Governance and CEO turnover:
Do something or do the right thing?*

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We study how corporate governance affects firm value through the decision of whether to fire or retain the CEO. We present a model in which weak governance - which prevents shareholders from controlling the board - protects inferior CEOs from dismissal, while at the same time insulates the board from pressures by biased or uninformed shareholders. Whether stronger governance improves retain/replace decisions depends on which of these effects dominates. We use our theoretical framework to assess the effect of governance on the quality of firing and hiring decisions using data on the CEO dismissals of large U.S. corporations during 1994-2007. Our findings are most consistent with a beneficent effect of weak governance on CEO dismissal decisions, suggesting that insulation from shareholder pressure may allow for better long-term decision-making.

1. Introduction

From Adam Smith (1776) and Berle and Means (1932) to Hermalin and Weisbach (1998), economists have expressed concern about entrenched CEOs' ability to pursue personal gain at the expense of shareholders. The prevailing belief is that firms risk value destruction by self-serving CEOs, if they are left unchecked by weak boards or weak shareholders.

At the same time, many companies have actively chosen to weaken shareholders' powers with the explicit aim of ensuring that long-term profits are maximized. Most recently, Facebook, LinkedIn, and Groupon completed initial public offerings (IPOs) with dual class share structures—with

super-voting shares retained by insiders. In Google's case, the company introduced a new class of nonvoting shares, saying, "outside pressures [from stockholders] too often tempt companies to sacrifice long term opportunities to meet quarterly market expectations."[1] Google's concern about *too much* shareholders influence seems at odds with the traditional notion that entrenchment—the insulation of CEOs from shareholders—is bad for firms' performance.

In this paper, we incorporate both of these views into a theory of entrenchment that distinguishes between the ability of CEOs to control the board (the "CEO Protection" view) versus the board's ability to ignore shareholders (the "Board Protection" view). The literature on entrenchment largely ignores this distinction, assuming that board dependence on the CEO and insulation from shareholders have the same effect—protecting inferior CEOs.

In our model, the CEO Protection and Board Protection views have differing effects on the firm. Specifically, we examine the quality of the board's decision to retain or fire CEOs. We focus on this decision because it one of the board's primary functions, one that is made solely by the board, and one that lies at the heart of the debate on the costs of board entrenchment. We formally present and empirically examine a model that establishes distinct predictions for the CEO Protection and Board Protection views of entrenchment, and find evidence that limiting shareholder power over boards—that is, *entrenching* boards against shareholders—can improve the quality of the firing decision.

Existing literature already suggests that boards may make flawed firing decisions. Jenter and Kanaan (2008) conclude that "Boards fail to fully filter what appear to be exogenous shocks to firm performance from their CEO retention decisions...consistent with the hypothesis that corporate boards commit systematic attributions errors and credit or blame CEOs for performance caused by factors beyond their control."

We suggest that errors may arise when such decisions are heavily influenced by shareholders. A sense of the short-term pressures that may come to bear on board members comes from a report from the consulting firm, Booz, Allen, and Hamilton, which observes that

"In the U.S., investors apparently want CEOs to share the pain of poor returns. Although this reaction is not surprising, it is irrational... This conclusion [raises] uncomfortable questions about the relationship between boards and management, for it indicates that directors are highly responsive to shareholder pressure about share prices, *even if management is not solely responsible for the performance.*"[2]

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[1] Google Prospectus, Amendment No. 9 to Form S-1 Registration Statement, Letter from the Founders.

[2] $http://www.boozallen.de/content/downloads/5h_ceo_2004.pdf$

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If shareholders are uninformed, have limited time horizons, or are subject to overreaction or other biases, shareholders may demand CEO dismissal in response to performance changes outside of the CEO's control.[3] We argue that these views may influence board decisions, to the detriment of firm performance.

Why should board members cater to the tastes of shareholders? In Fama (1980) and Fama and Jensen (1983) the market disciplines boards and encourages oversight by creating incentives for board members to form reputations as experts. But this depends on the market *perceiving* the board member as an expert. Holmstrom (1999) notes that board members wanting to be perceived as doing the right thing is very different from doing the right thing. And Brandenburger and Polak (1996) demonstrate how firm decision makers can make inappropriate choices when concerned about shareholders' perceptions of their decisions. A primary thesis of our paper is that when board members are less entrenched they may be more concerned about shareholder perceptions and thus more influenced by noise.

Our model formalizes the above intuition by examining the fire versus retain decision facing boards. We consider two scenarios: one in which shareholders know the CEO's quality, and another, in which shareholders' beliefs on CEO quality are subject to noise.

The first scenario gives rise to the classical notion of entrenchment, in which protecting the CEO and/or protecting the board worsens the firing decision. In this case, firms with entrenched CEOs or boards will find it harder to fire the CEO—retaining inferior CEOs on average, and firing only those with the worst performance. Board Protection and CEO Protection play isomorphic roles, and both lead to: 1) greater CEO quality improvement after firing more entrenched CEOs; 2) worse performance before a more entrenched CEO is fired; and 3) worse performance of retained, more entrenched, CEOs.

If shareholders' beliefs are susceptible to noise, then entrenchment of the board against shareholders can improve the firing decision since entrenched boards can retain good but unlucky CEOs (and fire low-quality lucky ones). In this alternate scenario Board Protection will result in: 1) greater CEO quality improvement after firing more entrenched CEOs; 2) better performance before a more entrenched CEO is fired; and 3) better performance of retained, more entrenched, CEOs. Since more entrenched boards fire based on quality rather than noise, their firms experience greater improvements in CEO quality after firing (Prediction 1). Additionally, conditional on firing, CEOs fired by less entrenched boards will have had, on average, bad outcomes due to bad luck. Therefore,

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[3] A similar effect has been found in gubernatorial elections by Wolfers (2007) who concludes that voters make systematic attribution errors. Wolfers writes that "voters in pro-cyclical states are consistently fooled into re-electing incumbents during national booms, only to dump them during national recessions. Similarly, voters in oil-producing states tend to re-elect incumbent governors during oil price rises, and vote them out of office when the oil price drops."

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CEOs fired by more entrenched boards will have had, on average, better performance prior to being fired (Prediction 2). Finally, entrenched boards retain unlucky, but marginally good CEOs, while less entrenched boards fire them. And less entrenched boards protect some bad but lucky CEOs, while entrenched boards fire them. Therefore, retained CEOs of entrenched boards will perform better (Prediction 3).

