CEOs and Layoffs*

Marius Guenzel[1] Clint Hamilton[2] Ulrike Malmendier[3]

[1]The Wharton School

[2]UC Berkeley

[3]UC Berkeley, NBER, and CEPR

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Abstract

We study whether CEO social preferences influence firm decision-making. Using a newly constructed dataset on layoff announcements by U.S. public firms, we find that CEOs become increasingly reluctant to lay off employees over their tenure. This result is robust to instrumenting for total CEO tenure and exploiting exogenous CEO changes, and orthogonal to measures of CEO power and entrenchment. Longer-tenured CEOs are particularly averse to layoffs near company headquarters and during the holiday season. Layoff announcement returns for layoff-initiating firms after exogenous CEO changes appear to be significantly higher. For CEOs, plausibly-exogenous layoffs induced by industry downturns are associated with increased mortality.

* Marius Guenzel: mguenzel@wharton.upenn.edu. Clint Hamilton: cth@berkeley.edu. Ulrike Malmendier: ulrike@berkeley.edu. We thank Kevin F. Hallock for sharing his data. We also thank Dan Garrett, Ashley Litwin, and Dmitry Livdan for helpful comments as well as a team of research assistants at UC Berkeley and the University of Pennsylvania for their help in producing a new layoff dataset. Guenzel gratefully acknowledges financial support from Analytics at Wharton. All errors are our own.

1. Introduction

To what extent managers make decisions that are in their own interests, as opposed to the interests of shareholders, is a central question in corporate finance. One emphasis in traditional models of managerial preferences is agency conflicts that induce entrenched managers to shirk and avoid costly effort. In this vein, Bertrand and Mullainathan (2003), for example, show that managers protected from removal due to hostile takeover pay workers more and are less likely to shut down old plants (see also Cronqvist, Heyman, Nilsson, Svaleryd, and Vlachos 2009, Giroud and Mueller 2010, and Gormley and Matsa 2016). More recent work has also emphasized nonstandard managerial preferences and beliefs that distort firm decision-making (see Malmendier (2018) and Guenzel and Malmendier (2020) for recent reviews of the literature on behavioral CEOs).

In this paper, we provide evidence for a complementary mechanism through which managers matter that combines aspects from both themes above: CEOs shying away from tough decisions, but due to nonstandard preferences—namely, social preferences—as opposed to entrenchment. While social preferences are an active area of research in behavioral economics (see, e.g., Fehr and Schmidt 1999, Charness and Rabin 2002, and DellaVigna 2009), little work exists to date in the context of top-level managers.[1] At a high level, we show that CEOs become increasingly employee-friendly with longer tenure, especially so towards geographically close employees. Our results are orthogonal to proxies for managerial entrenchment. Instead, various additional tests lend support to a mechanism based on CEO social preferences for workers.

Throughout, we focus on layoff decisions as a natural determinant and manifestation of CEO social preferences. Stakeholder theory highlights employees as one key constituency of the firm (Freeman 1984), motivating the employee and layoff angle to study managers' other-regarding preferences. Related motivating evidence comes from CEO surveys. Martin (2005), surveying 2,000 senior executives and managers, finds that more than half view hiring and firing as "the toughest decision" in their careers. Hallock (2005) provides additional colorful insight through interviews with senior managers of mostly

[1] Notable exceptions include Landier, Nair, and Wulf (2009), Cheng, Hong, and Shue (2013), and Cronqvist and Yu (2017), discussed in more detail below.

Fortune 500 firms, with one CEO stating that layoffs are "a human decision. It is hard."[2]

Our analysis proceeds in two steps. In the first part of the paper, we study how CEOs' propensity to make layoffs varies with CEOs' tenure. We conjecture that the more years CEOs accumulate at the helm of the firm and interact with their employees, the more they will care about them, i.e., the more their decision-making will be influenced by social considerations. This, in turn, predicts that longer tenured CEOs will be less inclined to make layoffs.[3]

One major challenge to studying the determinants and effects of layoffs is a lack of robust data. Existing work oftentimes proxies for layoffs by decreases in overall employment numbers (cf. Schmieder, von Wachter, and Heining 2022, Landier, Nair, and Wulf 2009). Instead of taking this route, we assemble a novel, comprehensive dataset of layoff announcements over the last two decades by U.S. firms included in Execucomp. Our dataset specifically identifies involuntary layoffs as opposed to employee reassignments or voluntary departures such as early retirement. We describe the dataset construction in detail in Section 2.1 and Internet Appendix Section II. In short, our primary source for the layoff announcement data is the Standard and Poor's (S&P) Capital IQ Key Developments database, specifically the subcategory of "Discontinued Operations/Downsizings." Each key development entry includes a date, a headline, and a situation summary which we hand-code or hand-review after automatic pre-population to identify and isolate layoff announcements. We enrich this data by also collecting information on layoff severity and geography, i.e., number of employees laid off as well as layoff site(s). Our final dataset covers more than 12,000 layoff announcements.

We find that, consistent with the hypothesis of tenure-induced social preferences of CEOs, there is a strong, negative link between CEO tenure and layoff propensity. In our preferred and most stringent specification, an interquartile increase in CEO tenure is estimated to reduce the layoff propensity by 1.5 percentage points, or by 9% relative to the baseline annual probability of a layoff of 17%. For comparison, a firm's industry going through a period of distress is associated with an increase in layoff probability of around 4 percentage points.

[2] We highlight further anecdotal examples from these and other sources in footnote 5 and Section 3.3.

[3] Related to our conjecture, Bandiera, Barankay, and Rasul (2005) find evidence of social preferences for co-workers that are amplified when relationships with co-workers are stronger as measured by friendship networks. Their focus is, however, on low-ranking employees, not managers.

This baseline finding is consistent with prior work by Pan, Wang, and Weisbach (2016), who first documented the existence of "CEO investment cycles," with investment increasing and disinvestment, including downsizings, decreasing over a CEO's tenure. The negative CEO tenure–layoff relation in our data is robust to various different specifications. It is not explained by standard firm measures such as size or profitability, year fixed effects, or industry fixed effects. It holds with controls for labor and capital productivity as well as with firm fixed effects, the latter implying that endogenous matching, where long-tenured CEOs prefer companies that avoid firing, does not explain our results. It is also robust to controlling for the CFO's tenure–i.e., there is a distinct CEO effect—, to an instrumental variables (IV) approach for tenure as in Graham, Kim, and Leary (2020) (see also Altonji and Shakotko 1987), and is pronounced in a difference-in-differences analysis that exploits exogenous reductions in a firm's CEO tenure due to CEO death or illness. Finally, it is robust to examining the *layoff rate* over a CEO's tenure by accounting for the number of employees laid off, a new result relative to Pan, Wang, and Weisbach (2016).

To tease out mechanisms that drive the CEO tenure–layoff link, we then test where this link is amplified or dampened. We first explore increasing CEO power with longer tenure as an explanation, which combined with empire building preferences could explain the results. However, the CEO tenure–layoff association is orthogonal to the fraction of CEO-appointed directors on the board as a dynamic measure of CEO power. Additionally, we find no evidence that the results are explained by increasing CEO entrenchment with tenure. The tenure–layoff relation holds within and across levels of entrenchment as gauged by the Bebchuk, Cohen, and Ferrell (2009) index and other proxies (see Section 3.3 for further details).

Instead, the results are consistent with increasing CEO empathy with tenure, a new mechanism not explored in prior work. Over time, CEOs become significantly more averse to layoffs at or near the firm's headquarters, both unconditionally as well as conditional on making a layoff somewhere in a given year. Longer tenured CEOs are also much less likely to lay people off in December right before the holidays, again even conditional on making a layoff in given year. The conditional results on *within-year layoff timing* are particularly indicative of CEO social preferences as an underlying mechanism and difficult to reconcile with alternative explanations based on some omitted variable that affects both tenure and layoff propensity.

In the second part of the paper, we turn to the implications of the previous findings on CEO social preferences with respect to employees and layoff decisions. First, we explore firm-level implications by studying the market's reaction to layoff announcements. Over our entire sample, the market reaction to layoff announcements is slightly negative on average, though there is substantial heterogeneity in announcement returns, with observables explaining only a small share of the variation. However, layoff announcement returns after exogenous reductions in the tenure of a firm's CEO due to death or illness trigger a pronounced positive reaction on average, especially when the exogenously removed CEO made no layoffs previously. These results suggest that reduced layoff activity by longer-tenured CEOs induced by social preferences is plausibly associated with significant consequences for firm and shareholder value.

Next, we explore CEO-level implications. We study how CEOs' layoff decisions affect their long-term health. This analysis builds on Borgschulte, Guenzel, Liu, and Malmendier (2022), who document significant increases in long-run mortality when CEOs' work environment becomes exogenously more stressful, and uses an earlier layoff sample from Hallock (1998), Billger and Hallock (2005), and Farber and Hallock (2009).[4] We find significant mortality effects associated with layoffs that CEOs make in response to plausibly exogenous industry distress shocks. We estimate a distress-layoff effect on mortality roughly corresponding to that of a two-year increase in CEO age, which is similar in magnitude to the effect sizes in Borgschulte, Guenzel, Liu, and Malmendier (2022). By contrast, non-distress layoffs are insignificantly related to CEO mortality. Overall, these CEO results are consistent with the idea that CEOs with social preferences find it particularly difficult to lay off employees in response to economic downturns, and if doing so, are left with long-term emotional scars.[5]

Our paper contributes to several literatures. First, our findings shed light on how CEO social preferences influence firms' labor demand choices. The first part of our paper

[4] We are grateful to Kevin F. Hallock for sharing the data.

[5] Consistent with this, in a 2016 documentary titled "Lonely at the Top: Top-Level Managers at Their Limit," a former executive at Siemens AG recalled that "[l]aying people off is something that took its toll on me." The documentary is available (in German) at youtube.com/watch?v=FcRH3r0nEDE. Consistent with recession-induced layoffs being particularly scarring, one manager in the survey by Martin (2005) responded that "[o]ver the years the toughest decision was letting someone go, not based on their performance, but based on the firm's condition." Similarly, another senior manager interviewed by Hallock (2005) responded that the "goal is to never terminate a good employee."

is perhaps most closely related to Landier, Nair, and Wulf (2009) and Pan, Wang, and Weisbach (2016). Landier, Nair, and Wulf (2009) find that firms are less likely to implement layoffs in divisions located closer to the headquarters. They do, however, not examine how the geographic layoff propensity varies with CEO tenure (nor do they study any other managerial characteristics), and can measure layoffs only indirectly as a decrease in the number of employees in a given division. Pan, Wang, and Weisbach (2016) are the first to document a link between CEO tenure and disinvestment, including downsizings (defined slightly more broadly), but do not consider CEO social preferences as a potential underlying channel. Cheng, Hong, and Shue (2013) and Cronqvist and Yu (2017) are more directly concerned with CEO social preferences, but study CEOs' corporate social responsibility rather than labor demand. We isolate a new channel by which CEOs' social preferences affect firm and employee outcomes, facilitated by our comprehensive data on actual layoff announcements. Our findings also relate to Jenter and Lewellen (2015) showing that managerial preferences are influenced by social norms (in the context of retirement choices), as well as to the "social economics and finance paradigm" in Hirshleifer (2020) calling for more work on the "social processes that shape economic thinking and behavior."

By focusing on CEO social preferences related to employees, we also provide a complementary angle to prior work on CEO preferences and employees that has, instead, focused on CEO entrenchment. A large literature documents increased managerial slack in response to being protected from job removal due to anti-takeover laws. In particular, the destruction of old plants and the creation of new plants falls, and more entrenched managers take on less risk and pay their employees more (Bertrand and Mullainathan 2003, Giroud and Mueller 2010, Gormley and Matsa 2016, Cronqvist, Heyman, Nilsson, Svaleryd, and Vlachos 2009). Previous work has also studied how entrenchment affects CEO compensation and the composition of observable versus hidden pay (Kuhnen and Zwiebel 2008). Our results are distinct from this prior work as they obtain within and across different levels of CEO entrenchment.

Next, we contribute to the literature on the market reactions to and shareholder value effects of layoffs. Consistent with the majority of prior work, we find that layoff announcements are, on average, bad news for shareholders as gauged by announcement returns (see, e.g., Worrell, Davidson III, and Sharma 1991, Iqbal and Shetty 1995, Chen,

Mehrotra, Sivakumar, and Wayne 2001, and Farber and Hallock 2009). We add to this literature by discussing CEO social preferences as a channel for layoffs, and providing evidence from CEO death and illness events that reductions in tenure (and the degree of social preferences) plausibly improves firms' shareholder focus when it comes to layoff decisions.

Finally, our findings advance the literature on the effects of CEOs' job duties and stress. Bandiera, Lemos, Prat, and Sadun (2018) and Bandiera, Prat, Hansen, and Sadun (2020) document the intense demands and long work hours that come with the CEO position, particularly for non-family CEOs. The interviews in Hallock (2005) provide first-hand evidence from high-level managers on the taxing nature of layoff decisions in particular. More directly related to our analysis, Yen and Benham (1986) and Borgschulte, Guenzel, Liu, and Malmendier (2022) provide evidence that plausibly exogenous variation CEOs' job demands imply significant health consequences in terms of aging and mortality. We extend these prior findings by showing how, in spite of the high stress top CEOs are under in general, singular events such as layoffs have significant long-term adverse effects on CEO health.

The rest of the paper is structured as follows. Section 2 describes the data. Section 3 presents our main results on CEO tenure. Section 4 discusses implications for firms and CEOs, including how CEOs' mortality is affected by layoffs. Section 5 concludes.

2. Data

This section presents a summary of our data and descriptive statistics. Further details about data sources and calculations are contained in Internet Appendix Section II.

