	1	1	3	7	0	0	0	12
Manufacturing	2	7	9	8	8	3	2	39
Oil, gas, and coal extraction	0	3	2	2	3	0	2	12
Chemicals and allied products	0	1	6	5	4	0	0	16
Business equipment	5	20	13	9	10	3	3	63
Telephone and television transmission	0	3	3	2	0	0	1	9
Utilities	0	3	3	2	1	2	1	12
Wholesale and retail	4	7	10	9	9	2	5	46
Healthcare, medical equipment, and drugs	1	4	5	7	4	4	0	25
Finance	5	6	5	5	19	9	2	51
Other	2	6	11	8	2	2	5	36
Total	21	63	71	69	69	29	24	346

Panel B. Forced turnovers

	Calendar year of turnover announcement							
	2012	2013	2014	2015	2016	2017	2018	Total
Consumer non-durables	1	2	0	3	6	2	1	15
Consumer durables	0	1	1	4	0	0	0	6
Manufacturing	1	3	6	4	1	0	1	16
Oil, gas, and coal extraction	0	1	0	0	0	0	1	2
Chemicals and allied products	0	1	1	3	2	0	0	7
Business equipment	2	12	8	4	5	2	3	36
Telephone and television transmission	0	2	2	0	0	0	0	4
Utilities	0	0	1	1	0	0	0	2
Wholesale and retail	1	3	4	3	4	1	1	17
Healthcare, medical equipment, and drugs	0	4	3	5	2	3	0	17
Finance	4	3	4	2	11	4	0	28
Other	2	3	4	5	2	2	2	20
Total	11	35	34	34	33	14	9	170

Table 2. Summary Statistics

This table reports the summary statistics of the main variables of interest for our main sample firms between 2012 and 2018. We also report each variable's correlation with the CEO approval score as well as forced turnover dummy. All firm-year observations with a minimum of 10 Glassdoor reviews and non-missing firm outlook score are included in the sample. We compute the summary statistics of continuous variables using winsorized values. *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Variable	Obs.	Mean	St. Dev.	P1	P25	P50	P75	P99	Corr. with CEO approval	Corr. with forced CEO turnover
Firm performance										
3-year scaled return	4,377	0.041	0.160	-0.329	-0.069	0.036	0.151	0.409	0.161***	-0.074***
3-year ROA	4,377	0.060	0.065	-0.126	0.022	0.054	0.093	0.251	0.208***	-0.025*
Glassdoor scores										
CEO approval	4,377	0.278	0.306	-0.500	0.083	0.300	0.500	0.900	-	-0.085***
Firm outlook	4,377	0.201	0.310	-0.600	0.000	0.213	0.417	0.857	0.712***	-0.093***
Overall satisfaction	4,377	3.203	0.465	2.034	2.893	3.221	3.523	4.273	0.783***	-0.054***
Work-life balance	4,377	3.181	0.482	2.000	2.860	3.197	3.516	4.300	0.558***	-0.029*
Culture and values	4,377	3.152	0.547	1.857	2.786	3.167	3.524	4.385	0.752***	-0.048***
Career opportunities	4,377	2.973	0.426	1.960	2.690	2.978	3.261	4.000	0.708***	-0.041***
Comp. and benefit	4,377	3.273	0.498	2.071	2.932	3.291	3.622	4.375	0.548***	-0.009
Senior management	4,377	2.797	0.468	1.700	2.490	2.794	3.098	4.000	0.803***	-0.059***
Firm characteristics										
Total assets ($ millions)	4,377	21,099.9	43,653.0	166.1	1,597.2	4,720.7	17,154.0	220,177.0	0.130***	-0.031**
R&D ratio	4,377	0.027	0.058	0.000	0.000	0.000	0.027	0.251	0.061***	0.011
R&D missing	4,377	0.585	0.493	0.000	0.000	1.000	1.000	1.000	-0.052***	-0.037**
Cash ratio	4,377	0.155	0.162	0.002	0.040	0.101	0.217	0.729	0.088***	0.009
Market leverage	4,377	0.171	0.156	0.000	0.056	0.134	0.245	0.697	-0.107***	0.004
Tobin's Q	4,377	1.978	1.297	0.805	1.165	1.599	2.301	7.039	0.194***	-0.007
CEO characteristics										
CEO age	4,377	56.80	6.512	42.00	52.00	57.00	61.00	75.00	0.017	-0.091***
CEO equity holding	4,377	0.002	0.004	0.000	0.000	0.000	0.001	0.025	-0.070***	-0.027*
CEO pay slice	4,377	0.406	0.106	0.074	0.344	0.414	0.469	0.682	-0.052***	-0.010
Board characteristics										
Board size (raw)	4,377	9.870	2.234	5.000	8.000	10.000	11.000	16.000	0.158***	-0.007
CEO duality	4,377	0.482	0.500	0.000	0.000	0.000	1.000	1.000	0.028*	-0.043***
Busy board	4,377	0.066	0.248	0.000	0.000	0.000	0.000	1.000	0.006	-0.020
Old director	4,377	0.315	0.178	0.000	0.188	0.300	0.429	0.818	-0.094***	-0.048***
Board independence	4,377	0.748	0.121	0.500	0.647	0.722	0.875	0.929	-0.184***	0.044***