Both scenarios predict that CEO quality will improve when entrenched CEOs are fired. However, they offer opposite predictions on the effect of entrenchment on performance prior to firing, and the performance of retained CEOs.

Using data on CEO firings during 1994-2007, we find evidence that favors the misguided shareholders view. Using the Gompers, Ishii, Metrick (2003) index of antitakeover provisions as our primary measure of entrenchment, we find that the pre-dismissal performance of fired CEOs is higher in high-entrenchment firms, and the performance of retained CEOs is better. Furthermore, these effects are strongest when the percent of independent directors is high or when CEO tenure is low—i.e., the positive effects of entrenchment are stronger when the CEO needs more protection. These results validate the distinct role the Board Protection version of entrenchment plays in *improving* the decision to fire or retain the CEO. Our model and our results demonstrate that the traditional notion of entrenchment—as loosely representing weak shareholders and/or weak boards, and unequivocally bad for firms—is imprecise and incomplete.

There is a large body of prior work examining forced CEO turnover ((see Brickley 2003, Hermalin and Weisbach 2003, for a summary)). One stream of research examines the drivers of firing decisions, in particular focusing on the relationship between firm performance and forced turnover (Coughlan and Schmidt (1985), Warner et al. (1988), Huson et al. (2001)). In this context, several studies explore the role of governance by examining how the performance sensitivity of turnover varies with proxies for good governance. The maintained assumption is that good governance should increase performance sensitivity. For example, Weisbach (1988) finds that CEO turnover is more sensitive to firm performance in firms with more outside directors, and takes this as evidence of the beneficial effects independent boards. However, because stock performance is noisy—and often due to factors outside of the CEO's control— our model implies that more performance sensitivity of turnover is necessarily desirable.

A separate stream of work in the CEO turnover literature focuses on how firm performance changes post-turnover (Hotchkiss (1995), Weisbach (1995), Denis and Denis (1995), Huson et al. (2004)). In this literature, a large post-turnover improvement in performance is interpreted as an affirmation of the quality of the firing decision. For example, Huson et al. (2004) find that post-turnover changes in firm profitability are positively related to institutional ownership and

percentage of outsiders on the board. They interpret this as evidence that firms with higher institutional ownership and board independence make better firing decisions.[4] We also focus on firm performance to examine the quality of the dismissal decision. However, in contrast to most of the preceding literature, our empirical work is guided by a model, which contrasts the predictions of two alternate views of entrenchment, which leads to predictions on pre-firing performance and on performance in cases where CEOs are retained. For example, we cannot distinguish between the Board vs CEO Protection views by examining only post-firing performance; instead the distinguishing predictions lie with examining pre-firing performance and the performance of retained CEOs.

Finally, our paper contributes to a growing body of research that suggests a positive role for entrenchment. Adams and Ferreira (2007) suggest that a benefit of entrenchment is that it encourages CEOs to share information with and accept advice from the board. In Almazan and Suarez (2003) entrenching the CEO commits the board to retaining her, leading to larger human capital investment by the CEO ex ante. These papers, like ours, view entrenchment as a commitment device that improves the quality of information flow and decision-making, although we are the first to suggest that entrenchment may be ex-post optimal rather than simply an ex-ante commitment device.

Our ideas and empirical findings have broad implications for how to govern a body with potentially uniformed or biased constituents. We hope to further inject into the governance debate the idea that board independence and board responsiveness to shareholders may have very different implications. Furthermore, while board alignment with shareholder goals is clearly important, board responsiveness to shareholder whims may be counterproductive.

The rest of this paper is structured as follows: Section 2 provides our theoretical framework, emphasizing the difference between the CEO and Board Protection views of entrenchment; Section 3 describes the data and our empirical results are presented in Section 4. Section 5 concludes.

2. A Model of Entrenchment

The model aims to distinguish between the effects of two types of entrenchment: entrenchment that reduces board independence form the CEO (CEO Protection), versus entrenchment that reduces the board's responsiveness to shareholders (Board Protection). Board members in the model will

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[4] However, we believe that this interpretation is actually difficult to square with the classical view of entrenchment, since the presence of institutional owners and outside directors should make it *easier* to fire the CEO; and therefore, the improvement *given* that a CEO has been fired should be less than when a very entrenched firm's CEO is finally fired. However, their findings are consistent with our Board Protection view of entrenchment: because institutional owners are better informed or less biased, they protect good but unlucky CEOs, only firing bad ones. Therefore, institutional ownership may have the same insulating effect as governance statutes in protecting CEOs from uninformed shareholders. This is also the view adopted by Aghion et al. (2009), which finds that firms with greater institutional ownership are less likely to fire CEOs upon "bad news."

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face one of two types of costs: a cost C if they go against the CEO or a cost S if they go against what shareholders believe to be the right decision.

The larger the cost C, the less independent is the board. Board members incur C if they choose to fire the CEO. This cost represents any number of considerations. If directors depend on the CEO for their jobs, then firing the CEO may increase the risk that they too are removed from their positions. Social connections between a director and the CEO may also result in a personal cost of firing the CEO. Or, if a CEO-friendly reputation is an asset for securing invitations to join other boards, firing the CEO may result a reputational penalty.

The larger the cost S, the greater is the board's responsiveness to shareholders. Board members incur a cost S if they take actions that run contrary to shareholders' desires. This could take the form of time and effort spent talking to unhappy shareholders, or a reputational cost of becoming viewed as unresponsive to shareholders. S also could represent the cost of upsetting shareholders, inducing share sales and lowering the share price (similar to Brandenburger and Polak (1996)). A lower share price could directly affect board members' compensation, or indirectly affect them via a higher risk of takeover (in which board members are replaced). Or S could represent the discomfort board members feel when the if press and analyst reports aggressively disagree with their actions.

Thus, board responsiveness is increasing in S and board independence is decreasing in C. Decreasing S or increasing C will cause a CEO to be more entrenched, in the sense of reducing the probability of dismissal, but as we will show, the two types of entrenchment have different implications for the quality of firing decisions and distinct empirical predictions.