2.1 Layoff Data From Key Developments Database

Our primary source for data on layoff announcements in the 21st century is the Standard and Poor's (S&P) Capital IQ Key Developments database. The data begins robustly in 2002 (Edmans, Goncalves-Pinto, Groen-Xu, and Wang 2018; Cohn, Gurun, and Moussawi 2020). Since we rely on Execucomp for details about CEOs, our initial data collection covered all firms in Execucomp from 2002 to 2020 at the time of down-

loading.[6] Layoff announcements are located in the Key Developments database under the category of "Potential Red Flags/Distress Indicators" subcategory of "Discontinued Operations/Downsizings." Pan, Wang, and Weisbach (2016) use the same data source to create their downsizing announcement measure based on whether a firm is included in the "Seeking to sell/divest" or "Discontinued Operations/Downsizings" categories in a given month. Through our hand-coding of the data, we are able to specifically identify layoff announcements, in particular involuntary layoffs as opposed to employee reassignments or voluntary departures such as early retirement. As well, we can identify and remove duplicate announcements. We also collect new supplementary information on the number of employees laid off as well as layoff site(s), which allows use to test for underlying mechanisms for layoffs.

There are approximately 12,340 key developments in this subcategory for firms in our sample. Each key development entry includes a date, a headline, and a situation summary which is a short description. To the best of our knowledge, the content is written by S&P employees based on a variety of sources which, according to S&P, may include "news aggregators, stock exchanges and regulatory websites as well as company websites." Our data is hand-collected or hand-reviewed after automatic pre-population. We manually classify each key development as a layoff, closure, or neither. If there is a closure (e.g., factory, branch, etc.) that specifies an associated layoff, then it is coded as a layoff. Events which denote a closure, but not a layoff, are classified as closures. Most closure events do not specify what happens to employees working at the associated site(s); however, many of these closures are likely to result in layoffs since they are closing entire plants or branches. For this reason, in our analyses we treat events classified as layoffs and closures as layoff events. When specified in the headline or description, we also collect the number or percent of employees laid off and location if specified. We focus on U.S. companies and therefore collect the location up to the city level for US locations and to the country level for foreign layoffs. We also note layoffs that specify that they are international or global. Lastly, we note duplicate announcements.

[6] Data was downloaded at Jan. 31, 2022, 11:04 p.m. and coverage of 2021 was minimal.

2.2 CEO and Firm Data

The data for our main results comes from 2002 to 2020 covering 2761 firms from Execucomp, which covers the S&P 1500, former S&P 1500 firms that are still trading, and other large firms. Data on CEO and CFO tenure comes from Execucomp. For CEOs, we base the length of tenure on the year the CEO took the position or calculate it manually using the full Execucomp data set since 1992. We identify CFOs using Execucomp's classification or by following Jiang, Petroni, and Wang (2010) and identify CFOs by examining the title. For CFOs, we always manually calculate tenure. Data on firm characteristics comes from Compustat. We use log assets and log employees as proxies for firm size. Firm profitability is measured as operating income before depreciation divided by assets. We use the lag of these variables and winsorize the firm profitability measure to reduce the impact of outliers. Stock price data comes from The Center for Research in Security Prices, LLC (CRSP). We identify industry distress shocks based on a 30% median firm stock-price decline over a two-year horizon, similar to prior work (Opler and Titman 1994; Acharya, Bharath, and Srinivasan 2007; Babina 2020). To construct a measure of entrenchment, we use governance data from the Institutional Shareholder Services (ISS, formerly RiskMetrics). Our entrenchment measure is described in Section 3.3.

2.3 CEO Mortality Data and Layoff Data 1970–1999

Our sample for our mortality analysis is all CEOs included in the *Forbes Executive Compensation Surveys* from 1975 to 1991, who were appointed in 1970 or later, and whose firm was part of the *Fortune 500* between 1970 and 1999.

The mortality data set comes from Borgschulte, Guenzel, Liu, and Malmendier (2022) and covers all CEOs included in the *Forbes* Executive Compensation Surveys from 1975 to 1991.[7] These surveys are based on corporate proxy statements and include the executives of the largest U.S. firms. All firms with a PERMNO identifier in CRSP are included.

The exact dates of CEOs' birth, whether a CEO has died, and the date of death if the CEO has passed away were sourced by hand. All CEOs who did not pass away by the cutoff date of October 1st, 2017 are censored. The main source of birth and death information is Ancestry.com, which links historical birth and death records from the U.S.

[7] This is an extension of the data in Gibbons and Murphy (1992).

Census, the Social Security Death Index, birth certificates, and other historical sources validated by online searches. CEOs are denoted as alive whenever recent sources confirm their alive status. Tenure information for all sample CEOs was collected to fill the gaps and correct misrecorded data in the *Forbes* Executive Compensation Surveys. Execucomp, online searches, and especially the *New York Times* Business People section, which frequently reports on executive changes in this sample of firms, were used. When the exact month of a CEO transition is missing, we use the "mid-year convention" motivated by the relatively uniform distribution of CEO starting months in Execucomp (Eisfeldt and Kuhnen 2013). We further restrict the sample to CEOs whose firm was included in CRSP during the time of their tenure.

The mortality data set is merged with the layoff data from Hallock (1998), Billger and Hallock (2005), and Farber and Hallock (2009). This data set covers all firms ever listed in the *Fortune 500* between 1970 and 1999 and provides a comprehensive list of layoff announcements collected from the *Wall Street Journal*. The *Wall Street Journal* Index's abstracts are searched by company name and then examined to find layoff announcements. The intersection of these two data sets yields our final sample described above. After merging with Compustat and CRSP control variables, we have 31,917 CEO-year observations from 1,131 CEOs across 658 firms.

2.4 Descriptive Statistics

Table 1 Panel a presents summary statistics for all observations in our baseline estimation. Observations are at the yearly level and, within year, constitute a CEO-firm pair. We find that the average CEO tenure in our panel is 8 years which is higher than the average CFO tenure of only 5 years. Based on our industry distress measure, close to 20% of observations are firm-years in distress. We decompose layoffs across time and industry in Figure 1. Panel a plots the number of layoffs by month during our sample period. The number of layoffs peaks during the Great Recession and is lower than average in recent years where unemployment has been very low (Petrosky-Nadeau, Valletta, et al. 2019). Panel b decomposes the layoffs by industry. We see the industry with the most layoff observations is retail trade, which features seasonal labor demand (Anderson 1993), and the manufacturing section, which has been particularly affected by offshoring and

Table 1. Summary Statistics

Panel (a) shows summary statistics for all CEO-firm-year observations used in Column (1) of Table 2. Data on layoffs hand-coded using S&P Key Developments data. CEO and CFO tenure based on Execucomp data. Firm size and profitability measures from Compustat data. Industry distress measure based on data from CRSP. E-Index based on ISS data. More details about the data are in Section 2 and Appendix-Section II. Panel (b) shows summary statistics for all CEOs used in Table 10. Mortality and tenure data is from Borgschulte, Guenzel, Liu, and Malmendier (2022). Layoff data is from Hallock (1998), Billger and Hallock (2005), and Farber and Hallock (2009). Firm size and profitability measures from Compustat data. Industry distress measure and minimum stock performance based on data from CRSP. More details about the data are in Section 2.

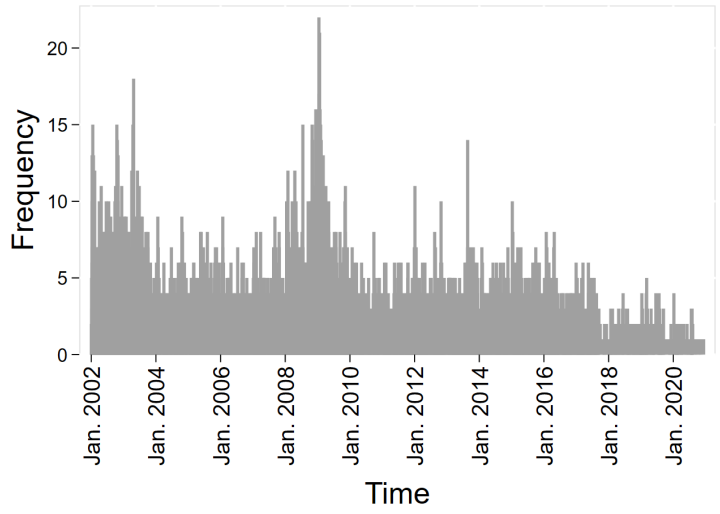
(a) Main Layoff Sample (Sections 2.1 and 2.2)

	N	Mean	SD	25%-ile	Median	75%-ile
Layoff	34628	0.17	0.37	0.00	0.00	0.00
CEO Tenure	34628	8.13	6.96	3.00	6.00	11.00
CFO Tenure	32378	4.64	3.55	2.00	4.00	6.00
Industry Distress (Lag 1&2)	34628	0.19	0.39	0.00	0.00	0.00
Firm Size (Ln Assets)	34628	7.69	1.84	6.40	7.58	8.86
Firm Size (Ln Employees)	34628	1.45	1.77	0.26	1.47	2.63
Firm Profitability	34628	0.11	0.10	0.06	0.11	0.17
E-Index	23248	2.77	0.64	2.00	3.00	3.00

(b) CEO Mortality Sample (Section 2.3)

	N	Mean	SD	25%-ile	Median	75%-ile
Age Appointed CEO	1131	53.49	6.45	49.00	54.00	58.00
Year Born	1131	1928.12	8.50	1922.00	1928.00	1934.00
Year Dead/Censored	1131	2010.33	9.58	2004.83	2015.00	2017.75
Ever Distressed Layoff	1131	0.11	0.32	0.00	0.00	0.00
Ever Non-Distressed Layoff	1131	0.38	0.49	0.00	0.00	1.00
Ever Industry Distress (Lag 1&2)	1131	0.43	0.50	0.00	0.00	1.00
Firm Size (Ln Assets)	1131	7.35	1.66	6.33	7.38	8.42
Firm Size (Ln Employees)	1131	9.61	1.40	8.78	9.67	10.56
Firm Profitability	1131	0.14	0.07	0.09	0.13	0.18
Minimum Stock Performance	1131	0.70	0.15	0.60	0.71	0.80

(a) Layoffs by Month



(b) Layoffs By Industry

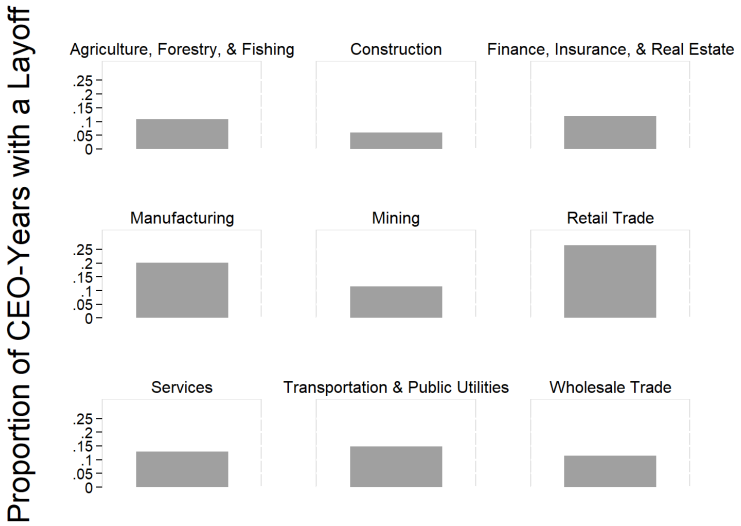


Figure 1. Layoff Events

Panel (a) plots the number of layoffs from our sample by month. Panel (b) plots the distribution of layoffs from our sample by industry classification based on SIC code. Data on layoffs hand-coded using S&P Key Developments data. SIC codes are provided by Compustat.

automation (Slaper 2019). These two broad industries account for almost half of the layoffs in our sample. These results do, however, not account for the distribution of firms within

our sample. For example, 40% of firms in our sample are in the manufacturing sector which accounts for about 20% of years with a layoff. Meanwhile, only 8% of firms are in the retail trade sector which accounts for about 25% of years with a layoff. These numbers help to describe the layoff observations which drive our results.

Table 1 Panel b presents summary statistics for all CEOs used in our mortality estimations. We present observations at the CEO level. The average year born was 1928 and the average year of death/censoring is 2010. 11% of CEOs experienced a distressed layoff and 38% experienced a non-distressed layoff. 43% of CEOs experienced industry distress. Firm size and profitability measures are from the year of appointment. The minimum stock performance, defined as the worst stock performance in any six-month period during the CEO's tenure, suggests -30% returns being the average worst performance for our sample of CEOs.

3. Layoffs and CEO Tenure

3.1 Baseline Results

Layoff Propensity and CEO Tenure. Our first set of findings pertains to the relationship between a firm's propensity to lay off employees and the CEO's tenure at the helm of the firm. We start by regressing layoff propensity on CEO tenure (as well as controls and fixed effects):

$$Layoff_{i,j,t} = \alpha_j + \alpha_t + \beta\, CEOTenure_{i,j,t} + \boldsymbol{X}'_{i,j,t}\gamma + \varepsilon_{i,j,t} \tag{1}$$

where $Layoff_{i,j,t}$ is an indicator variable that equals one if CEO i makes a layoff announcement while at the helm at firm j in year t and zero otherwise. $CEOTenure_{i,j,t}$ is accumulated tenure of CEO i at firm j in year t, measured in years. α_i and α_t are firm and year fixed effects, though below we also estimate models with no or less granular fixed effects.

In Column (1) of Table 2, we start by exploring the raw relation between layoff propensity and CEO tenure without controls or fixed effects. We observe a strongly negative relation, a one-year increase in tenure reduces the probability of a layoff in a given year by one half of a percent. We expect this effect to be partially driven by "standard channels" such as a firm performance effect, i.e., better-performing firms seeing no need to either fire the CEO or lay off employees. In line with this, in Column (2), the effect of

CEO tenure on layoff propensity is reduced by about 45% when including lagged firm profitability and an indicator for lagged industry-wide distress, as well as measures of firm size, year fixed effects, location fixed effects, and industry fixed effects. However, even with these added controls and fixed effects, the association between layoff likelihood and CEO tenure remains strong, both economically and statistically.