Table 3. Firm Performance, Employee Approval, and Forced Turnover: Difference-in-Mean Tests

In this table, we sort our sample firm-year observations into high and low subsamples for each Fama-French 49-industry and fiscal year pair, on the basis of three-year scaled return and CEO approval score, using the sample median as the cut-off, for our main sample firms between 2012 and 2018. We then form two-by-two subsample matrix on the basis of three-year scaled return and CEO approval. Then, using this two-by-two subsample matrix, we compute the likelihood of forced CEO turnover being announced during the second half of the fiscal year or the first half of the subsequent fiscal year. We further engage in difference-in-mean tests, and we also report the difference-in-difference tests in italics in the bottom right corner. All firm-year observations with a minimum of 10 Glassdoor reviews and non-missing firm outlook score are included in the sample. *t*-statistics computed using firm-clustered standard errors are in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Likelihood of forced CEO turnover				
		3-year scaled return		
		Low	High	High-low diff.
CEO approval	Low	0.063***	0.031***	-0.032***
		(9.65)	(5.55)	(-3.68)
	No. of Obs.	1,331	937	
	High	0.032***	0.023***	-0.010
		(5.60)	(5.31)	(-1.32)
	No. of Obs.	927	1,182	
	High-low difference	-0.031***	-0.008	*0.023***
		(-3.51)	(-1.15)	*(2.00)*

Table 4. CEO Turnover, Firm Performance, and CEO Approval

This table presents the results of Cox hazard regressions estimating the risk of forced turnover for our main sample firms between 2012 and 2018. Forced turnover is defined as in Fee, Hadlock, and Pierce (2013). All other turnovers are classified as voluntary and treated as right-censored observations as in Jenter and Kanaan (2015). As in the fiscal year assignment of Execucomp, we classify CEO turnovers to fiscal year *t* if it occurs within the second half of year *t* or the first half of year *t* + 1 (e.g., Lee, Lee, and Nagarajan, 2014). As in Jenter and Lewellen (2021), we focus on 3-year scaled return leading up to year *t* as the main measure of firm performance. In columns (1) and (3), we include the CEO approval score and 3-year scaled return separately, while in columns (2) to (4), we interact the two to estimate the effect of CEO approval score on turnover-performance sensitivity. In columns (1) and (2), we use the fiscal year *t* CEO approval score, while we consider the *t* – 1 CEO approval score in columns (3) and (4). *t*-statistics computed using firm-clustered standard errors are in parentheses. All specifications include Fama-French 49-industry and year fixed effect, and all controls are lagged by one year. We focus on all firm-year observations with (i) CEO tenure greater than 3 years at the time of turnover, (ii) more than 10 Glassdoor reviews during the fiscal year, and (iii) non-missing firm outlook score (which begins in 2012). *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