The model has two periods, with a decision by the board to retain or fire the CEO at the end of the first period. Firms are assumed to begin life at the start of period 1 with a CEO in place. The CEO has unknown quality q drawn from the distribution $F_q(q)$ with mean $\overline{q}$. If the CEO is retained into the second period the quality of the CEO will persist across both periods. However, the board has the option to fire the CEO and receive a new draw of CEO quality for the second period.

Firm performance in period 1 is a function of CEO quality plus other unknown firm characteristics ϕ, drawn from the distribution $F_\phi(\phi)$ with mean $\overline{\phi}$. The firm-specific characteristics will persist across both periods and will not change with a CEO transition. Performance also depends on a random shock, η, which will be drawn iid each period from $[-\eta, \eta]$ with mean zero. For simplicity we reduce the distribution of q to a uniform distribution $[-q', q']$.

A firm's profit depends on the quality of its CEO, firm characteristics, and the random shock, and is represented by $\pi^i(q_t, \phi, \eta_t)$, where the superscript $i \in \{H, L\}$ represent a firm's entrenchment level, high or low. The subscript t denotes the first or second period, $t \in \{1, 2\}$; ϕ has no time

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subscript because firm characteristics are the same across periods. The distributions of q, ϕ, and η are not conditional on i or t, and therefore, ex ante, ignoring any decision to fire, all firms are in expectation identical to each other and across time. For simplicity we will assume that the profit function is such that $\pi^i(q_t, \phi, \eta_t) = q_t + \phi + \eta_t$. This assumption is not critical for our results but simplifies exposition and intuition.[5] We will also assume a zero discount rate, $r = 0$. We will refer to $\widehat{q}_t, \widehat{\phi}$, and $\widehat{\eta}_t$ as the realizations of these variable and sometimes add a superscript to denote either high or low entrenchment.

All players (and the econometrician) observe $\pi^i(\widehat{q}_t, \widehat{\phi}, \widehat{\eta}_t)$ at the end of each period. The board observes the components of performance separately.[6] The board of directors correctly decomposes performance into $\widehat{q}_t, \widehat{\phi}$, and $\widehat{\eta}_t$. Our key assumption is that shareholders may or may not mistakenly attribute the noise, $\widehat{\eta}_t$, to the CEO. Thus, instead of interpreting a high or low outcome as possibly due to luck, shareholders may attribute both $\widehat{q}_1$ and $\widehat{\eta}_1$ to the CEO. Let $\widehat{q}_s$ represent the average shareholder's beliefs about CEO quality conditional on period one performance. Initially we assume that shareholders correctly attribute only $\widehat{q}_1$ to the CEO, so $\widehat{q}_s = E[q_s|\widehat{q}_1, \widehat{\eta}_1] = \widehat{q}_1$. Then we consider what happens if shareholders misjudge CEO quality.

Why might investors misjudge CEO quality? One explanation comes from the well-accepted concept of Fundamental Attribution Error (Ross 1977), which posits that when individuals observe an outcome they are more likely to attribute it to the person or persons involved (dispositional factors), rather than surrounding circumstances (situational factors). Hence, there is a psychological predisposition to blame the person rather than underlying circumstances that may actually be the source of performance.[7] As a result, shareholder beliefs may depend on noise, or $\widehat{q}_s = E[q_s|\widehat{q}_1, \widehat{\eta}_1] = \widehat{q}_1 + \widehat{\eta}_1$.

Career concerns can then pressure boards to respond to shareholders.[[[CITE??]]] Therefore to the extent that board members respond to shareholders, firing decisions may in turn be affected by noise.

Shareholders and Firing

At the end of period 1 the shareholders decide whether they believe the CEO should be fired. We will call the average shareholder's decision d_s, where $d_s = 1$ if the shareholders think the CEO

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[5] If π were concave in q then boards would not fire some CEOs suspected of being below average because the expectation of second period profit with a random CEO, $E[\pi_2(q, \phi, \eta)]$, is strictly less than the expectation of second period profit with an average CEO in place $E[\pi_2(\overline{q}, \phi, \eta)]$. Therefore a CEO with quality slightly less than average would also be preferred to a random draw. If π were convex in q then boards would fire even above average CEOs. We abstract from this generalization as it is not central to our point.

[6] The assumption of perfect information is not necessary as all results hold if both CEO and firm quality are observed with noise.

[7] Many papers have documented this type of behavior. See Ross and Nisbett (1991) for an early review and Jenter and Kanaan (2008) or Wolfers (2007) for recent evidence

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should be fired and $d_s = 0$ if they think the CEO should be retained. Shareholders with the objective of maximizing second period profits will prefer that the CEO should be fired if

$$E[q_2 \mid retained] = \widehat{q}_s < \overline{q} = E[q_2 \mid fired]. \tag{1}$$

At the end of period 1 the board makes a decision, d_b, whether to retain the current CEO or to attempt to fire her. Let $d_b \in \{0, 1\}$, with a value of 0 if the board decides to retain the CEO and 1 if it decides to fire her.

We assume that the board benefits from higher second period firm performance, since board members care about their reputation as effective monitors (Fama (1980) and Fama and Jensen (1983)). However, they are subject to two costs. First, if the board tries to fire the CEO they face a cost $C \geq 0$. Second, if the board goes against the shareholders' thinking they face a cost $S \geq 0$. The board pays this additional cost if they take an action that differs from shareholders' beliefs. Thus, C represents how protected the CEO is from the actions of the board, and S represents how protected the board is from the actions of shareholders.

The board makes their decision, $d_b \in \{0, 1\}$, to maximize:

$$U_b(d_b) = E[\pi_2 \mid d_b, \widehat{q}_1, \widehat{\phi}] - S |d_b - d_s| - C d_b. \tag{2}$$

The board attempts to fire the CEO if the quality of the current CEO, $\widehat{q}_1$, is less than the expected quality of the future CEO minus the cost of firing (C) and accounting for the cost of going against shareholders' beliefs (S). Thus, the board attempts to fire the CEO if

$$U_b(retain) < U_b(fire),$$
$$\widehat{q}_1 - S d_s < \overline{q} - S(1 - d_s) - C. \tag{3}$$

If $S > 0$ then the board may fire a good CEO simply in response to shareholder preferences. If $C > 0$ then the board is less likely to fire a bad CEO and will fire less often than shareholders would prefer.