Table 2. Layoff Propensity and CEO Tenure

The dependent variable is an indicator variable that equals one if a firm makes at least one layoff announcement in a given year and zero otherwise. Data on layoffs hand-coded using S&P Key Developments data. CEO and CFO tenure based on Execucomp data. Both are winsorized and divided by 100 in the regressions for ease of exposition. Firm size and profitability measures from Compustat data. Firm profitability is defined as operating income before depreciation divided by assets and is winsorized. Firm characteristics are lagged. Industry classification is at the SIC3 level using data from Compustat. Industry distress uses CRSP stock data and is defined as a 30% drop in median firm stock-price over the following two years in an industry. Standard errors, clustered by industry, are shown in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

	(1)	(2)	(3)	(4)
CEO Tenure / 100	-0.504^{***}	-0.282^{***}	-0.193^{***}	-0.190^{***}
	(0.046)	(0.031)	(0.040)	(0.039)
Industry Distress (Lag 1&2)		0.045^{***}	0.043^{***}	0.038^{***}
		(0.012)	(0.012)	(0.013)
Firm Size (Ln Assets)		0.041^{***}	0.034^{***}	0.037^{***}
		(0.005)	(0.008)	(0.009)
Firm Size (Ln Employees)		0.040^{***}	0.059^{***}	0.067^{***}
		(0.005)	(0.008)	(0.009)
Firm Profitability		-0.367^{***}	-0.275^{***}	-0.275^{***}
		(0.036)	(0.051)	(0.052)
CFO Tenure / 100				-0.110
				(0.076)
Year FE	No	Yes	Yes	Yes
State FE	No	Yes	No	No
Industry FE	No	Yes	No	No
Firm FE	No	No	Yes	Yes
Observations	34,628	34,628	34,513	32,249

The coefficients on the added control variables in Column (2) all make intuitive sense. More profitable firms are less likely to announce layoffs, whereas larger firms as measured by number of employees or total assets are more likely to do so. Industry distress makes

layoffs more likely. We include an indicator variable capturing lagged or twice-lagged industry distress (rather than contemporaneous distress) because, as detailed in Section 2.2, our definition of distress is itself forward-looking, which partially offsets the lagging.

The layoff–CEO tenure relationship also survives when we add firm fixed effects in Column (3). That is, we do not pick up an effect where firms with long-serving CEOs have a preference (firm culture) for long-term relationships with employees at all hierarchy levels. This interpretation is strengthened in Column (4), when we include in addition the CFO's tenure at the firm. While CEO and CFO tenure are strongly correlated ($\rho = 0.20$, $p - \text{value} < 0.001$), the coefficient on CEO tenure is almost unchanged, suggesting that there is a distinct CEO effect in this setting.

The baseline result in Table 2 is consistent with Pan, Wang, and Weisbach (2016), who were the first to document "investment and disinvestment cycles" over the course of a CEO's tenure. (However, in contrast to this prior work, much of our focus below will be on CEO social preferences and increasing employee friendliness over a CEO's tenure as an explanation for this result.) In terms of magnitudes, Table 2 points to meaningful but plausible effect sizes. Using the most stringent specification in Column (4), an interquartile increase in CEO tenure is estimated to reduce the layoff propensity by 1.5 percentage points, or by 9% relative to the baseline probability of a layoff of 17% (see Table 1). A shift in CEO tenure from the 10th to the 90th percentile is estimated to reduce the layoff propensity by 3 percentage points, or by 18% relative to the baseline layoff probability. For comparison, a firm's industry going through a period of distress is associated with an increase in layoff probability of around 4 percentage points in Columns (2) to (4) of Table 2.

Exploiting Information on Number of Employees Laid Off. While, following Pan, Wang, and Weisbach (2016), we will continue to focus on the binary CEO layoff propensity measure in the remainder of the paper, our more detailed data compared to this prior work allow us to confront the previous results with information on the number of employees laid off. In principle, it could be that layoff announcements of new CEOs—who are presumably still less familiar with many parts of the firm—are more frequent but involve fewer employees per layoff, without the *layoff rate* actually changing over the CEO's tenure.

In Table 3, we replace the indicator for firms making at least one layoff in a given year from Table 2 with the *fraction of employees laid off* in a given year. The inclusion of controls and fixed effects is the same as before. We indeed find that CEO tenure also strongly

Table 3. Layoff Propensity and CEO Tenure—Exploiting Information on Number of Employees Laid Off

The dependent variable is the fraction of employees laid off in a given year. Data on layoffs hand-coded using S&P Key Developments data. CEO and CFO tenure based on Execucomp data. Both are winsorized and divided by 100 in the regressions for ease of exposition. Firm size and profitability measures from Compustat data. Firm profitability is defined as operating income before depreciation divided by assets and is winsorized. Firm characteristics are lagged. Industry classification is at the SIC3 level using data from Compustat. Industry distress uses CRSP stock data and is defined as a 30% drop in median firm stock-price over the following two years in an industry. Standard errors, clustered by industry, are shown in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

	(1)	(2)	(3)	(4)
CEO Tenure / 100	-0.026^{***}	-0.019^{***}	-0.017^{***}	-0.016^{***}
	(0.003)	(0.003)	(0.005)	(0.005)
Industry Distress (Lag 1&2)		0.006^{***}	0.006^{***}	0.005^{***}
		(0.001)	(0.001)	(0.001)
Firm Size (Ln Assets)		0.002^{***}	0.003^{***}	0.003^{***}
		(0.000)	(0.001)	(0.001)
Firm Size (Ln Employees)		0.000	0.003^{***}	0.003^{***}
		(0.000)	(0.001)	(0.001)
Firm Profitability		-0.026^{***}	-0.021^{***}	-0.024^{***}
		(0.003)	(0.003)	(0.004)
CFO Tenure / 100				-0.007
				(0.006)
Year FE	No	Yes	Yes	Yes
State FE	No	Yes	No	No
Industry FE	No	Yes	No	No
Firm FE	No	No	Yes	Yes
Observations	34,334	34,334	34,218	31,996

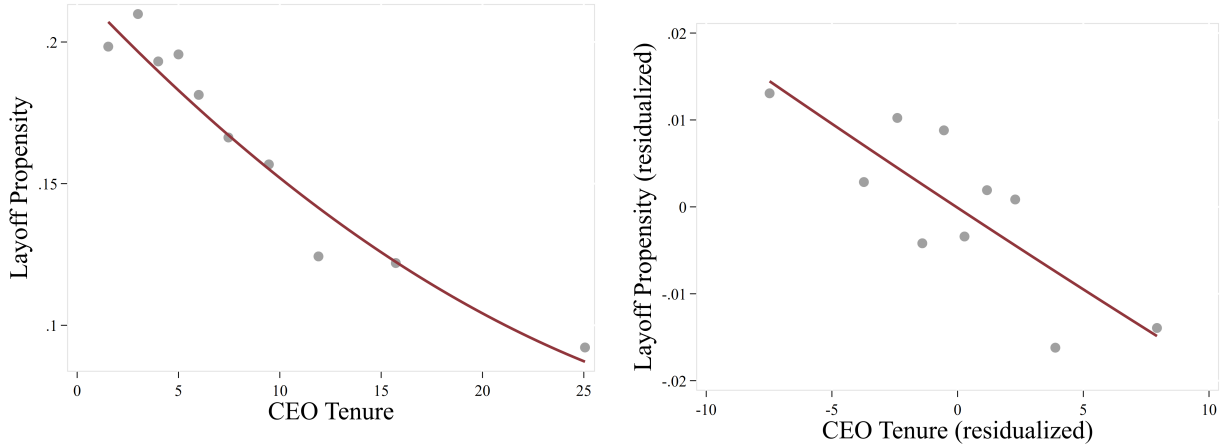
predicts the layoff rate. As in Table 2, the CEO tenure coefficient is significant at the 1% level across specifications. Using the more stringent specifications with firm fixed effects, an increase in CEO tenure from the 10th to the 90th percentile is associated with a layoff rate effect size about half as large as that corresponding to industry distress.[8]

Graphical Evidence. We also investigate the relationship from Tables 2 and 3 on layoffs and CEO tenure graphically in Figure 2. Panel a corresponds to Table 2 and plots

[8] $((|-0.016|/100) \times 16)/0.005 = 0.512$.

the the raw and residualized relationships between CEO tenure and layoff probability in a binned scatterplot. Panel b corresponds to Table 3 and plots the relationship between tenure and layoff rate. Both plots confirm the strongly negative association between CEO tenure and layoff propensity.

(a) Binary Layoff Measure (Table 2)



(b) Fraction of Employees Laid Off (Table 3)

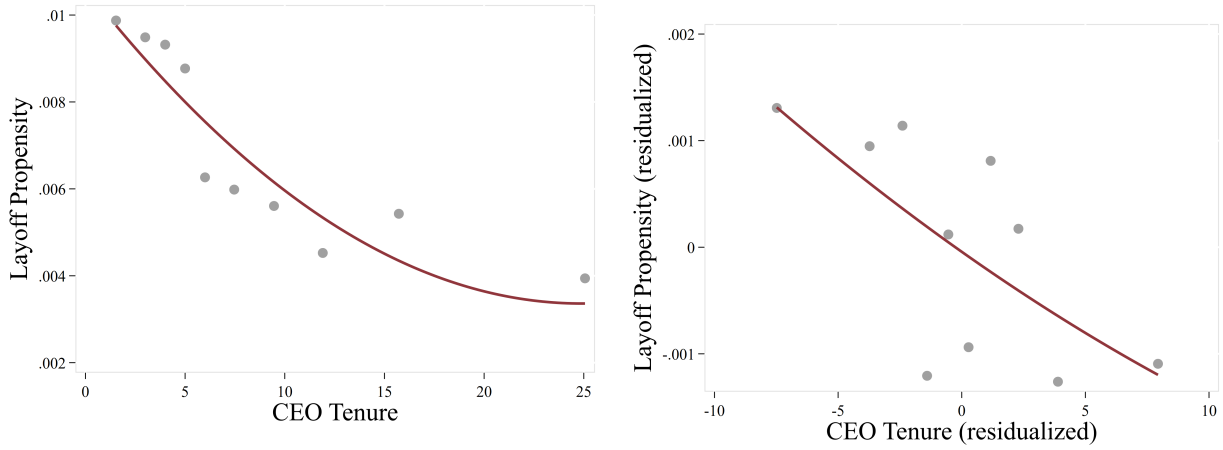


Figure 2. Layoff Propensity and CEO Tenure

The figure shows binned scatterplots of the relation between CEO tenure and layoff propensity. Panel (a) focuses on the binary layoff indicator as in Table 2. Panel (b) focuses on the fraction of employees laid off in a given year as in Table 3. Figures on the left plot the raw data. Figures on the right plot the relationship after residualizing on the controls and fixed effects from Column (5) of Tables 2 and 3.

Overall, Tables 2 and 3 as well as Figure 2 find a strong association between firms' layoff propensity and the CEO's tenure, which is not explained by standard measures of firm profitability, time-invariant industry or firm effects, time trends, and additional measures such as firm size and CFO tenure. We conjecture that the residual relation between layoffs and CEO tenure arises from CEOs becoming increasingly reluctant to implement layoffs as they make more connections inside the firm over time, and identify themselves more with the workforce.

3.2 Robustness and Extensions

Additional Controls. As a first robustness check, we extend our previous set of control variables with measures of physical or human capital investment opportunities, to address potential concerns that CEO tenure and layoffs may be correlated with these variables. We consider two measures of capital productivity: lagged market-to-book ratio (Jovanovic and Rousseau 2002) and a more complex definition of Q from Livdan and Nezlobin (2021). As a measure of worker productivity, we use lagged net employment growth, based on Bilal, Engbom, Mongey, and Violante (2022). More details about the calculation of these variables are contained in Appendix Section II.4.

Internet Appendix Table IA.1 presents the results when including these additional control variables. Columns (1) and (2) replicate Column (2) of Table 2, augmented with the employment growth and market-to-book ratio or Q measures. Similarly, Columns (3) and (4) replicate Column (3) of Table 2. We find that, as expected, firms with higher labor and capital productivity are less likely to implement layoffs. At the same time, the size and statistical significance of the coefficient on CEO tenure remains unaffected with the additional controls. Thus, measures of the marginal products of labor and capital, closely related to investment opportunities, do not appear to affect or drive our results.

Fixed CEO Differences? One possibility is that the results in Table 2 are due to fixed CEO differences in the propensity to lay off workers, with short-tenured CEOs (in the sense of CEOs with a short *total* tenure) being more layoff-prone, and long-tenured CEOs being less layoff-prone independent of the cumulated tenure up to a certain point.

We investigate this possibility in Figure IA.1 of the Internet Appendix. Similar to Panel a of Figure 2, we plot layoff probabilities by CEO tenure, but split the sample into three

subgroups based on CEO's overall tenure length with the firm (short overall tenure of up to five years, medium tenure up to ten years, and long tenure of more than ten years). This split results in comparable subsample sizes in terms of the number of CEOs in each group ($N = 1,519$, $N = 1,549$, and $N = 1,839$, respectively).

Inconsistent with the idea of fixed CEO differences, we observe similar layoff patterns over CEOs' tenure cycle across the three subgroups. The finding of a within-tenure effect even for long-tenured CEOs is supported in additional unreported tests, in which we interact the main effect of CEO tenure from Table 2 with indicator variables for CEO subgroups based on overall tenure length, and continue to find strong tenure effects for long-tenured CEOs that are of similar economic magnitude as those reported in Table 2.

IV Approach. To further account for average tenure effects and to isolate effects arising *through* the tenure of CEOs, we follow Graham, Kim, and Leary (2020) and Altonji and Shakotko (1987) and also implement an instrumental variables (IV) approach as follows. As these authors note, it is not possible to include CEO-firm-pair fixed effects in the estimation in Table 2, since tenure and year fixed are collinear within a CEO-firm pair. Instead, we implement their proposed IV approach and use a CEO's *proportion* of overall tenure realized as an instrument for cumulated tenure up to that point. Specifically, we use $CEOTenureProp \equiv (Tenure_{i,j,t} - \overline{Tenure_{i,j}}) / \max Tenure_{i,j,t}$ as the instrument for CEO tenure, $Tenure_{i,j,t}$. Intuitively, this instrument purges the estimation of differences in average tenure across CEO-firm pairs.

Table 4 shows the results of this IV approach, implementing the two-stage versions of Columns (2) and (3) of Table 2, i.e., the specifications with either industry and location fixed effects or with firm fixed effects. Unsurprisingly, for both specifications, the first stage relation between CEO tenure and tenure proportion is strong, with the F-statistic well above 10. Additionally, in both specifications, the coefficient on instrumented CEO tenure is strongly negative, and similar to magnitude to the coefficients found in Table 2. These results lend additional support to the idea that the documented layoff–CEO tenure relation is not simply driven by cross-CEO differences.