	Dependent variable: Forced turnover			
	Year *t* CEO approval		Year *t* – 1 CEO approval	
	(1)	(2)	(3)	(4)
CEO approval	-1.207***	-1.169***	-0.846***	-0.799**
	(-4.42)	(-4.22)	(-2.66)	(-2.47)
3-year scaled return	-1.989***	-2.600***	-2.358***	-3.212***
	(-3.43)	(-4.13)	(-3.63)	(-4.14)
CEO approval ×		3.433**		3.522**
3-year scaled return		(2.39)		(2.14)
Firm size	0.046	0.063	0.075	0.074
	(0.43)	(0.60)	(0.65)	(0.65)
R&D ratio	-2.696	-2.891	-3.314	-3.479
	(-1.00)	(-1.11)	(-0.90)	(-0.98)
R&D missing dummy	-0.074	-0.078	-0.248	-0.252
	(-0.24)	(-0.25)	(-0.68)	(-0.68)
Cash ratio	-0.594	-0.659	-1.558	-1.543
	(-0.86)	(-0.93)	(-1.62)	(-1.63)
Market leverage	-0.418	-0.353	-0.539	-0.365
	(-0.62)	(-0.53)	(-0.53)	(-0.36)
Tobin's Q	0.027	0.030	0.033	0.039
	(0.34)	(0.38)	(0.32)	(0.38)
CEO age	-0.096***	-0.097***	-0.089***	-0.086***
	(-7.17)	(-7.16)	(-5.96)	(-5.73)
CEO equity holding (×100)	-1.164**	-1.182**	-1.039*	-1.028*
	(-2.45)	(-2.37)	(-1.95)	(-1.91)
CEO pay slice	-1.940**	-1.816**	-2.529***	-2.396**
	(-2.23)	(-2.10)	(-2.68)	(-2.56)
Log board size	1.042**	1.018*	0.743	0.779
	(1.98)	(1.96)	(1.26)	(1.34)
CEO duality	-0.598***	-0.628***	-0.581**	-0.607***
	(-3.02)	(-3.18)	(-2.53)	(-2.65)
Busy board	-0.377	-0.400	-0.090	-0.111
	(-0.90)	(-0.96)	(-0.21)	(-0.26)
Old director	-2.352***	-2.441***	-2.485***	-2.613***
	(-4.52)	(-4.61)	(-4.02)	(-4.19)
Board independence	0.737	0.901	0.732	0.815
	(0.77)	(0.93)	(0.68)	(0.75)
No. of Obs.	4,097	4,097	3,215	3,215
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Table 5. CEO Turnover, Firm Performance, and Glassdoor Scores: Other Glassdoor Categories

This table re-estimates the Cox hazard regressions reported in columns (1) and (3) of Table 4 for other Glassdoor sub-category scores. Results using contemporaneous Glassdoor scores reported in Panel A, while lagged Glassdoor score results are presented in Panel B. *t*-statistics computed using firm-clustered standard errors are in parentheses. All specifications include Fama-French 49-industry and year fixed effect, and all controls other than the 3-year scaled return are lagged by one year. We focus on all firm-year observations with (i) CEO tenure greater than 3 years at the time of turnover, (ii) more than 10 Glassdoor reviews during the fiscal year, and (iii) non-missing firm outlook score (which begins in 2012). *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Glassdoor score in year *t*

	Dependent variable: Forced turnover							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	CEO approval	Firm outlook	Overall satisfaction	Work-life balance	Culture and values	Career opportunities	Comp. and benefits	Senior management
Sub-category score	**-1.207*** **	-1.216***	-0.381*	-0.151	-0.325*	-0.261	-0.028	-0.466**
	(-4.42)	(-3.94)	(-1.72)	(-0.81)	(-1.84)	(-1.17)	(-0.14)	(-2.26)
3-year scaled return	**-1.989*** **	-1.605***	-2.255***	-2.369***	-2.281***	-2.291***	-2.379***	-2.200***
	(-3.43)	(-2.68)	(-3.87)	(-4.07)	(-3.93)	(-3.94)	(-4.10)	(-3.79)
No. of Obs.	**4,097**	4,097	4,097	4,097	4,097	4,097	4,097	4,097
Industry FE	**YES**	YES	YES	YES	YES	YES	YES	YES
Year FE	**YES**	YES	YES	YES	YES	YES	YES	YES

Panel B. Glassdoor score in year *t* – 1

	Dependent variable: Forced turnover							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	CEO approval	Firm outlook	Overall satisfaction	Work-life balance	Culture and values	Career opportunities	Comp. and benefits	Senior management
Sub-category score	**-0.846*** **	-0.483	-0.362	-0.027	-0.228	-0.099	0.059	-0.389*
	(-2.66)	(-1.38)	(-1.55)	(-0.13)	(-1.18)	(-0.39)	(0.25)	(-1.66)
3-year scaled return	**-2.358*** **	-2.186***	-2.357***	-2.407***	-2.362***	-2.384***	-2.407***	-2.362***
	(-3.63)	(-3.35)	(-3.65)	(-3.75)	(-3.66)	(-3.67)	(-3.75)	(-3.67)
No. of Obs.	**3,215**	3,215	3,215	3,215	3,215	3,215	3,215	3,215
Industry FE	**YES**	YES	YES	YES	YES	YES	YES	YES
Year FE	**YES**	YES	YES	YES	YES	YES	YES	YES