2.1. The Role of Entrenchment

The goal of the model is to provide empirical predictions and a framework for analyzing the effects of entrenchment. The fundamental question is whether a firm that is more responsive to shareholders makes on average a better or worse firing decision. We will first develop a model that reflects the traditional view, in which shareholders are not influenced by noise and so greater responsiveness to shareholders improves the firing decision. Then we will include noise in shareholder preferences and see the potential effects of decreasing the board's responsiveness to shareholders. All proofs are relegated to the appendix.

2.1.1. The results of the standard view of entrenchment. The standard view of entrenchment places little emphasis on differentiating between the factors that increase the cost to the board of firing the CEO and those that decrease the costs of ignoring shareholders. Instead, they are treated as essentially isomorphic. We start with a baseline model that also has no differential effect between entrenchment that increases C versus decreases S. Thus, in the baseline model we will assume that a firm with greater entrenchment will have a higher C and a lower S.[8] We present the baseline model to compare against an alternative, presented in the next section, in which we incorporate the possibility of poorly informed or biased shareholders and find that S and C have distinct effects and different empirical implications.

PROPOSITION 1. *If shareholders accurately asses CEO quality ($\widehat{q}_s = E[q_s|\widehat{q}_1, \widehat{\eta}_1] = \widehat{q}_1$) then the effects of high entrenchment (high C and low S) are as follows:*

a) The expected improvement in CEO quality after the CEO is fired is greater if the CEO is highly entrenched,

$$E[q_2^H - q_1^H \mid fired] > E[q_2^L - q_1^L \mid fired].$$

b) The expected performance in period 1 conditional on firing the CEO is worse if the CEO is highly entrenched,

$$E[\pi_1^H \mid fired] < E[\pi_1^L \mid fired].$$

c) The expected performance in period 2 of those firms where the CEO is retained is worse if the CEO is highly entrenched,

$$E[\pi_2^H \mid retained] < E[\pi_2^L \mid retained].$$

where the H superscript signifies high entrenchment and L signifies low entrenchment.

Each of these results is the intuitive outcome of the standard model of entrenchment. Since it is more costly to fire a highly entrenched CEO, such a CEO must be worse in order to get fired. Therefore, the improvement in CEO quality that comes from firing a highly entrenched CEO is relatively large (part a). Furthermore, since it is more costly to fire a highly entrenched CEO, performance must be worse in the first period to induce firing (part b). Finally, since entrenchment will preserve some low quality CEOs we expect the performance conditional on not firing the CEO to be worse (part c).

Increasing Shareholder Power

It is often suggested that the remedy to entrenchment is to make the board more accountable to the shareholders. Bebchuk and Fried (2004), for example, advocate for shareholders to have a

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[8] We will see in corollary 1 that for entrenchment to result in the retention of low quality CEOs S must be low enough. To focus on the interesting case when entrenchment has this effect we assume that $S < C$.

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greater ability to nominate and remove directors. In the context of our model this is represented as increasing the cost to the board of going against shareholders (larger S). As long as shareholders accurately assess the quality of the CEO then increasing the power of shareholders unambiguously improves the firing decision.

COROLLARY 1. *If $\widehat{q}_s = \widehat{q}_1$, then for some $S < \infty$ boards will attempt to fire all below average CEOs, $E[d_b|\widehat{q}_1 < \overline{q}] = 1$.*

Next, we consider how this changes if shareholders hold erroneous beliefs about CEO quality.

2.2.   Entrenchment with misguided shareholders.

In this section we now assume that shareholders attribute noise to the quality of the CEO ($\widehat{q}_s = E[q_s|\widehat{q}_1, \widehat{\eta}_1] = \widehat{q}_1 + \widehat{\eta}_1$). If shareholders believe a CEO should be removed when poor performance is not her fault, board entrenchment may allow a firm to protect a good but unlucky CEO.

This assumption does not change the effect of increasing C; more interesting is how the presence of misguided shareholders affects the impact of S. To focus on this latter effect, we assume that all firms have the same cost of firing of C but differ in their responsiveness to shareholders, i.e., each has a different S.[9] Furthermore, if the noise η is very small then a larger S functions similarly to Corollary 1 and little of interest emerges.[10] Thus we assume that $\eta > S + C$ so that noise has adverse effects.

We will see that while this model also predicts a performance improvement after firing an entrenched CEO, there will be two key predictions that differ from the standard model, and the intuition is entirely distinct.

PROPOSITION 2. *If noise affects the shareholder assessment of CEO quality ($\widehat{q}_s = E[q_s|\widehat{q}_1, \widehat{\eta}_1] = \widehat{q}_1 + \widehat{\eta}_1$), then the effects of a higher cost of firing the CEO (higher C) are as in proposition 1. However, the effects of higher entrenchment in the form of a lower cost to ignoring shareholders (lower S) are as follows:*

a) The expected improvement in CEO quality after the CEO is fired is greater if the board is highly entrenched,

$$E[q_2^H - q_1^H \mid fired] > E[q_2^L - q_1^L \mid fired]. \tag{4}$$

b) The expected performance in period 1 conditional on firing the CEO is <u>better</u> if the board is highly entrenched,

$$E[\pi_1^H \mid fired] > E[\pi_1^L \mid fired]. \tag{5}$$

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[9] We continue to assume, as above, that $S < C$, in order to focus on the interesting case when both S and C matter.

[10] If the noise is small then shareholder desires are very close to correct so responding to them improves outcomes.

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c) The expected performance in period 2 of those firms where the CEO is retained is <u>better</u> if the board is highly entrenched,

$$E[\pi_2^H \mid retained] > E[\pi_2^L \mid retained]. \tag{6}$$
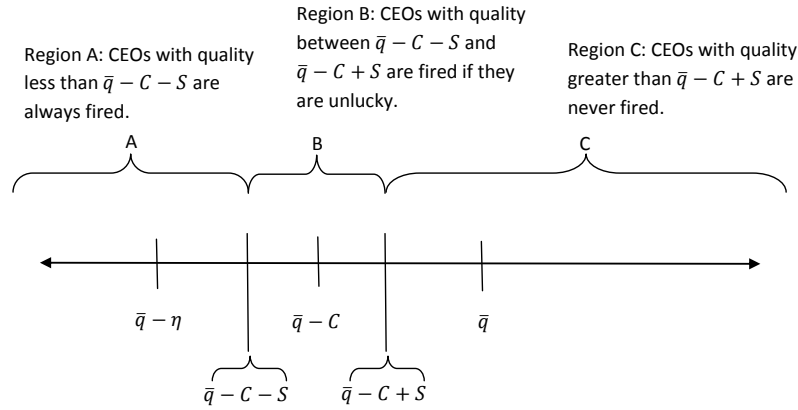
The first prediction of the misguided shareholder model is the same as under the traditional view of CEO entrenchment. However, the intuition behind the results is quite different. CEO quality improves more after an entrenched board fires the CEO because it fires the worst CEOs and protects the marginal ones. In contrast, a less entrenched board listens to the noisy desires of its shareholders and thus protects some bad but lucky CEOs and fires some marginal but unlucky CEOs. Therefore, the board that is not entrenched will often see relatively little improvement in CEO quality after firing (part a).