Exogenous CEO Changes. Finally, we exploit CEO death or illness events that cause an exogenous, abrupt decrease in CEO tenure. We merge the new open-source database of CEO turnover and dismissal by Gentry, Harrison, Quigley, and Boivie (2021), which contains classifications for CEO turnover, with our Execucomp dataset. We identify a total

Table 4. Layoffs and CEO Tenure—IV Approach

The dependent variable is an indicator variable that equals one if a firm makes at least one layoff announcement in a given year and zero otherwise. Data on layoffs hand-coded using S&P Key Developments data. CEO tenure based on Execucomp data, winsorized and divided by 100 in the regressions for ease of exposition. Firm size and profitability measures from Compustat data. Firm profitability is defined as operating income before depreciation divided by assets and is winsorized. Firm characteristics are lagged. Industry classification is at the SIC3 level using data from Compustat. Industry distress uses CRSP stock data and is defined as a 30% drop in median firm stock-price over the following two years in an industry. Standard errors, clustered by industry, are shown in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

	1st Stage	2nd Stage	1st Stage	2nd Stage
	(1)	(2)	(3)	(4)
CEO Tenure Proportion	0.134^{***}		0.140^{***}	
	(0.003)		(0.002)	
CEO $\widehat{\text{Tenure}}$ / 100		-0.218^{***}		-0.260^{***}
		(0.069)		(0.071)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	No	No
Industry FE	Yes	Yes	No	No
Firm FE	No	No	Yes	Yes
Observations	34,628	34,628	34,513	34,513

of 100 CEOs in our dataset whose departure is driven by death or illness.[9]

We then implement a *stacked difference-in-differences* analysis, similar to Gormley and Matsa (2011), to estimate the effect of an exogenous decrease in CEO tenure on firms' layoff propensity. Specifically, for each year with an exogenous CEO change due to death or illness, we construct a cohort of treated firms and untreated firms in the same Fama and French (1997) 48 industry. We follow these cohorts for the five years before and after the CEO death or illness, and exclude the event year itself as it is not clear whether to ascribe layoffs to the incumbent or new CEO in that year. We either restrict to the first new CEO after the CEO change or analyze the full five post years, as indicated below. As in Gormley and Matsa (2011), we do not require firms to be in the data for all ten years around the event year. We then aggregate the cohort-event-time data across cohorts into one panel

[9] The average reduction in tenure resulting from these departing CEOs due to death or illness and the appointment of a new CEO is seven years in our data.

and estimate the following regression:

$$\begin{aligned} Layoff_{j,k,c,t} = \alpha + \alpha_{k,c} + \alpha_{c,t} + \beta_1 \, ExogCEOChange_{j,k,c} \\ + \beta_2 \, ExogCEOChange_{j,k,c} \times Post_{c,t} + \varepsilon_{j,k,c,t} \end{aligned} \tag{2}$$

where, similar to Equation (1), $Layoff_{j,k,c,t}$ is an indicator variable that equals one if firm j which is in industry k and a member of cohort c makes a layoff announcement in year t and zero otherwise. $ExogCEOChange_{j,k,c}$ identifies treated firms with an exogenous death- or illness-driven CEO departure. $Post_{c,t}$ identifies post-treatment years. To reduce the residual variance and improve precision, we also include the control variables from Table 2, and allow coefficients on the controls to vary between the pre- and post-period (Angrist and Pischke 2009). $\alpha_{k,c}$ are cohort-SIC3-industry fixed effects that account for time-invariant, within-cohort differences between industries. $\alpha_{c,t}$ are cohort-year fixed effects that control for time trends. (Note that as a result, the $Post_{c,t}$ indicator is absorbed.)

Figure 3 presents the stacked difference-in-differences results graphically, slightly modifying Equation (2) by allowing for time-varying coefficients on the interaction term of interest (β_2). The coefficients in the figure depict the change in layoff propensity relative to five years pre-event for treated firms relative to control firms. We estimate an increase in layoff probability of around six percentage points following an exogenous decrease in CEO tenure. This estimated magnitude is sizable but still plausible, recalling the sample-wide layoff probability of 17% (see Table 1). Internet Appendix Table IA.2 contains the table version corresponding to Equation (2) and Figure 3. Column (1) restricts to post-years of the first newly appointed CEO (as does Figure 3). Column (2) includes the full five post-years irrespective of additional CEO changes. The results are similar in both cases.

Overall, the results exploiting exogenous changes to CEO tenure from death and illness events corroborate the interpretation of a link that exists from CEO tenure to layoff propensity.

3.3 Mechanisms

CEO Power, Co-Opted Directors, and Empire Building. We first explore whether these results on reduced layoff propensity with increased CEO tenure are simply the result of increasing power of a CEO over their tenure, combined with a general CEO preference

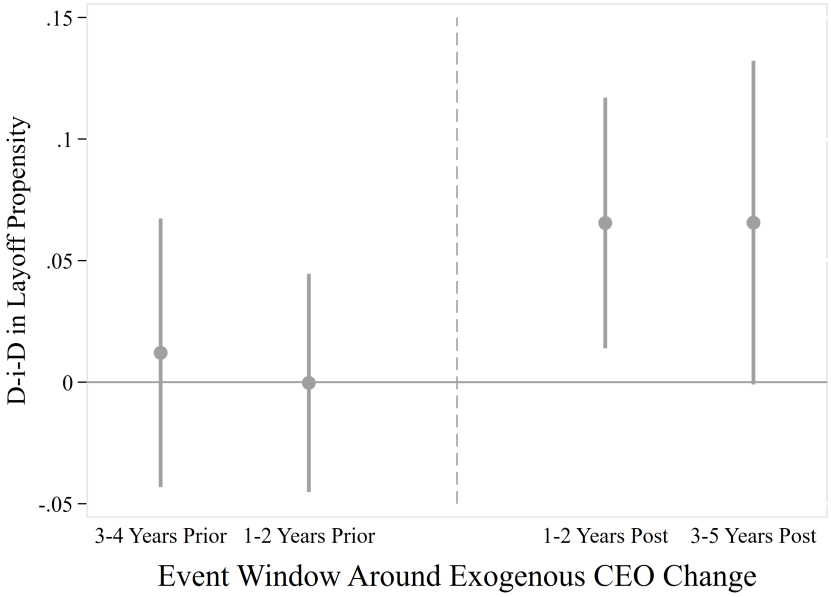


Figure 3. Layoff Probability Around Exogenous CEO Changes

The figure plots the change in layoff probability around exogenous CEO departures relative to non-treated firms (stacked difference-in-differences analysis; see Equation (2)). Exogenous CEO changes are defined as those occuring due to CEO death or illness of the incumbent CEO and come from Gentry, Harrison, Quigley, and Boivie (2021). See the text in Section 3.2 for additional details. The figure also plots 95% confidence intervals based on standard errors clustered at the industry level.

for empire building and large firms (the latter implying a dispreference for size-reducing layoffs). Pan, Wang, and Weisbach (2016) find that with respect to firm investment in capital expenditures and acquisitions, the positive effect of CEO tenure on investment is largely picked up by controls for CEO power, in particular the fraction of the board appointed by the incumbent CEO.

Motivating the CEO power channel, directors appointed during a CEO's tenure have been picked, at least to some extent, under the CEO's influence, which empire-desiring CEOs may be able to increasingly use to their advantage over their tenure. This idea was first formalized in Hermalin and Weisbach (1998). Coles, Daniel, and Naveen (2014) denote directors appointed during a CEOs tenure as "co-opted" and show that when boards have a higher percentage of co-opted directors oversight decreases and investment increases.

To test the possibility of a mechanism related to CEO power in combination with empire building, we construct a measure of the percent of new directors during a CEO's tenure using data from the Institutional Shareholder Services (ISS). The ISS data covers S&P 1500 firms since 1996 (robustly since 1998) and includes the directors in each year for each firm and the year they became a director.[10] Together with Execucomp, which includes the year the CEO was appointed, we calculate the percent of new directors for each CEO-firm-year as the percent of directors observed in a given year appointed in the years after the CEO was appointed divided by the total number of directors observed in the given year.

In Table 5, we perform "horse race" regressions, as done in the investment rate regressions in Pan, Wang, and Weisbach (2016), with both CEO tenure and percent of co-opted directors as independent variables. As noted in this prior work, CEO tenure and fraction of co-opted directors are by construction highly correlated. The first two columns in Table 5 include industry and location fixed effects, the latter two include firm fixed effects. In Columns (1) and (3), we include only the new CEO power variable, the percent of co-opted directors, without including CEO tenure. In this case, we observe a negative link with layoff probability, implying that increasing CEO power could indeed drive the findings. However, when we include both CEO tenure and fraction of co-opted directors in Columns (2) and (4), it is the CEO tenure effect that dominates and retains its sign and economic magnitude. For example, controlling for the fraction of co-opted CEOs in Column (4) with firm fixed effects, an interquartile increase in CEO tenure is associated with a 13% reduction in layoff probability relative to the base rate.

In sum, the fact that the CEO tenure effect remains stable with the added board co-option measure implies that increasing CEO power of empire-desiring CEOs is unlikely to be a primary mechanism of the previous findings.[11]

[10] As with the Execucomp data, if no year is listed for the director's first year we use their first in the data as the start year of their directorship. We also rely on the process of Coles, Daniel, and Naveen (2014) to match the ISS data between the current and legacy samples.

[11] This conclusion is bolstered by further tests (unreported) in which we study the relationship between layoff propensity and CEO tenure *within* different levels of board co-option (similar to the approaches in Table 6 and Internet Appendix Table IA.3 in the contexts of CEO entrenchment and compensation). We find economically sizable tenure effects within different levels of board co-option. For example, with firm fixed effects, an interquartile shift in tenure is estimated to reduce layoff propensity by 8.4% within firm-years in the bottom quartile of the board co-option distribution, which is almost identical to the reduction of 8.8% (8.9%) that we estimate within firm-years in the top quartile (decile) of the distribution.

Table 5. Layoffs and CEO Tenure—CEO Power

The dependent variable is an indicator variable that equals one if a firm makes at least one layoff announcement in a given year and zero otherwise. Data on layoffs hand-coded using S&P Key Developments data. CEO tenure based on Execucomp data, winsorized and divided by 100 in the regressions for ease of exposition. Firm size and profitability measures from Compustat data. Firm profitability is defined as operating income before depreciation divided by assets and is winsorized. Firm characteristics are lagged. Industry classification is at the SIC3 level using data from Compustat. Industry distress uses CRSP stock data and is defined as a 30% drop in median firm stock-price over the following two years in an industry. % of new directors is calculated using ISS data and Execucomp data as the percent of directors appointed in the years following the CEOs appointment. Standard errors, clustered by industry, are shown in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

	(1)	(2)	(3)	(4)
CEO Tenure / 100		-0.451^{***}		-0.272^{***}
		(0.062)		(0.082)
% of New Directors	-0.033^{***}	0.049^{***}	-0.011	0.032^{*}
	(0.009)	(0.015)	(0.011)	(0.019)
Industry Distress (Lag 1&2)	0.049^{***}	0.050^{***}	0.044^{***}	0.044^{***}
	(0.013)	(0.013)	(0.014)	(0.014)
Firm Size (Ln Assets)	0.049^{***}	0.047^{***}	0.037^{***}	0.038^{***}
	(0.006)	(0.006)	(0.012)	(0.012)
Firm Size (Ln Employees)	0.042^{***}	0.044^{***}	0.079^{***}	0.081^{***}
	(0.006)	(0.006)	(0.014)	(0.014)
Firm Profitability	-0.353^{***}	-0.351^{***}	-0.315^{***}	-0.313^{***}
	(0.054)	(0.056)	(0.061)	(0.061)
CFO Tenure / 100				
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	No	No
Industry FE	Yes	Yes	No	No
Firm FE	No	No	Yes	Yes
Observations	23,623	23,623	23,428	23,428

CEO Entrenchment. Second, we explore whether reduced layoff propensity with increased CEO tenure is a manifestation of classical CEO entrenchment. Motivating this hypothesis, increasingly entrenched CEOs in poorly-governed firms are likely to become less at risk of being fired over time. In turn, these CEOs might shy away from difficult decisions such as layoffs (e.g., Bertrand and Mullainathan 2003).

To investigate the influence of entrenchment, we supplement our dataset with the entrenchment index (E-index), proposed by Bebchuk, Cohen, and Ferrell (2009), which emphasizes six key governance provisions capturing entrenchment. These six provisions are: staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes, and supermajority requirements for mergers and charter amendments. Their primary source of data was the Investor Responsibility Research Center (IRRC); however, after 2006 the IRRC stopped producing this data. Since 2007, similar governance data has been collected by the ISS, but they do not produce measures for supermajority requirements for mergers or charter amendments. We also find substantial discontinuity in these four variables between the IRRC and ISS classifications. Therefore, for consistency, we construct a partial E-index only using the IRRC data for the four available variables. The index ranges from 0 to 4 and increases by one for each "good governance" provision. This additional control variable only covers approximately two-thirds of our observations from our main analysis. Because corporate governance provisions can change over time, there is both cross-sectional and within-firm variation in the E-index. We then analyze how the relationship between layoff propensity and CEO tenure varies with the level of entrenchment as gauged by the E-index.