Table 6. Further Analyses on Turnover-Performance Sensitivity

In this table, we re-estimate the results in column (2) of Table 4. First, in Panel A, we examine the role of employees by examining the turnover-performance sensitivity regressions separately for (i) firms headquartered in high (low) employee protection states as measured by the absence (existence) of right-to-work provisions, as in John, Knyazeva, and Knyazeva (2015), as well as (ii) firms with high vs. low asset intangibility. *t*-statistics computed using firm-clustered standard errors are in parentheses. Then, in Panel B, we examine the role of information environment by separately examining firms with (i) high vs. low analyst forecast error or (ii) high vs. low analyst forecast dispersion. Finally, in Panel C, we examine the role of CEO power by separately examining firms with (i) high vs. low CEO pay slice or (ii) low vs. high board independence. Controls are identical to Table 4, whose coefficients we omit for brevity. All specifications include Fama-French 49-industry and year fixed effect, and all controls are lagged by one year. We focus on all firm-year observations with (i) CEO tenure greater than 3 years at the time of turnover, (ii) more than 10 Glassdoor reviews during the fiscal year, and (iii) non-missing firm outlook score (which begins in 2012). *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. The role of employees

	Dependent variable: Forced turnover			
	(1)	(2)	(3)	(4)
	Employee protection		Asset intangibility	
	High	Low	High	Low
CEO approval	-1.418***	-0.698	-1.614***	-0.565
	(-4.08)	(-1.44)	(-4.99)	(-1.35)
3-year scaled return	-2.595***	-2.469	-2.282***	-2.788**
	(-3.36)	(-1.61)	(-2.65)	(-2.40)
CEO approval ×	3.434**	1.733	3.845***	1.009
3-year scaled return	(2.32)	(0.51)	(2.88)	(0.36)
No. of Obs.	2,484	1,587	2,011	1,955
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Panel B. The role of information environment

	Dependent variable: Forced turnover			
	(1)	(2)	(3)	(4)
	Analyst forecast error		Analyst forecast dispersion	
	High	Low	High	Low
CEO approval	-1.269***	-1.694***	-1.258***	-1.369***
	(-2.90)	(-4.18)	(-3.23)	(-3.67)
3-year scaled return	-3.345***	-1.392	-2.041**	-3.275***
	(-3.49)	(-1.59)	(-1.96)	(-3.26)
CEO approval ×	1.297	4.644***	1.161	7.776***
3-year scaled return	(0.49)	(2.61)	(0.55)	(3.73)
No. of Obs.	1,778	2,174	1,795	2,124
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Panel C. The role of CEO power

	Dependent variable: Forced turnover			
	(1)	(2)	(3)	(4)
	CEO pay slice		Board independence	
	High	Low	Low	High
CEO approval	-1.152***	-1.511***	-0.995**	-1.406***
	(-3.36)	(-3.49)	(-2.43)	(-3.36)
3-year scaled return	-4.218***	-1.526	-1.319	-3.101***
	(-4.86)	(-1.62)	(-1.35)	(-3.20)
CEO approval ×	1.014	6.153***	0.482	4.132**
3-year scaled return	(0.56)	(3.09)	(0.21)	(1.96)
No. of Obs.	2,187	1,910	2,469	1,628
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Table 7. CEO Approval and Future Firm Performance

In Panel A of this table, we report the OLS regression results of the change in 3-year ROA between years *t* and *t* + 1 on the latest 3-year scaled return, 3-year ROA, and CEO approval score for our main sample firms between 2012 and 2018. In column (1), we focus on all firm-years, while we restrict our attention to firm-years without forced turnover in column (2). *t*-statistics computed using firm-clustered standard errors are in parentheses in Panel A. Controls are identical to Table 4, whose coefficients we omit for brevity. All specifications in Panel A include Fama-French 49-industry-by-year fixed effect, and all controls are lagged by one year. Then, in Panel B of the table, we report the results of monthly Fama-Macbeth (1973) characteristic regressions using the CEO approval score in a comparable manner to Edmans (2009), with controls identical to Brennan, Chordia, and Subrahmanyam (1998). We focus on all observations with more than 10 Glassdoor reviews during the fiscal year and non-missing firm outlook score (which begins in 2012). *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A. Change in ROA