Predictions (b) and (c) will help us to distinguish the relative importance of the two views of entrenchment. In the standard CEO entrenchment model performance in the first period is lower if the CEO is entrenched but fired, since the CEO must be worse to get dismissed. Thus, if costs of firing are important ex ante, performance of entrenched firms should be significantly lower. However, in a model where the board is entrenched against misguided shareholders, performance in period 1 conditional on firing the CEO should be higher for the highly entrenched firms. This result stems from the fact that in less entrenched firms the firing decision depends more on shareholders' preferences, which means it depends more on noise. Thus, conditional on firing, noise is likely to be negative so performance is more likely to be worse for *less* entrenched firms (part b).

The prediction of performance in the second period conditional on retaining the CEO (part c) is also directly in opposition to the standard model. In the standard costly firing view, highly entrenched but bad CEOs are not fired and thus future performance lags. If instead entrenchment reflects the ability of the board to ignoring shareholder whims, then boards that are less entrenched cannot ignore shareholders and thus their decisions are more dependent on noise. Therefore, more marginal CEOs are fired and more low-quality CEOs are retained. As a result, in the next period the retained bad CEOs will bring down the performance of the retained group relative to more entrenched firms where the board ignores noise and therefore only retains relatively good CEOs. Thus, entrenched boards have stronger future performance (part c).

Both prediction (b) and (c) stem from the idea that less entrenched firms listen to shareholders and thus are more affected by noise. Therefore, less entrenched firms make worse (more noise filled) decisions.

The central ideas of the misguided shareholder model are most easily seen by looking at Figure 1, which shows the different regions for CEO quality and the outcomes that may occur in each case. If the CEO quality realization, $\widehat{q}_1$, is in region A of the figure then the CEO is very low quality and

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Region A: CEOs with quality less than $\bar{q} - C - S$ are always fired.

Region B: CEOs with quality between $\bar{q} - C - S$ and $\bar{q} - C + S$ are fired if they are unlucky.

Region C: CEOs with quality greater than $\bar{q} - C + S$ are never fired.

A   B   C

$\bar{q} - \eta$ $\bar{q} - C$ $\bar{q}$

$\bar{q} - C - S$ $\bar{q} - C + S$

Figure 1   Regions of possible CEO quality.

is fired for any S and C. If the CEO quality realization is in region C then CEO quality is high enough to allow for retention. However, if the CEO quality realization is in region B, then firing will depend on the realization of the noise.[11] CEOs with quality between $\bar{q} - C - S$ and $\bar{q} - C$ would always be fired if shareholders could be ignored. But if the firm is required to pay attention to shareholders, some of these low quality CEOs will be retained as a result of lucky outcomes. At the same time, CEOs with quality between $\bar{q} - C$ and $\bar{q} - C + S$ would not be fired if shareholders could be ignored, but the existence of misguided shareholders will cause some of these CEOs to be fired. However, note that although the noise causes the retention of some CEOs and the firing of others, the overall effect is not beneficial, because the CEOs fired as a result of shareholder preferences are better quality than those retained. This is our main and relatively intuitive point—listening to shareholders may add noise to the firing decision, and this may decrease the quality of the decision.

Note that in Figure 1, we have assumed η to be quite large. It is this high level of noise that makes shareholder responsiveness result in lower performance. If η were instead less than $\bar{q} - C$ then no CEOs with quality less than $\bar{q} - C$ would ever be fired: in this case shareholders prefer to fire even the lucky ones. Under this assumption, listening to shareholders would strictly improve the quality of the firing decision. Corollary 1 shows that if shareholders observe CEO quality with little noise, listening to shareholders helps performance, while if shareholders have a low signal to noise ratio they are best ignored.

Finally, it is interesting to consider how the effect of an increase in S depends on C. The following corollary demonstrates that it is more important to ignore shareholders if C is low.

COROLLARY 2. *The positive effect on second period performance of ignoring shareholders (lower S) is larger if the cost of firing the CEO, C, is lower.*

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[11] It is interesting to note that if $S > C$ then above average, but unlucky CEOs will be fired. We shown a picture with $S < C$ only as an illustration.

This is the intuitive result of potentially listening to misguided shareholders. The firing decision for a CEO that is not entrenched—for example, a new CEO or a CEO with many independent directors—is more easily compromised by listening to shareholders. This is essentially the reverse of the idea that listening to shareholders helps overcome high costs of firing. Here we see that it is possible that high costs of firing may insulate the firing decision from noise.

Before we move to the data, we want to be clear that our model does not say that ignoring shareholders unambiguously improves the firm: . First, we are only discussing the quality of the CEO firing decision—a relatively rare event. And second, we are pointing out that it is possible that when the noise in shareholder beliefs is sufficiently large it may improve the firing decision to implement policies that reduce the need to listen to shareholders. Alternatively, if it is very costly to fire the CEO then agitation, even if it is sometimes misguided, may play a positive role by convincing a board to fire a low quality CEO even when the personal costs are high. This is presumably what shareholders have in mind when they agitate rather than let the board come to its own decision. At the same time entrenchment may protect the board and the CEO from misguided shareholders, as suggested by our earlier description. We now turn to the data to examine the impact of entrenchment on performance, which will provide some insight into which of the two counteracting models of entrenchment dominate in our sample of companies.

3. Data

3.1. Data sources and sample construction

Since our main interest will be in exploring the impact of CEO dismissals on firm performance, we begin by constructing a panel of CEO employment by firm. Our sample of CEOs is derived from Execucomp, which collects compensation data on the top management teams of S&P 1500 firms and records the beginning and end dates of CEO tenure. We merge the CEO service dates with CRSP and Compustat, and the resulting sample consists of CEO-firm-year level observations of S&P 1500 firms over the period 1994 to 2007.