Table 6 shows the results, building on our previous results from Table 2. We first focus on low entrenchment (defined as E-index ≤ 2) versus high entrenchment (E-index > 2). This simple split identifies about 25% of CEO-firm-years as low entrenchment years, and the remaining 75% as high entrenchment years. As revealed in Columns (1) and (2), which as before include either industry and location or firm fixed effects, the effect of CEO tenure on layoff propensity is *not* confined to CEO-years in the high entrenchment regime. Instead, the layoff–CEO tenure association is pronounced in both entrenchment regimes, and the magnitudes are similar in both regimes, as well as similar to the magnitudes estimated in Table 2. These patterns are unchanged in Columns (3) and (4), which split the high-entrenchment subsample further up into two separate categories (E-index $= 3$, approx. 67% of CEO-firm-years) (E-index $= 4$, approx. 7.5% of CEO-firm-years). In both columns, the effect of CEO tenure on layoff propensity is similarly pronounced in the highest-entrenchment regime as it is in the medium- and low-entrenchment regimes.[12]

[12] Table 6 provides modest support for a *level* effect of entrenchment on layoff propensity. In the specifications with industry and location fixed effects, high entrenchment is associate with lower layoff rates on

Table 6. Layoffs and CEO Tenure—CEO Entrenchment

The dependent variable is an indicator variable that equals one if a firm makes at least one layoff announcement in a given year and zero otherwise. Data for the E-index comes from the ISS and is defined as the count of four key governance provisions (staggered boards, limits to shareholder bylaw amendments, poison pills, and golden parachutes) which the firm has implemented. Data on layoffs hand-coded using S&P Key Developments data. CEO tenure based on Execucomp data, winsorized and divided by 100 in the regressions for ease of exposition. Firm size and profitability measures from Compustat data. Firm profitability is defined as operating income before depreciation divided by assets and is winsorized. Firm characteristics are lagged. Industry classification is at the SIC3 level using data from Compustat. Industry distress uses CRSP stock data and is defined as a 30% drop in median firm stock-price over the following two years in an industry. Standard errors, clustered by industry, are shown in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

	(1)	(2)	(3)	(4)
CEO Tenure / 100 × E-Index ≤ 2	−0.399***	−0.254***	−0.398***	−0.252***
	(0.061)	(0.066)	(0.061)	(0.066)
CEO Tenure / 100 × E-Index > 2	−0.190***	−0.184***		
	(0.045)	(0.050)		
CEO Tenure / 100 × E-Index = 3			−0.177***	−0.176***
			(0.047)	(0.054)
CEO Tenure / 100 × E-Index = 4			−0.292***	−0.254**
			(0.108)	(0.122)
E-Index > 2	−0.021**	0.001		
	(0.010)	(0.011)		
E-Index = 3			−0.021*	0.001
			(0.011)	(0.011)
E-Index = 4			−0.026	−0.008
			(0.017)	(0.020)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	No	Yes	No
Industry FE	Yes	No	Yes	No
Firm FE	No	Yes	No	Yes
Observations	23,246	23,168	23,246	23,168

Overall, the evidence in Table 6 does not support classical entrenchment as being a primary driver of the previous findings. This conclusion is backed by further tests in Appendix Table IA.3, where we use CEO pay as an alternative entrenchment proxy in light

average, though these differences largely disappear in the specifications with firm fixed effects.

of a large prior literature documenting that entrenched CEOs receive higher pay.[13] We find that there exists a robust layoff–tenure relation across CEO pay quantiles. From Appendix Table IA.3, the relation is potentially slightly weaker for CEOs in the bottom 25% of the pay distribution, though it is still economically meaningful. (Also, in further unreported tests, we find that the layoff–tenure relation is in fact larger for the bottom 10% than, e.g., the next 10% of the pay distribution.) In any case, the fact that the layoff–tenure relation is not confined to CEOs who extract the highest rents via pay supports the conclusion that CEO entrenchment as a sole mechanism does not suffice to explain the findings in Tables 2 and 4.

An alternative hypothesis is that CEOs become more empathetic rather than entrenched as they accumulate more years at the helm of the firm. We investigate this alternative hypothesis further below. This focus on CEO social preferences as an underlying explanation further differentiates our analyses pertaining to the CEO tenure–layoff link from Pan, Wang, and Weisbach (2016), who instead focus on more traditional agency explanations and CEO power.

Social Factors—Geographic Proximity. If social factors increasingly become a topic of consideration for layoff decisions as CEOs' tenure increases, we might expect social preferences to vary with the geographic proximity of layoff locations. In line with geography-based differences in social preferences, Landier, Nair, and Wulf (2009) find that firms are less likely to implement layoffs in divisions that are located closer to the headquarters (HQ). Landier, Nair, and Wulf (2009) do, however, not examine how the geographic layoff propensity varies with CEO tenure, nor do they study any other managerial characteristics.[14]

In Table 7, we make use of geographic details in our layoff dataset and investigate how CEO tenure affects the geography of layoffs.

First, Column (1) shows that CEO tenure is not solely related to a firm's propensity to implement a layoff, but also a layoff in the state of the firm's HQ. An interquartile increase in tenure reduces the likelihood of a HQ-state layoff by 0.5 percentage points, or 13%

[13] See, e.g., Bertrand and Mullainathan (1998), Bertrand and Mullainathan (2001), and the discussion in Cronqvist, Heyman, Nilsson, Svaleryd, and Vlachos (2009).

[14] Furthermore, Landier, Nair, and Wulf (2009) do not have actual layoff data, and measure layoffs only indirectly as a decrease in the number of employees in a given division.

Table 7. Layoffs and CEO Tenure—Geographic Proximity of Layoffs

The dependent variables are indicator variables that equal one if a firm makes at least one layoff announcement at the respective geographic level in a given year and zero otherwise. Data on layoffs and their locations hand-coded using S&P Key Developments data. Layoffs without a location noted in the description are included as out-of-state/out-of-city. CEO tenure based on Execucomp data, winsorized and divided by 100 in the regressions for ease of exposition. Firm size and profitability measures from Compustat data. Firm profitability is defined as operating income before depreciation divided by assets and is winsorized. Firm characteristics are lagged. Industry classification is at the SIC3 level using data from Compustat. Industry distress uses CRSP stock data and is defined as a 30% drop in median firm stock-price over the following two years in an industry. Standard errors, clustered by industry, are shown in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

	HQ-State Layoff		HQ-City Layoff		
	(1)	(2)	(3)	(4)	(5)
CEO Tenure / 100	-0.068^{***}	-0.037	-0.044^{***}	-0.127	-0.614^{**}
	(0.016)	(0.127)	(0.012)	(0.079)	(0.302)
Industry Distress (Lag 1&2)	0.011^{*}	0.019	0.009^{**}	0.021^{*}	0.052
	(0.006)	(0.017)	(0.004)	(0.012)	(0.043)
Firm Size (Ln Assets)	0.015^{***}	0.025^{*}	0.008^{***}	0.023^{**}	0.047^{*}
	(0.003)	(0.013)	(0.002)	(0.010)	(0.028)
Firm Size (Ln Employees)	0.009^{***}	-0.001	0.003^{**}	-0.010	-0.046
	(0.002)	(0.014)	(0.001)	(0.009)	(0.034)
Firm Profitability	-0.090^{***}	-0.074	-0.043^{***}	-0.050	0.042
	(0.019)	(0.089)	(0.010)	(0.050)	(0.212)
Sample	Full	Layoff-Years	Full	Layoff-Years	HQ-State Layoff-Years
Year FE	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Observations	34,628	5,780	34,628	5,780	1,384

relative to the baseline probability of a HQ-state layoff of 4%. However, as Column (2) reveals, conditional on a firm making layoffs in a given year, longer CEO tenure is not associated with geographic differences in layoff location at the state level.

The remaining columns of Table 7 increase the level of "layoff closeness" and focus on layoff propensity in the same city as the corporate HQ. Column (3) shows that unconditionally, longer CEO tenure associated with fewer HQ-city layoffs. Here, an interquartile tenure increase is associated with a 0.35 percentage point reduction in same-city HQ, or 19% relative to the baseline probability of just 1.8%. Columns (4) and (5) show that HQ-city layoffs are less likely with increasing tenure also conditionally, i.e., conditional on the CEO-firm-year being a year with layoffs (Column (4)) or a year with HQ-state layoffs (Column (5)). In Column (4), we note that the tenure coefficient is marginally statistically insignificant (p-value of 0.11), even though the point estimate implies a substantial economic effect size. Conditional on a layoff-year, an interquartile tenure increase is associated with a 1 percentage point reduction in layoff propensity, or 9.5% relative to the baseline conditional probability of a HQ-city layoff of 11%. In the most narrow layoff closeness specification in Column (5), the tenure coefficient is strongly significant at the 1% level and also large in terms of economic magnitudes. Here, conditional on a layoff-year occurring in the HQ-state, an interquartile tenure increase is associated with a 5.2 percentage point reduction in layoff propensity, or 11.7% relative to the baseline conditional probability of a HQ-city layoff of 44%.[15]

Overall, these results are consistent with an interpretation revolving around social considerations of CEOs with increasing tenure, and a resulting increasing distaste for layoffs happening in the immediate vicinity of the CEO and the firm's HQ.[16]

Social Factors—Layoffs Around Holiday Season. If social considerations are one mechanism underlying the relationship between layoff propensity and CEO tenure, we might also expect longer-serving CEOs increasing their efforts to avoid layoffs during certain times of the year, in particular right before and during the holiday season.[17] We

[15] All columns in Table 7 include industry and location fixed effects. We estimate similar economic magnitudes when we include firm fixed effects instead, though we lose power in the conditional specifications in Columns (2), (4), and (5).

[16] Anecdotal evidence from the practitioners-oriented book by Martin (2005) referenced in Section 1 supports the view that "distance matters," with one respondent saying "[a]lways, the most difficult decisions are those that affect families of people that have become friends."

[17] Hallock (2005), who as described in Section 1 also conducts interviews with U.S. executives (CEOs,

observe in the data that December is, *in general*, the month with the lowest probability of firms announcing a layoff (see Figure IA.2 of the Internet Appendix).

We explore the conjecture regarding "December layoffs" and CEO tenure in Table 8 and find strong support for it. In Columns (1) and (2), we first examine how the unconditional probability of a December layoff depends on the CEO's accumulated tenure. The results are similar with and without firm fixed effects, and imply a reduction in the probability of a December layoff of around 0.5 percentage points for an interquartile tenure shift, which is 25% of the baseline unconditional probability. In Columns (3) and (4), we examine how the occurrence of December layoffs varies with CEO tenure conditional on the firm announcing a layoff in a given year. Here, an interquartile tenure increase is estimated to lower the inclination of a December layoff by about 2.7 percentage points, or 23% relative to the conditional baseline probability.[18]

In Table IA.4 of the Internet Appendix, we repeat the conditional regressions from Columns (3) and (4) when extending the "layoff year window." We include, in addition, CEO-firm-years with a layoff in the first quarter, or first and second quarter, of the subsequent year, thus taking into account both forward and backward layoff timing. The results in these extended conditional regressions are very similar to those in Table 8.

Social Factors—Internally Versus Externally Hired CEO. We have also investigated the effect of the CEO being hired internally or externally. One data limitation is that the variable JOINED_CO in Execucomp to identify when a given CEO joined the firm (in any position) is oftentimes missing (cf. Landier, Sauvagnat, Sraer, and Thesmar 2013). This results in a more than two-third reduction in sample size in this analysis. In line with CEO social considerations playing a role in layoff decisions, we find evidence consistent with internal CEOs, who likely have more relationships inside the firm, being less layoff prone on average. We find, however, no evidence that the effect of tenure in the CEO position on layoff rates depends on whether the CEO was promoted internally or hired externally. We report these results in Table IA.5 of the Internet Appendix.

CFOs, VPs of Human Resources, etc.), highlights one response by a senior manager who "didn't want to have layoffs in December for emotional reasons...[not] at Christmas."

[18] 2.7 percentage points is the approximate midpoint of the estimates in Columns (3) and (4).

Table 8. Layoffs and CEO Tenure—Layoffs Around Holiday Season (December)

The dependent variable is equal to one for years with a layoff in December and zero otherwise. Data on layoffs hand-coded using S&P Key Developments data. CEO tenure based on Execucomp data, winsorized and divided by 100 in the regressions for ease of exposition. Firm size and profitability measures from Compustat data. Firm profitability is defined as operating income before depreciation divided by assets and is winsorized. Firm characteristics are lagged. Industry classification is at the SIC3 level using data from Compustat. Industry distress uses CRSP stock data and is defined as a 30% drop in median firm stock-price over the following two years in an industry. Standard errors, clustered by industry, are shown in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

	Full Sample		Layoff-Years	
	(1)	(2)	(3)	(4)
CEO Tenure / 100	-0.057^{***}	-0.063^{***}	-0.297^{***}	-0.379^{**}
	(0.008)	(0.017)	(0.068)	(0.154)
Industry Distress (Lag 1&2)	0.006^{*}	0.006	0.015	0.038^{*}
	(0.003)	(0.004)	(0.014)	(0.020)
Firm Size (Ln Assets)	0.008^{***}	0.004^{*}	0.012	0.019
	(0.002)	(0.002)	(0.010)	(0.023)
Firm Size (Ln Employees)	0.005^{***}	0.010^{***}	0.007	0.010
	(0.001)	(0.002)	(0.007)	(0.022)
Firm Profitability	-0.047^{***}	-0.028^{**}	-0.057	0.009
	(0.008)	(0.011)	(0.046)	(0.101)
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	No	Yes	No
Industry FE	Yes	No	Yes	No
Firm FE	No	Yes	No	Yes
Observations	34,628	34,513	5,780	5,252

4. Implications

We now turn to the implications of the findings from Section 3 on CEO social preferences with respect to employees and layoff decisions. We first study implications for firms and shareholder value, and then implications for CEOs. To tease out firm implications, we focus on how the market reacts to layoff announcements, building on Farber and Hallock (2009) and Landier, Nair, and Wulf (2009). To test for CEO implications, we focus on CEO health outcomes, building on Borgschulte, Guenzel, Liu, and Malmendier (2022).

4.1 Firm Implications

Market Reaction to Layoff Announcements. Table 9 presents sample-wide summary statistics for how the market reacts to layoff announcements in our data. We estimate three-day and seven-day cumulative announcement returns using daily stock data and market returns from CRSP as the benchmark return.[19] We find that the average market reaction to layoffs is slightly negative (-0.3% over three days and -0.035% over seven days), both of which are statistically different from zero. A slight negative reaction on average is consistent with most of prior papers focusing on short-term stock price reactions (see, e.g., Worrell, Davidson III, and Sharma 1991, Iqbal and Shetty 1995, Chen, Mehrotra, Sivakumar, and Wayne 2001; see also Farber and Hallock 2009, in particular their Table 1).