	Dependent variable: Change in 3-year ROA [*t* : *t* + 1]	
	(1)	(2)
	Full sample	Without forced turnover
CEO approval score	0.004**	0.004**
	(2.35)	(2.22)
Controls	YES	YES
No. of Obs.	4,212	4,041
Adjusted R-squared	0.199	0.205
Industry-by-year FE	YES	YES

Panel B. Fama-MacBeth characteristic regressions

	Dependent variable: Monthly return [*t*] (%)	
	(1)	(2)
Monthly return measure:	Raw return	EW FF49-industry-adjusted
CEO approval score	0.248**	0.182*
	(2.16)	(1.79)
Log market equity	-0.073	-0.062
	(-0.94)	(-0.85)
Book-to-market	0.078	0.076
	(0.40)	(0.65)
Return [*t* -3:*t* -2]	0.601	0.115
	(0.66)	(0.20)
Return [*t* -6:*t* -4]	0.664	0.039
	(1.33)	(0.10)
Return [*t* -12:*t* -7]	0.224	-0.076
	(0.44)	(-0.26)
Price level	0.000	0.001
	(0.15)	(1.02)
Log dollar trading volume	0.001	0.001
	(0.80)	(1.28)
No. of Monthly Periods	73	73
No. of Obs.	51,698	51,698

Table 8. Does the CEO Approval Score Respond to Poor Performance?

In this table, we report the OLS regression results of the change in the CEO approval score between years t and $t + 1$ on the latest change in 3-year scaled return and the change in the CEO approval score between years $t - 1$ and t for our main sample firms between 2012 and 2018. To implement a full change-on-change specification, we use the change of all other firm controls, but the results are robust when we use their levels instead. In column (1), we focus on all firm-years, while we restrict our attention to firm-years without forced turnover in column (2). t-statistics computed using firm-clustered standard errors are in parentheses. Controls are identical to Table 4, whose coefficients we omit for brevity. We focus on all observations with more than 10 Glassdoor reviews during the fiscal year and non-missing firm outlook score (which begins in 2012). *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

	Dependent variable: Change in CEO approval $[t : t + 1]$	
	(1)	(2)
	Full sample	Without forced turnover
Change in 3-year scaled return $[t - 1 : t]$	0.167***	0.164***
	(5.10)	(4.92)
Controls	YES	YES
No. of Obs.	3,501	3,371
Adjusted R-squared	0.129	0.124
Industry-by-year FE	YES	YES

Table 9. CEO Approval and Firm-Specific Risk

In the first two columns of this table, we report the OLS regression results of (i) implied volatility or (ii) idiosyncratic volatility on year *t* CEO approval score and other controls for our main sample firms between 2012 and 2018. Implied volatility is defined as the average of implied volatility from daily prices of thirty-day at-the-money call and put options written on the firm's common stock, calculated at each month-end and averaged over a fiscal year, and idiosyncratic volatility is measured as the standard deviation of residual of Fama-French three-factor regression at daily frequency during the fiscal year. In addition to our existing controls, we also include the firm's Fama-French three-factor exposures during year *t* (obtained from the regressions used to estimate idiosyncratic volatility), dividend-paying dummy, volatility of profitability (standard deviation of the AR(1) residual of ROE as in Pástor and Veronesi, 2003), and ROE, following Pan, Wang, and Weisbach (2015). Then, in the last column, we report the regression results of a linear probability model estimating the likelihood of a negative corporate event, namely earnings restatement or impairments/write-offs, as flagged in S&P Capital IQ Key Developments. We use the CEO approval and baseline firm controls (whose coefficients we omit for brevity) in year *t* to predict the likelihood of a negative corporate event occurring in year *t* + 1 using the identical set of controls as in Table 4. We focus on all observations with more than 10 Glassdoor reviews during the fiscal year and non-missing firm outlook score (which begins in 2012). *t*-statistics computed using firm-clustered standard errors are in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

	Dependent variable		
	Implied volatility [*t* + 1]	Idiosyncratic volatility [*t* + 1]	Negative corporate event dummy [*t* + 1]
	(1)	(2)	(3)
CEO approval score [*t*]	-0.077**	-0.044*	-0.062*
	(-2.32)	(-1.66)	(-1.91)
Controls	YES	YES	YES
No. of Obs.	2,686	2,962	3,486
Adjusted R-squared	0.641	0.462	0.153
Industry-by-year FE	YES	YES	YES