We identify turnover as taking place in the year of the CEO's last service date, or where this date is missing, in the year of the successor's first service date. A key variable in this paper is *Forced*, an indicator variable that denotes a CEO-firm-year observation where the CEO was fired. We define a turnover as *Forced* if: 1) the turnover is not due to death, as identified in Execuomp; 2) the turnover occurs at less than 60 years of age; and 3) the CEO is not subsequently reported in Execucomp as the CEO of another firm. Condition 2 assures that we are not mistakenly capturing natural turnover due to retirement.[12] Any departures below age 60 are likely either forced or voluntary moves to other companies; condition 3 diminishes this latter possibility.

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[12] We chose the age of 60 because CEOs are typically under three-year employment contracts and most CEOs retire at age 65. Therefore, with no renewal of the CEO's employment contract, retirements would typically occur at ages 62 to 65, and very unlikely before age 60. Age 60 is also employed as a cutoff for determining forced versus natural turnover in Parrino (1997) and Jenter and Kanaan (2008).

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Our primary measure of entrenchment is the Gompers et al. (2003) Governance index ("G-Index"). This index measures the number of antitakeover provisions (out of a total of 24) that a company has in place. These provisions range from bylaws that restrict shareholder voting and permit greenmail payments to whether companies are subject to state-level antitakeover laws. Higher values of the index correspond to weaker governance. This index was tracked by the Investor Responsibility Research Center (IRRC) every 2 to 3 years during 1990 to 2006 for the set of S&P 1500 firms. We use lagged values of the G-Index in interim years until updated index values are recorded.[13] Given this practice of using stale values, we treat 2007 as the last year in which the G-Index is reliably recorded, and the final year of CEO turnover we examine; however, we use data in subsequent years to evaluate performance post-turnover.

As an auxiliary measure, we use the Bebchuk et al. (2009) Entrenchment index ("E-Index"). This E-Index is composed of 6 of the 24 provisions of the G-Index, which Bebchuk et al. (2009) demonstrate to be most strongly associated with firm performance. Four of these provisions limit shareholder influence: staggered boards, limits to shareholder amendments of bylaws, supermajority requirements for mergers, and supermajority requirements for charter amendments. Two provisions, the poison pill and golden parachute, increase the cost of hostile takeovers.

The G-Index is probably the most widely-used measure of entrenchment, having been central to the first work that established the relationship between governance quality and firm value (Bebchuk and Cohen (2005), Cremers and Nair (2005), Core et al. (2006)). The E-Index has also been used in over 150 studies of entrenchment.[14] Both of these measures are accepted as capturing the traditional notion of entrenchment, where shareholders are weak and/or CEOs are powerful—but no distinction is made between the two cases.

We view the G- and E-Indices as better proxies for weak shareholders than powerful CEOs. We offer three reasons. First, many provisions of these indices explicitly relate to the ability of shareholders to exercise their power—by making it difficult to call shareholder meetings, reach a threshold majority for approving measures, hold confidential votes, or vote out directors. These provisions generally do not relate to the board's ability to monitor or discipline the CEO. Second, this interpretation is consistent with the empirical findings and the model predictions, which are predicated on the S-interpretation of entrenchment. Third, this interpretational also provides a rationale for the empirical finding, documented in Gillan et al. (2007), that high G-Index and board independence are positively correlated. We will elaborate on these latter two points in Section 4.6.

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[13] ISS Governance Services acquired IRRC in 2005 and changed the data collection methodology starting in 2007. The new methodology does not collect all the variables needed to create the G-Index, so it can not be constructed after 2006.

[14] As catalogued on Lucian Bebchuk's website, http://www.law.harvard.edu/faculty/bebchuk/studies.shtml.

We also consider board independence, or the fraction of independent directors on a board, as a measure of entrenchment. Director independence is associated with lower compensation (Brick et al. (2006)) and greater performance-sensitivity of CEO turnover (Huson et al. (2004), Huson et al. (2001), Weisbach (1988)). Therefore, some view independent boards as an important characteristic of well-governed firms. However, others view director independence as a form of indifference: neither heavily beholden to the CEO nor effective champions of shareholder interest. Bhagat and Black (1999) go further, calling them "lapdogs rather than watchdogs," since even independent directors require the continued support of management to be renominated to the company's slate. Therefore, we view director independence as a better measure of C, rather than S. It is questionable how responsive independent directors are to shareholders. However, it is clear that dependent directors have less power over the CEO than independent ones. This interpretation is applied in Section 4.6, where we explore empirical support for the prediction in Corollary 2.

Our primary measure of firm performance is accounting returns, defined as the change in operating profits divided by total assets (as in Huson et al. (2004)). We consider changes in operating returns (ΔROA) in the 1- to 3-year periods leading up to and following CEO turnover. The ROA measures are industry-year adjusted, by subtracting the median ROA values in the corresponding 2-digit SIC industry that year.

3.2. Summary Statistics

Table 1 reports summary statistics for the full sample and the subsample of observations where *Forced*=1. The rate of fired CEOs in our sample is 4.3%, with 1,304 observations of forced turnover. There are no significant differences in firm size or valuation between the full sample and the set of firms that have fired CEOs. However, firms with forced turnover have had worse stock returns, ROA, and higher stock return volatility in the year prior to turnover. This is consistent with performance and stability being an important driver of CEO termination decisions. At 6.2 years, mean tenure is lower for fired CEOs compared to the sample average of 6.8; this is consistent with greater vulnerability earlier on the job. However median tenure is 5 years for both the full sample and the subsample of *Forced*=1 observations.

Table 1 also reports summary statistics on measures of firm governance, including G-Index, E-Index, and the fraction directors that are independent. There are fewer observations for these variables, as coverage in the IRRC database is poorer before 1999, ¡¡FIX THIS UP - IT MAKES NO SENSE¿¿ and also Execucomp covers 400-500 firms outside of the improves after 1999 relative to the Execucomp sample. The median values of the G- and E-Indices are 9 and 2 respectively. The median firm has a board with 67% independent directors. There are no notable differences in these measures between the full sample and the subsample of fired CEOs.