Table 9. Market Reaction to Layoff Announcements

Stock data from CRSP Daily Extract. Market return from daily CRSP Stock File Indexes built on NYSE, AMEX, NASDAQ, and ARCA market cap. Each observation requires at least two of three days have data for the three-day window and four days of data for the seven-day window. Announcement returns are winsorized.

	N	Mean	SD	25%-ile	Median	75%-ile
CAR $[-1, +1]$	11645	-0.0030	0.0587	-0.0224	-0.0015	0.0186
CAR $[-3, +3]$	11645	-0.0035	0.0829	-0.0346	-0.0019	0.0293

However, there is substantial heterogeneity in how layoffs are perceived by investors. One in four layoff announcements comes with an announcement return of lower than -2%, whereas about the same fraction of layoff announcements results in an announcement return of $+2\%$ or more. This heterogeneity in layoff announcement returns also relates to the fact that some other work has found more positive average announcement returns, albeit often for longer event windows or focusing on slightly other events, in particular divestitures (see, e.g., Rosenfeld 1984, Klein 1986, Landier, Nair, and Wulf 2009, and Mace 2020).

Predictors of Layoff Announcement Returns. Despite the substantial heterogeneity in the direction and magnitude layoff announcement returns, we find that observables

[19] Market returns are based on the total market cap of the NYSE, AMEX, NASDAQ, and ARCA exchanges. We require at least two of three days have data for the three-day window and four days of data for the seven-day window. Days refer to trading days, not calendar days.

explain only a small share of the variation in returns. In Internet Appendix Table IA.6, we regress the seven-day announcement return on all variables (CEO tenure, industry distress, log assets, log employees, and firm profitability) and fixed effects from Table 2. None of the variables is significantly related to announcement returns, except for profitability in the specification with firm fixed effects, and the adjusted R-squared is low as well. Thus, it is difficult to deduce much from this approach.

Layoff Announcement Returns After Exogenous CEO Changes. Instead, we again use the sample of death-or illness-driven CEO changes to study how exogenous changes in tenure affect the type of layoff as gauged by the market's reaction. Figure 4 plots average layoff announcement returns for the difference-in-differences sample from Section 3.2 in the five-year post-period, for three groups: control firms (i.e., firms with no exogenous CEO change), treated firms when the exogenously removed CEO made no layoffs in the pre-period, and treated firms when the exogenously removed CEO made at least one layoff in the pre-period.

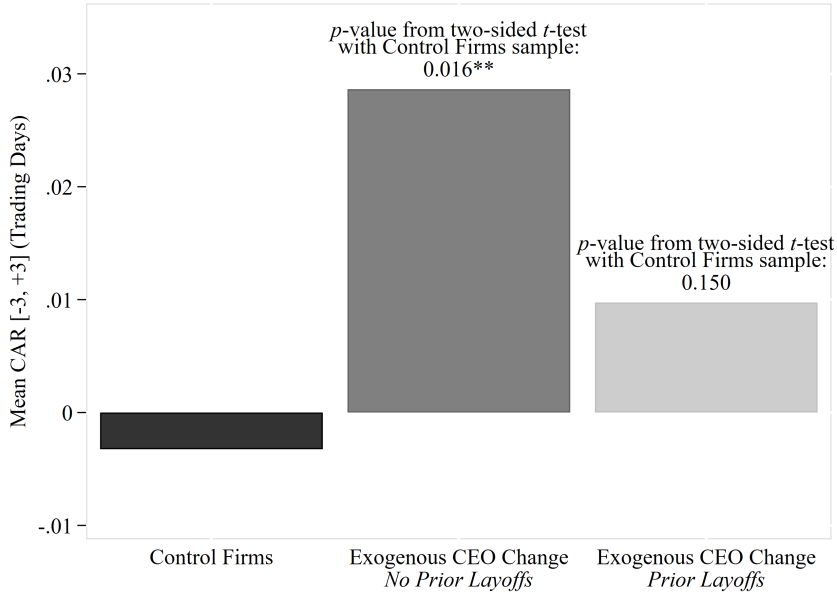


Figure 4. Layoff Announcement Returns After Exogenous CEO Changes

Layoff announcements in the post-period period by control firms trigger a slight

negative market reaction on average (CAR $= -0.33\%$), similar to the overall sample mean in Table 9. By contrast, layoff announcements by treated firms experiencing an exogenous decrease in tenure trigger a pronounced positive reaction on average, especially when the exogenously removed CEO made no layoffs in the pre-period (CAR $= +2.86\%$). We note that some caution is due in interpreting these results given we have 100 CEOs departing due to death or illness (cf. Section 3.2), leading to sample sizes of 41 and 90 layoff announcements for the treated groups in Figure 4, respectively. Nonetheless, the difference in average layoff announcement returns between control firms and the layoff-initiating treated firms is statistically significant (p-value of 0.016).

Overall, the evidence in Figure 4 is consistent with exogenous reductions in the tenure of a firm's CEO bringing about layoff announcements that are good news for shareholders. These results suggest that reduced layoff activity by longer-tenured CEOs who become more employee-friendly is plausibly associated with significant consequences for firm and shareholder value.

4.2 CEO Implications

Recent work by Borgschulte, Guenzel, Liu, and Malmendier (2022) documents long-term adverse health outcomes of more stressful work environments for CEOs, including accelerated mortality rates for CEOs who experience industry distress while at the helm of the firm. These findings beg the question of *why* times of distress have long-lasting adverse effects on CEOs. Our results above show that one changing aspect of the CEO's job during industry distress is that firms increase their layoff activity. This raises the possibility that layoffs implemented during downturns are one underlying mechanism for the adverse distress-induced mortality effects in Borgschulte, Guenzel, Liu, and Malmendier (2022).

If social considerations play a role in layoff decisions, as our CEO tenure results provide evidence for, then layoffs are a plausible stress-inducing channel for CEOs. Anecdotal evidence and introspection suggest that layoffs during economic downturns might be particularly difficult to implement and scarring with long-term effects. For one, if CEOs have a preference for fairness, downturns may force firms to lay off employees for reasons unrelated to their performance (cf. the anecdotal evidence in footnote 5 from Section 1 on CEOs' aversion to non-performance related layoffs). Additionally, prior work has shown

that workers' job loss is generally associated with a host of adverse effects ranging from earnings losses to reductions in health care coverage and increased mortality (e.g., Sullivan and Von Wachter 2009, Olson 1992). Moreover, the long-term adverse effects of job loss are particularly severe for workers displaced during downturns compared to boom times (Jacobson, LaLonde, and Sullivan 1993).

To study the effects of layoffs on long-term CEO mortality, we intersect the CEO mortality data from Borgschulte, Guenzel, Liu, and Malmendier (2022) with the layoff data provided to us by Kevin F. Hallock, as described in more detail in Section 2.3. Similar to Borgschulte, Guenzel, Liu, and Malmendier (2022), we then estimate survival models to detect predictors of CEO mortality. Here, our key variable of interest is the experience of a layoff as CEO (i.e., during a person's tenure). In light of our discussion and anecdotal evidence above, we separate the effect of layoffs during industry distress and those during non-distressed times. We continue to use the lagged industry distress definition used in all prior analyses and the forward-looking distress definition (cf. the discussion in Section 3.1). In sum, we estimate:

$$\begin{aligned}\text{Prob}(CEODeath_{i,t}) = \alpha + \beta_1\, DistressLayoff_{i,t} + \beta_2\, NonDistressLayoff_{i,t} \\ + \gamma_1 LagIndustryDistress + \boldsymbol{X}'_{i,t}\gamma_2 + \varepsilon_{i,t}\end{aligned} \tag{3}$$

where $CEODeath_{i,t}$ is one if CEO i passes away in year t and zero otherwise, $DistressLayoff$, $NonDistressLayoff$, and $IndustryDistress$ are indicator variables for a CEO's cumulative experience of distress layoff, non-distress layoff, and industry distress, respectively. $\boldsymbol{X}$ is a vector of control variables, and we also include fixed effects as discussed further below.

In Table 10, we first estimate simple, familiar logit models with an explicit event time control.[20] As in Borgschulte, Guenzel, Liu, and Malmendier (2022), one observation corresponds to a CEO-year and we continue to follow CEOs over time after they leave the CEO position until they pass away or the censoring date is reached. In Column (1), we include our main variables of interest, distress layoff and non-distress layoff experience, as well as an indicator for lagged distress itself, the CEO's age, firm controls, and a linear year control.[21] We also include HQ state fixed effects as well as industry fixed effects. We

[20] See Efron (1988), Jenter and Kanaan (2015), and Guenzel (2021) for more details and finance applications of this approach.

[21] We include time-invariant measures of firm size (assets and employees), as of the first year that the

Table 10. Layoffs and CEO Mortality

This table shows coefficients from a logit model controlling for the passage of time (Efron 1988). Mortality and tenure data is from Borgschulte, Guenzel, Liu, and Malmendier (2022). Industry distress measure and minimum stock performance based on data from CRSP. Layoff data is from Hallock (1998), Billger and Hallock (2005), and Farber and Hallock (2009). The dependent variable is an indicator that equals one if the CEO dies in a given year. The main independent variable of interest is "Distress Layoff" which is equal to one in year t if prior to or in year t, a CEO has undertaken a layoff during industry-wide distress, defined by the lagged industry distress variable. Age is CEO age. Firm size and profitability measures from Compustat data. We include time-invariant measures of firm size (assets and employees), as of the first year that the CEO has assumed the top position. Minimum stock performance defined as the worst stock performance in any six-month period during the CEO's tenure. More details about the data are in Section 2. Standard errors, clustered at the SIC3 level, are shown in parentheses. Standard errors, clustered by industry, are shown in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

	(1)	(2)	(3)
Distress Layoff	0.294**	0.296**	0.287**
	(0.137)	(0.138)	(0.139)
Non-Distress Layoff	−0.031	−0.038	−0.052
	(0.098)	(0.098)	(0.099)
Industry Distress (Lag 1&2)	0.149	0.156	0.132
	(0.110)	(0.111)	(0.118)
Age	0.159***	0.161***	0.163***
	(0.010)	(0.010)	(0.010)
Firm Size (Ln Assets)	−0.137*	−0.134*	−0.130*
	(0.078)	(0.079)	(0.078)
Firm Size (Ln Employees)	0.064	0.061	0.067
	(0.074)	(0.075)	(0.075)
Firm Profitability	0.669	0.628	0.808
	(0.688)	(0.697)	(0.728)
Year	0.009		
	(0.009)		
Minimum Stock Performance			−0.326
			(0.349)
Year FE	No	Yes	Yes
State FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	31,917	31,917	31,917

find no evidence for mortality effects associated with layoffs during non-distressed times, with the coefficient estimate being slightly negative (indicating more beneficial survival patterns) but insignificant. By contrast, we find a significant adverse effect of distress layoff experience on mortality, consistent with such layoff experiences leaving marks. The coefficient estimate of $+0.294$, significant at 5%, implies that the mortality effect of distress layoff experience corresponds to that of an increase in age by 1.85 years. This effect is large but of the same magnitude as the mortality effects associated with more stressful job environments documented in Borgschulte, Guenzel, Liu, and Malmendier (2022). In Column (2), we replace the linear year control with year fixed effects, which makes no difference in the estimation.

One potential confound for the analysis and interpretation of Columns (1) and (2) is that layoff events may simply be a proxy for distress experience that is *generally* worse. In other words, one might be worried about an omitted variable related to industry distress that drives both distress layoffs and mortality. To alleviate this concern, in Column (3), we control for the worst stock performance in any six-month period during the CEO's tenure (up to each given CEO-year). Intuitively, this variable captures the severity of (endogenous) firm distress over the course of a CEO's tenure, and introduces variation in "CEO experience" holding fixed whether a CEO has experienced industry distress. With the addition of the minimum stock performance control, we estimate a distress layoff effect on mortality corresponding to a 1.76-year increase in age. That is, the coefficient of interest on distress layoff experience is barely affected. This suggests that our results are not driven simply by "bad distress" but specifically the effect of distress-induced layoffs.

Robustness. We include several robustness tests in the Internet Appendix. First, we repeat our logit estimations in Table 10 using Cox (1972) hazard models instead. As to be expected given the close link between logit models (with an explicit time control) and hazard models, we find very similar results for the hazard models (Internet Appendix Table IA.7).

Second, in Internet Appendix Tables IA.8 and IA.9, we repeat the logit and the hazard models adding a control for CEOs' cumulative tenure, in light of our results in Section 3 that longer tenured CEOs are less likely to initiate layoffs. We omit the CEO tenure control in

CEO has assumed the top position. Our results are robust to using time-varying firm size controls, though we prefer the time-invariant versions given that layoffs presumably affect firm size.

our preferred specification, in line with Borgschulte, Guenzel, Liu, and Malmendier (2022), since distress (and layoff) experience may themselves affect tenure length. In practice, adding CEO tenure as a control makes little difference. Longer tenure is associated with decreased mortality, suggesting that healthy, resilient CEOs select into serving as CEO for longer. At the same time, we continue to estimate adverse mortality effects of layoff distress exposure of very similar magnitude as before, as well as an insignificant effect of non-distress layoff experience on mortality rates.

5. Conclusion

This paper examines the impact of CEOs' social preferences on firms' labor adjustment choices. Building on prior work by Pan, Wang, and Weisbach (2016), we find a robust negative relationship between CEO tenure and layoffs. We then document that the tenure–layoff link is amplified when we expect social considerations to matter more. With increasing tenure, layoff aversion is particularly strong with respect to layoffs during the holiday season and those closer to headquarters. By contrast, our results are not explained by increasing control over the board of longer-tenured, empire-desiring CEOs, as well as by measures of CEO entrenchment.

We also explore the implications of these findings, both for firms (and shareholders) as well as CEOs themselves. We find some evidence that reduced layoff activity by longer-tenured CEOs is costly for shareholders. After an exogenous decrease in CEO tenure (due to death- or illness-driven departure of the incumbent CEO), layoff announcement returns for layoff-initiating firms are significantly higher, with an average announcement return of $+2.9\%$ compared to a sample-wide average return of -0.35%. We find less rosy implications for CEOs. Studying in-office and post-departure mortality rates, we find that layoffs induced by industry-wide crisis shocks significantly shorten CEO life expectancy. The distress-layoff–mortality results are robust to controlling for (endogenous) firm performance over the course of a CEO's tenure.

Our findings suggest several avenues for further investigation. Further research may analyze the types of employees accumulated before a layoff, the types of workers laid off, as well as these workers' subsequent career paths, e.g., using matched employer-employee data. Exploring heterogeneity in employee types would further speak to the nature of

CEOs' managerial and social preferences. Additionally, our findings have new corporate governance implications. Along similar lines as Cheng, Hong, and Shue (2013), our results suggest that *if* the aim is to maximize shareholder value, a broad range of activities need to monitored. Monitoring activities should, of course, be concerned with traditional CEO pet projects and perks (see, e.g., Yermack 2006, Décaire and Sosyura 2022), but may also need to extend to decisions that are influenced by managers' social preferences.

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Internet Appendix

CEOs and Layoffs

Marius Guenzel Clint Hamilton Ulrike Malmendier

I. Additional Figures and Tables

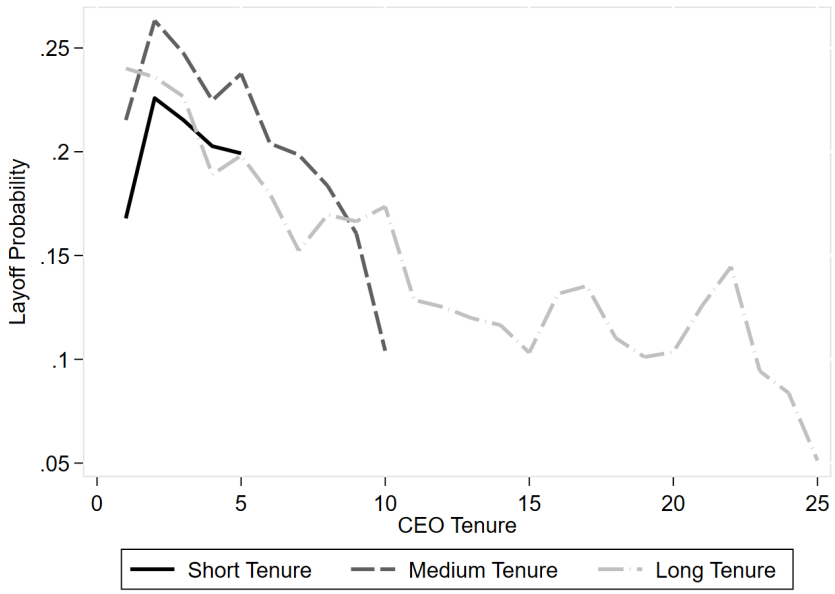


Figure IA.1. Layoffs and Tenure—Fixed CEO Differences?

Probability of at least one layoff by year of tenure plotted for three different CEO types based on overall/total tenure. Short tenure is up to five years. Medium tenure is more than five and up to ten years. Long tenure is more than ten years. Data on layoffs hand-coded using S&P Key Developments data. CEO tenure based on Execucomp data.

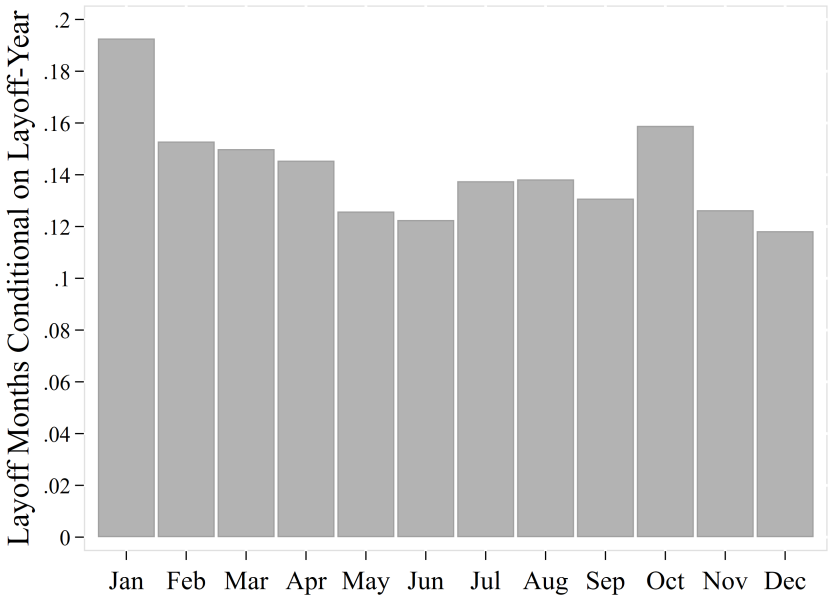


Figure IA.2. Layoffs By Month of the Year

This figure plots the probability of making at least one layoff announcement by month conditional on making at least one layoff announcement in a given year. Data on layoffs hand-coded using S&P Key Developments data.

Table IA.1. Layoffs and CEO Tenure—Additional Controls

The dependent variable is an indicator variable that equals one if a firm makes at least one layoff announcement in a given year and zero otherwise. Data on layoffs hand-coded using S&P Key Developments data. CEO tenure based on Execucomp data, winsorized and divided by 100 in the regressions for ease of exposition. Firm size and profitability measures from Compustat data. Firm profitability is defined as operating income before depreciation divided by assets and is winsorized. Firm characteristics are lagged. Industry classification is at the SIC3 level using data from Compustat. Industry distress uses CRSP stock data and is defined as a 30% drop in median firm stock-price over the following two years in an industry. Employment growth, Market-to-Book, and Q are all calculated using data from Compustat and, in the case of Market-to-Book and Q, CRSP. Employment growth, Market-to-Book, and Q are all lagged and winsorized. Standard errors, clustered by industry, are shown in parentheses. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

	(1)	(2)	(3)	(4)
CEO Tenure / 100	-0.267^{***}	-0.246^{***}	-0.179^{***}	-0.188^{***}
	(0.032)	(0.035)	(0.040)	(0.044)
Industry Distress (Lag 1&2)	0.043^{***}	0.045^{***}	0.042^{***}	0.044^{***}
	(0.012)	(0.012)	(0.012)	(0.012)
Firm Size (Ln Assets)	0.041^{***}	0.044^{***}	0.030^{***}	0.040^{***}
	(0.005)	(0.005)	(0.008)	(0.009)
Firm Size (Ln Employees)	0.039^{***}	0.034^{***}	0.063^{***}	0.061^{***}
	(0.005)	(0.006)	(0.008)	(0.009)
Firm Profitability	-0.335^{***}	-0.344^{***}	-0.211^{***}	-0.248^{***}
	(0.034)	(0.035)	(0.045)	(0.049)
Employment Growth	-0.076^{***}	-0.072^{***}	-0.050^{***}	-0.050^{***}
	(0.013)	(0.013)	(0.013)	(0.014)
Market-to-Book	-0.004		-0.013^{***}	
	(0.003)		(0.003)	
Q		-0.001^{***}		-0.002^{***}
		(0.000)		(0.000)
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	No	No
Industry FE	Yes	Yes	No	No
Firm FE	No	No	Yes	Yes
Observations	33,866	30,696	33,745	30,586

Table IA.2. Layoff Probability Around Exogenous CEO Changes

This table shows the results of the stacked difference-in-differences analysis estimating the change in layoff probability around exogenous CEO departures relative to non-treated firms (see Equation (2)). Exogenous CEO changes are defined as those occuring due to CEO death or illness of the incumbent CEO and come from Gentry, Harrison, Quigley, and Boivie (2021). See the text in Section 3.2 for additional details. Standard errors, clustered by industry, are shown in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

	(1)	(2)
Treat (Exogenous CEO Change)	0.001	0.002
	(0.021)	(0.021)
Treat × Post	0.064*	0.064**
	(0.034)	(0.031)
Controls	Yes	Yes
Cohort-Year FE	Yes	Yes
Cohort-Industry FE	Yes	Yes
Observations	63,266	63,357

Table IA.3. Layoffs and CEO Tenure—CEO Compensation

The dependent variable is an indicator variable that equals one if a firm makes at least one layoff announcement in a given year and zero otherwise. Data on CEO compensation comes from Execucomp. CEO-firm-years are sorted into quantiles cross-sectionally within a given year to account for the rise of CEO compensation over time. CEOs' pay quantile in the first and last year of a CEO's tenure is replaced with the quantile from the second and second-to-last year of tenure, respectively, to eliminate noise as a result of partial service and potential other pay aspects specific to CEO arrival and departure. The Medium CEO Pay category refers CEOs between the 25th and 90th or 95th percentile of the pay distribution, respectively. Data on layoffs hand-coded using S&P Key Developments data. CEO tenure based on Execucomp data, winsorized and divided by 100 in the regressions for ease of exposition. Firm size and profitability measures from Compustat data. Firm profitability is defined as operating income before depreciation divided by assets and is winsorized. Firm characteristics are lagged. Industry classification is at the SIC3 level using data from Compustat. Industry distress uses CRSP stock data and is defined as a 30% drop in median firm stock-price over the following two years in an industry. Standard errors, clustered by industry, are shown in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

	(1)	(2)	(3)	(4)
CEO Tenure / 100 × Bottom 25% CEO Pay	-0.193^{***}	-0.126^{**}	-0.194^{***}	-0.128^{**}
	(0.054)	(0.064)	(0.054)	(0.064)
CEO Tenure / 100 × Medium CEO Pay	-0.313^{***}	-0.214^{***}	-0.335^{***}	-0.221^{***}
	(0.042)	(0.052)	(0.045)	(0.053)
CEO Tenure / 100 × Top 10% CEO Pay	-0.599^{***}	-0.278^{**}		
	(0.141)	(0.129)		
CEO Tenure / 100 × Top 5% CEO Pay			-0.524^{***}	-0.199
			(0.148)	(0.122)
Medium CEO Pay	-0.028^{***}	-0.013	-0.027^{***}	-0.013
	(0.009)	(0.011)	(0.010)	(0.011)
Top 10% CEO Pay	0.039^{**}	-0.027		
	(0.019)	(0.020)		
Top 5% CEO Pay			0.027	-0.047^{***}
			(0.021)	(0.018)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	No	Yes	Yes
Industry FE	Yes	No	Yes	Yes
Firm FE	No	Yes	No	No
Observations	32,817	32,723	32,817	32,723

Table IA.4. Layoffs and CEO Tenure—Layoffs Around Holiday Season With Extended Layoff-Year Window

Dependent variable is equal to one for years with a layoff in December and zero otherwise. Regressions use the layoff-year sample from Columns (3) and (4) of Table 8, extended by CEO-firm-years for which there is a layoff in Q1 (Q1 or Q2) of the following year. Data on layoffs hand-coded using S&P Key Developments data. CEO tenure based on Execucomp data, winsorized and divided by 100 in the regressions for ease of exposition. Firm size and profitability measures from Compustat data. Firm profitability is defined as operating income before depreciation divided by assets and is winsorized. Firm characteristics are lagged. Industry classification is at the SIC3 level using data from Compustat. Industry distress uses CRSP stock data and is defined as a 30% drop in median firm stock-price over the following two years in an industry. Standard errors, clustered by industry, are shown in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

	Layoff-Years + Q1		Layoff-Years + Q1 + Q2	
	(1)	(2)	(3)	(4)
CEO Tenure / 100	-0.254^{***}	-0.280^{**}	-0.232^{***}	-0.245^{**}
	(0.056)	(0.132)	(0.051)	(0.123)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	No	Yes	No
Industry FE	Yes	No	Yes	No
Firm FE	No	Yes	No	Yes
Observations	6,657	6,234	7,225	6,895

Table IA.5. Layoffs and Internally Versus Externally Hired CEO

The dependent variable is an indicator variable that equals one if a firm makes at least one layoff announcement in a given year and zero otherwise. Data on layoffs hand-coded using S&P Key Developments data. CEO tenure based on Execucomp data, winsorized and divided by 100 in the regressions for ease of exposition. Firm size and profitability measures from Compustat data. Firm profitability is defined as operating income before depreciation divided by assets and is winsorized. Firm characteristics are lagged. Industry classification is at the SIC3 level using data from Compustat. Industry distress uses CRSP stock data and is defined as a 30% drop in median firm stock-price over the following two years in an industry. Externally hired CEOs are CEOs who assume the CEO position within one year of joining the firm, as identified through the variables BECAMECEO and JOINED_CO in Execucomp. Standard errors, clustered by industry, are shown in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

	(1)	(2)	(3)	(4)
CEO Tenure / 100	-0.359^{***}		-0.295^{***}	
	(0.070)		(0.112)	
CEO Tenure / 100 × Internal CEO		-0.309^{***}		-0.287^{*}
		(0.096)		(0.153)
CEO Tenure / 100 × External CEO		-0.396^{***}		-0.302^{*}
		(0.096)		(0.180)
Internal CEO	-0.029^{***}	-0.037^{**}	-0.051^{**}	-0.052
	(0.010)	(0.017)	(0.023)	(0.033)
Industry Distress (Lag 1&2)	0.045^{***}	0.045^{***}	0.044^{***}	0.044^{***}
	(0.015)	(0.015)	(0.014)	(0.014)
Firm Size (Ln Assets)	0.032^{***}	0.032^{***}	0.041^{***}	0.041^{***}
	(0.008)	(0.008)	(0.012)	(0.012)
Firm Size (Ln Employees)	0.064^{***}	0.064^{***}	0.068^{***}	0.068^{***}
	(0.009)	(0.009)	(0.017)	(0.017)
Firm Profitability	-0.402^{***}	-0.401^{***}	-0.256^{***}	-0.256^{***}
	(0.069)	(0.068)	(0.091)	(0.091)
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	No	No
Industry FE	Yes	Yes	No	No
Firm FE	No	No	Yes	Yes
Observations	10,982	10,982	10,906	10,906

Table IA.6. Predictors of Layoff Announcement Returns

Stock data from CRSP Daily Extract. Market return from daily CRSP Stock File Indexes built on NYSE, AMEX, NASDAQ, and ARCA market cap. Each observation requires at least four days of data for the seven-trading-day window. Announcement returns are winsorized. Data on layoffs hand-coded using S&P Key Developments data. CEO tenure based on Execucomp data, winsorized and divided by 100 in the regressions for ease of exposition. Firm size and profitability measures from Compustat data. Firm profitability is defined as operating income before depreciation divided by assets and is winsorized. Firm characteristics are lagged. Industry classification is at the SIC3 level using data from Compustat. Industry distress uses CRSP stock data and is defined as a 30% drop in median firm stock-price over the following two years in an industry. Standard errors, clustered by industry, are shown in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