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4. Results

We examine the predictions of the two models of entrenchment. First, we examine the prediction that is common to the two views of entrenchment: that entrenched firms experience greater improvements in performance after forced turnover. Second, we examine the two cases where the two views offer differing predictions. Is performance worse in entrenched firms before CEOs get fired? And when CEOs are *not* fired after poor performance, do more entrenched CEOs subsequently perform better or worse?

4.1. Effect of entrenchment on forced turnover

We begin by examining the relationship between our measures of entrenchment, the G- and E-Indexes, and forced turnover. This serves as a basic check on whether the entrenchment variables capture differences across firms in the ease with which the board may fire the CEO. Table 2 estimates a logit model of the probability that a CEO j of firm i experiences a forced turnover in year t, using

$$Pr(Forced_{ijt}) = \Gamma(\beta_0 + \beta_1 Entrenchment_{it} + \beta_2 X_{ijt} + \epsilon_{ijt}), \tag{7}$$

where β_1 estimates the effect of entrenchment on forced turnover and X is a matrix of control variables. Errors ϵ_{ijt} are assumed to be independent within but not across firms.

Column 1 shows that the G-Index is negatively correlated with forced turnover, though this relationship is not significant. Earlier work (e.g., Brickley (2003)'s survey article) emphasizes the importance of tenure in predicting forced turnover. Therefore, column 2 includes tenure as a control, and shows that tenure is negative and significantly associated with forced turnover. This result is consistent with interpreting tenure either as a proxy for CEO quality—since over time, only high-quality CEOs survive—or as a proxy for entrenchment—as CEOs gradually find ways of securing their positions over time. Hermalin and Weisbach (1998) in fact argue that it is higher-quality CEOs who will naturally have the opportunity to entrench themselves, which gives rise to the negative relationship between tenure and forced turnover.

If tenure and the G-Index are substitutable forms of entrenchment, then the G-Index may be important in alleviating the firing risk of newer CEOs, while less consequential for the firing decisions of long-tenured CEOs. In Figure 2, we examine the relationship between CEO tenure and forced turnover for entrenched versus non-entrenched CEOs. Figure 2 plots the rate of forced CEO turnover across quartile groupings of CEO tenure, in firms with above versus below median G-Index values. The figure shows that forced turnover is higher for untenured CEOs in low-entrenchment firms, suggesting that the entrenchment measures captured by the G-Index provide particularly

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valuable protection for relatively vulnerable CEOs.[15] This protective effect of entrenchment, how-ever, does not persist for CEOs with over 5 years of tenure.
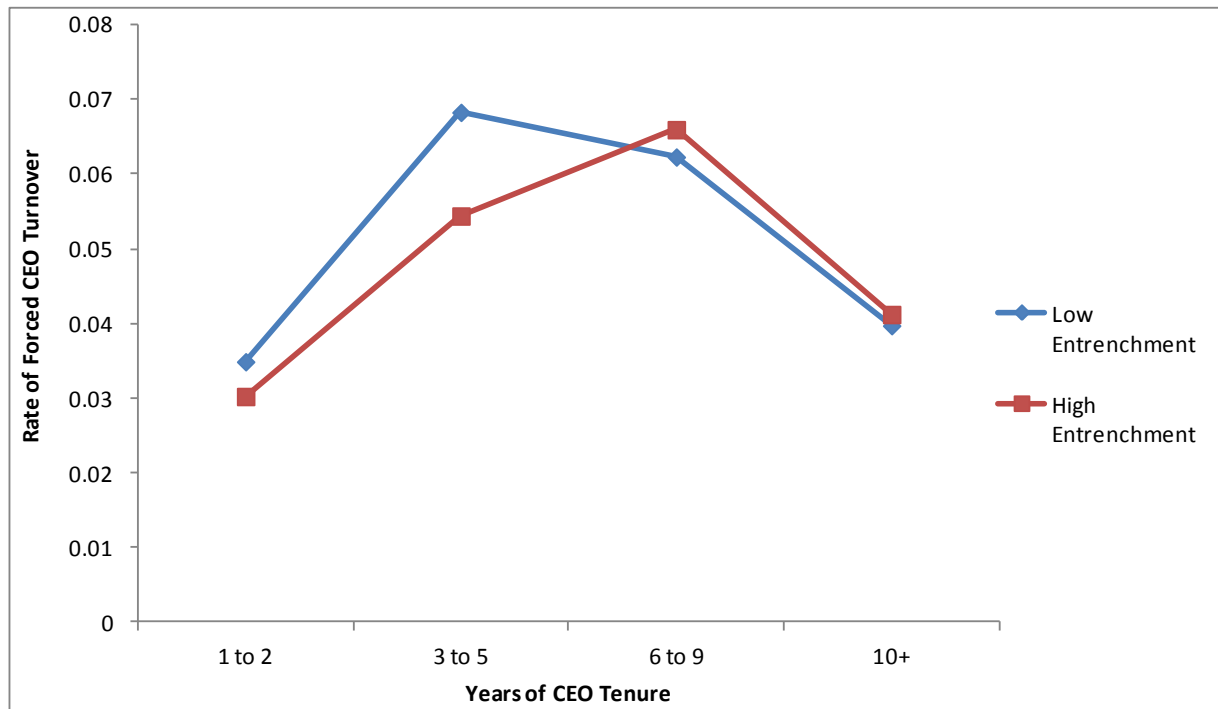
**Figure 2** **The Relationship Between Tenure and Firing.**

Columns 3 and 4 of Table 2 present the regression equivalent of Figure 2 by examining the relationship between tenure and forced turnover in separate subsamples of CEOs: CEOs with 5 or fewer versus more than 5 years of tenure.[16] Column 3 shows that the entrenchment has a significantly negative effect on turnover in low tenure CEOs; there is no significant effect among the high tenure CEOs in column 4. Columns 5 and 6 include year and industry effects. The estimates in column 5 indicate that a 10-point increase in the G-Index, a move from a Democracy (G$\leq$5) to Dictator (G$\geq$14) portfolio, is associated with a 40% reduction in the odds of forced turnover for low tenure CEOs. Columns 7 and 8 use the E-Index as the entrenchment measure, and show that entrenchment has a more negative effect on the forced turnover of untenured CEOs.