	(1)	(2)
CEO Tenure / 100	−0.022	−0.020
	(0.024)	(0.024)
Industry Distress (Lag 1&2)	−0.004	−0.000
	(0.002)	(0.003)
Firm Size (Ln Assets)	0.002	−0.007
	(0.002)	(0.005)
Firm Size (Ln Employees)	−0.001	−0.003
	(0.002)	(0.005)
Firm Profitability	−0.013	−0.058**
	(0.016)	(0.026)
Year FE	Yes	Yes
State FE	Yes	No
Industry FE	Yes	No
Firm FE	No	Yes
Adjusted R2	0.0195	0.0637
Observations	11,623	11,213

Table IA.7. Layoffs and CEO Mortality—Stratified Cox Hazard Model

This table shows hazard ratios estimated from a Cox (1972) proportional hazards model. Mortality and tenure data is from Borgschulte, Guenzel, Liu, and Malmendier (2022). Industry distress measure and minimum stock performance based on data from CRSP. Layoff data is from Hallock (1998), Billger and Hallock (2005), and Farber and Hallock (2009). The dependent variable is an indicator that equals one if the CEO dies in a given year. The main independent variable of interest is "Distress Layoff" which is equal to one in year t if prior to or in year t, a CEO has undertaken a layoff during industry-wide distress, defined by the lagged industry distress variable. Age is CEO age. Firm size and profitability measures from Compustat data. We include time-invariant measures of firm size (assets and employees), as of the first year that the CEO has assumed the top position. Minimum stock performance defined as the worst stock performance in any six-month period during the CEO's tenure. More details about the data are in Section 2. Survival models are stratified by firms' industry affiliation. Standard errors, clustered by industry, are shown in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

	(1)	(2)	(3)
Distress Layoff	0.292**	0.287**	0.283**
	(0.138)	(0.135)	(0.135)
Non-Distress Layoff	−0.103	−0.106	−0.112
	(0.094)	(0.092)	(0.094)
Industry Distress (Lag 1&2)	0.088	0.097	0.087
	(0.115)	(0.114)	(0.122)
Age	0.136***	0.138***	0.139***
	(0.009)	(0.009)	(0.009)
Firm Size (Ln Assets)	0.004	0.005	0.006
	(0.073)	(0.071)	(0.071)
Firm Size (Ln Employees)	−0.035	−0.038	−0.035
	(0.070)	(0.070)	(0.072)
Firm Profitability	0.651	0.591	0.667
	(0.697)	(0.700)	(0.725)
Year	−0.007		
	(0.009)		
Minimum Stock Performance			−0.145
			(0.332)
Year FE	No	Yes	Yes
State FE	Yes	Yes	Yes
Observations	31,917	31,917	31,917

Table IA.8. Layoffs and CEO Mortality—CEO Tenure Control

This table shows coefficients from a logit model controlling for the passage of time (Efron 1988). Mortality and tenure data is from Borgschulte, Guenzel, Liu, and Malmendier (2022). Industry distress measure and minimum stock performance based on data from CRSP. Layoff data is from Hallock (1998), Billger and Hallock (2005), and Farber and Hallock (2009). The dependent variable is an indicator that equals one if the CEO dies in a given year. The main independent variable of interest is "Distress Layoff" which is equal to one in year t if prior to or in year t, a CEO has undertaken a layoff during industry-wide distress, defined by the lagged industry distress variable. Age is CEO age. Firm size and profitability measures from Compustat data. We include time-invariant measures of firm size (assets and employees), as of the first year that the CEO has assumed the top position. Minimum stock performance defined as the worst stock performance in any six-month period during the CEO's tenure. More details about the data are in Section 2. Standard errors, clustered at the SIC3 level, are shown in parentheses. Standard errors, clustered by industry, are shown in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

	(1)	(2)	(3)
Distress Layoff	0.305**	0.308**	0.295**
	(0.139)	(0.140)	(0.142)
Non-Distress Layoff	0.034	0.023	0.007
	(0.105)	(0.105)	(0.106)
Industry Distress (Lag 1&2)	0.196*	0.200*	0.166
	(0.119)	(0.120)	(0.126)
Cumulative CEO Tenure	−0.027*	−0.026*	−0.030**
	(0.014)	(0.014)	(0.014)
Age	0.148***	0.151***	0.152***
	(0.010)	(0.011)	(0.011)
Firm Size (Ln Assets)	−0.158**	−0.154**	−0.152**
	(0.076)	(0.077)	(0.076)
Firm Size (Ln Employees)	0.058	0.057	0.067
	(0.075)	(0.076)	(0.075)
Firm Profitability	0.487	0.454	0.726
	(0.704)	(0.715)	(0.735)
Year	0.007		
	(0.010)		
Minimum Stock Performance			−0.536*
			(0.325)
Year FE	No	Yes	Yes
State FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	31,917	31,917	31,917

Table IA.9. Layoffs and CEO Mortality—Stratified Cox Hazard Model With Tenure Control

This table shows hazard ratios estimated from a Cox (1972) proportional hazards model. Mortality and tenure data is from Borgschulte, Guenzel, Liu, and Malmendier (2022). Industry distress measure and minimum stock performance based on data from CRSP. Layoff data is from Hallock (1998), Billger and Hallock (2005), and Farber and Hallock (2009). The dependent variable is an indicator that equals one if the CEO dies in a given year. The main independent variable of interest is "Distress Layoff" which is equal to one in year t if prior to or in year t, a CEO has undertaken a layoff during industry-wide distress, defined by the lagged industry distress variable. Age is CEO age. Firm size and profitability measures from Compustat data. We include time-invariant measures of firm size (assets and employees), as of the first year that the CEO has assumed the top position. Minimum stock performance defined as the worst stock performance in any six-month period during the CEO's tenure. More details about the data are in Section 2. Survival models are stratified by firms' industry affiliation. Standard errors, clustered by industry, are shown in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

	(1)	(2)	(3)
Distress Layoff	0.313**	0.306**	0.296**
	(0.139)	(0.136)	(0.137)
Non-Distress Layoff	0.006	0.001	−0.014
	(0.104)	(0.103)	(0.104)
Industry Distress (Lag 1&2)	0.161	0.171	0.142
	(0.127)	(0.126)	(0.133)
Cumulative CEO Tenure	−0.044***	−0.043***	−0.047***
	(0.015)	(0.015)	(0.015)
Age	0.118***	0.121***	0.122***
	(0.010)	(0.010)	(0.010)
Firm Size (Ln Assets)	−0.023	−0.023	−0.021
	(0.071)	(0.069)	(0.069)
Firm Size (Ln Employees)	−0.046	−0.047	−0.039
	(0.072)	(0.072)	(0.072)
Firm Profitability	0.430	0.370	0.604
	(0.738)	(0.742)	(0.751)
Year	−0.010		
	(0.009)		
Minimum Stock Performance			−0.484
			(0.309)
Year FE	No	Yes	Yes
State FE	Yes	Yes	Yes
Observations	31,917	31,917	31,917

II. Data Descriptions

II.1 Key Developments Data

This section provides more details about the Standard and Poor's (S&P) Capital IQ Key Developments database and our data collection. Although there are some observations from the years before, the data collection is generally not considered to be robust until 2002 (Edmans, Goncalves-Pinto, Groen-Xu, and Wang 2018; Cohn, Gurun, and Moussawi 2020. Many of the events entered in 2000 and 2001 were entered in 2002 or later. The data was downloaded on January 28, 2022. Therefore our sample period covers from 2002 to 2021. The database covers more than 250,000 companies worldwide, but since we rely on Execucomp for details about CEOs, we collect only key developments for firms in Execucomp in the 2002 to 2021 period. Layoff announcements are located in the Key Developments database under the category of "Potential Red Flags/Distress Indicators" subcategory of "Discontinued Operations/Downsizings". Sometimes layoff related announcements may be referenced in other categories, such as "Labor-related Announcements" which covers union related announcements; however, we found this to be highly atypical in reviewing the data. There are approximately 12,340 key developments in this subcategory for firms in our sample.

Each key development entry includes the announcement date, the date entered into the database, the last date the entry was modified, a short headline, a situation summary, a type, a source, a company role, and other identifiers. We only use dates, headlines, and the situation summaries. The headlines are typically a phrase and the summaries are generally between one sentence and a small paragraph. To the best of our knowledge, the content is written by S&P employees based on a variety of sources which, according to S&P, may include "news aggregators, stock exchanges and regulatory websites as well as company websites." The data was raw text and therefore required significant programmatic processing and reviewing described below. We classify each key development as a layoff, a closure, or irrelevant. If a key development specifies a layoff and a closure, then it is classified as a layoff. In general, closures are also likely tied to (unspecified) layoffs. For example, in some cases, we see the announcement of a closure followed by a duplicate announcement which specifies an associated layoff. Duplicate layoffs/closures are noted when possible.[IA.1] Since most key developments are announcements, for consistency we focus on layoff announcements in our data; therefore, a key development which details a previously announced layoff would be coded as a duplicate. When available we collect the number of people laid off or percent (of total employees) laid off.[IA.2] Additionally, we

[IA.1] In some cases, the summary will note that the announced layoff was part of an earlier announcement or the execution of an alternative announcement. Alternatively, a duplicate may be obvious from context. For example, if it is specified a certain factory is being shut down.

[IA.2] If only the percent of a subset of workers being laid off is referenced, this number is not collected since

collect layoff/closure location(s) up to the city level for US layoffs and at the country level for non-US layoffs. We also take note of layoffs which are specified as global, international, or similarly described.

To increase the speed of hand-collection, we prepopulated some variables algorithmically. First, the headline and the situation summary were lemmatized which standardizes verbs and nouns. For example, "cutting" would be reduced to "cut" and "jobs" would be reduced to "job". Layoffs were identified if there was a headline or sentence in the summary which includes a layoff related verb and occupation related noun. Layoffs were identified with low confidence if only a one of the two is present. If the key development was not classified as a layoff but contained a closure word, then it was classified as a closure. Other observations or observations which included words indicating uncertainty in layoff/closure related sentences were classified as neither. Layoff numbers and percentages were identified with high confidence if the number was included in a common pattern using layoff verbs and occupation nouns. For example, "cut its workforce by 5%" or "cut x% of its workforce" would fit common patterns. If no numbers in this pattern were available or more than one number in a pattern was found, the number/percent was coded with low confidence. We focus on US companies and therefore collect the location up to the city level for US locations and to the country level for foreign layoffs. We identify foreign locations at the country level. Foreign countries are identified by looking for country names or large global cities. Locations in the United States are identified up to the city level when available. States are identified by name or abbreviation. US cities are identified by name in the case of large cities or coming before a comma and state name (i.e., "city, state"). Layoffs are identified as global if they include a related word (e.g., global, international, etc.).

We recognize that this algorithm is imperfect and cannot identify duplicates; therefore, after this prepopulation, all entries were read and all data points were entered/reviewed by a research assistant or coauthor. Low confidence layoffs and numbers were highlighted during the hand collection process to call extra attention to these data points. Instructions specified layoffs as when "when it is clear people lost their jobs". Duplicates were specified as when an "observation is believed to be a duplicate of a previous observation". The instructions did not request manual review (e.g., by using a search engine) with the solitary exception of identifying locations. This could apply to cities where the state was not specified and could easily be identified by using a search engine to search for the city name and company name. Alternatively, sometimes non-city locations, for example, business complexes may be specified and the city can be easily identified using a search engine.

we only have the number of total employees at the firm in Compustat.

II.2 Tenure

We identify CEOs using ExecuComp's classification, where the CEOANN variable has value "CEO". CEO tenure is calculated using the "BECAMECEO" variable as the starting year when it is available. Otherwise we attempt to calculate it using the Execucomp panel which starts in 1992.

We identify CFOs using ExecuComp's classification, where the CFOANN variable has value "CFO". If there are two such people in a year, then we choose the one whose title includes some variation of CFO (e.g., "Chief Financial Officer"). If there is no CFO noted in Execucomp, we identify them by examining the text of their title following Jiang, Petroni, and Wang (2010). We look for titles in the following order: CFO, chief financial officer, treasurer, controller, finance, and vice president-finance. If more than one person in a year has the the same title then the person with the higher age is chosen as the CFO.

II.3 Industry Distress

Industry Distress is an indicator equal to 1 if a CEO firm is exposed to an industry shock that year. Industry shock is defined as median two-year stock return (forward-looking) of firms in the same industry below -30%. As in Babina (2020), we (i) use SIC3 industry classes, (ii) restrict to single-segment CRSP/Compustat firms, i. e., drop firms with multiple segments in the Compustat Business Segment Database (CBSD), (iii) drop firms if the reported single-segment sales differ from those in Compustat by more than 5%, (iv) restrict to firms with sales of at least \$20m, and (v) exclude industry-years with fewer than four firms. We use firms' modal SIC across CRSP, Compustat, and CBSD, and the latter in case of a tie.

II.4 Additional Controls

The market to book ratio is defined as

$$\frac{PRCC_F \cdot CSHO}{AT}.$$

$PRCC_F$ is the annual closing stock price from CRSP. $CSHO$ is the number of common shares outstanding from CRSP. AT is total assets from Compustat. Our measure of Q is defined as

$$\frac{DLC + DLTT + PRCC_F \cdot CSHO}{PPEGT}.$$

DLC is debt in current liabilities from Compustat. $DLTT$ is long-term debt from Compustat. $PPEGT$ is gross property, plant and equipment from Compustat. Employment growth is defined as

$$\frac{EMP_t - EMP_{t-1}}{EMP_{t-1}}.$$

EMP is total employment from Compustat. For the market-to-book ratio, Q, and employment growth, we winsorize these variables. We winsorize Q at the 95th percentile as this measure is substantially more right-skewed than market-to-book. Our conclusions are unchanged when we instead winsorize less conservatively at the 99th percentile. For all variables, we use the lagged version in our regression analyses.