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[15] The hump-shaped curve of turnover is likely because boards may need several years of data before they can determine CEO quality. Therefore, it is highly unlikely for a CEO to be fired in his first year. The rate of firing may then subsequently increase, then decrease with tenure, as CEO quality improves with survival.

[16] Note that the median CEO in the sample has 5 years of tenure

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4.2. Performance Post-Turnover

Both Propositions 1a and 2a predict that the operating response should improve more following the firing of entrenched CEOs. Before turning to regression analyses, we examine the basic patterns in the data presented in Figure 3, which plots the operating performance of firms in the 3 years surrounding forced turnovers. Two lines are plotted, with the sample split at the median value of the G-Index. The picture shows that performance rebounds in years subsequent to turnover, and this effect is more prominent among high-entrenchment firms.
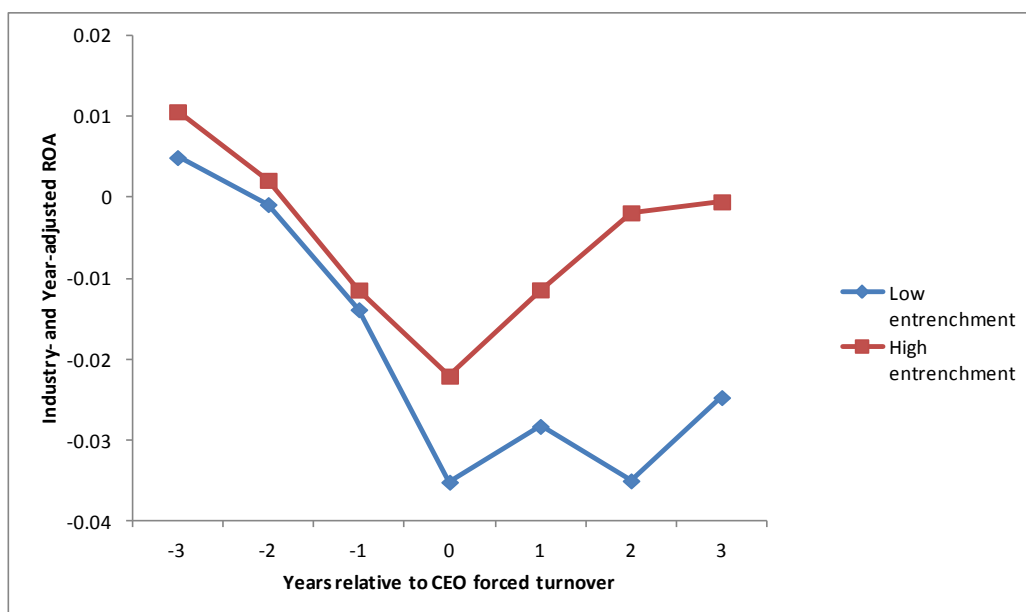
Figure 3   Performance Around Forced Turnover.

The regression equivalent of Figure 3 is presented in Table 3. Table 3 examines how the operating performance of a firm that has fired its CEO changes with the level of entrenchment. For firm i that fires its CEO in year t, Table 3 estimates

$$\Delta ROA_{i\,[t_1,t_2]} = \beta_0 + \beta_1 Entrenchment_{it} + \beta_2 X_{it} + \epsilon_{it}. \tag{8}$$

The sample is the set of firm-year observations where the CEO was fired. ROA is adjusted by the median ROA of the corresponding 2-digit SIC industry and year. t_1 and t_2 correspond to the interval over which the change in ROA is measured, relative to the year of forced turnover. As in Gompers et al. (2003) and Core et al. (2006), we use median regressions in order to limit the

influence of outliers. Control variables in X include lagged ROA, and measures of firm size and firm valuation (Core et al. (2006)).

Columns 1 and 2 in Table 3 use the G-Index as the measure of entrenchment. The dependent variable in column 1 is the $\Delta ROA[0,2]$, or the change in ROA from the year of a CEO's firing to two years after. Column 1 shows that entrenched firms experience a larger increase in post-turnover performance. In column 2, the dependent variable $\Delta ROA[-1,2]$ is the change in ROA from year prior to the CEO's firing to two years after. This measure more cleanly compares the performance of the firm under the outgoing CEO to that of the incoming CEO, since performance in the turnover year is attributable to both. Results are similar to those in column 1. Columns 3 and 4 consider E-Index as an alternate measure of entrenchment; coefficients are positive but insignificant.

These results are consistent with both the traditional and misguided shareholder views of entrenchment. Under the former, entrenchment shields low-quality CEOs, so firms enjoy large performance improvements when they are replaced. Under the latter view, entrenched boards fire based on quality rather than noise. Therefore, succeeding CEOs are superior to the outgoing ones and performance improves.

4.3. Performance Pre-Turnover

Next we examine Propositions 1b and 2b, regarding the relationship between entrenchment and the pre-firing performance of dismissed CEOs. Here the two views of entrenchment make distinct predictions. The traditional view predicts that pre-firing performance will be worse for entrenched CEOs, because entrenchment protects low-quality CEOs. In contrast, the misguided shareholders view predicts that entrenchment is associated with *better* performance prior to firing. Because firing decisions of less entrenched boards depend more on noise, they are likely to respond to negative, but noisy, realizations of firm performance by firing the CEO. Whereas more entrenched boards would retain good but unlucky CEOs, less entrenched boards would fire them.

We begin by returning to the plots of ROA in years surrounding forced turnover in Figure 3. In years prior to turnover high entrenchment firms actually seem to outperform low entrenchment firms. This is inconsistent with the traditional view of entrenchment.

We now examine these patterns in a regression framework. Table 4 uses median regression in a specification similar to Table 3 to examine the relationship between entrenchment and pre-firing performance. Column 1 considers the change in ROA from the year prior to forced turnover to the year of turnover. Column 2 considers a longer window, from two years prior to turnover to the turnover year. Both columns 1 and 2 show that entrenchment, as measured by the G-Index, is positively related to pre-dismissal performance. Columns 3 and 4 present similar results using

the E-Index measure of entrenchment, though we note that the coefficient on E-Index is significant only for the longer window in Column 4.

The standard model predicts that entrenched CEOs must perform significantly worse in order to get fired. However, Table 4 finds just the opposite: higher entrenchment is associated with *better* performance prior to turnover. This result supports instead the alternative view of entrenchment, in which protecting boards from shareholders can improve the firing decision.

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4.4. Performance of Retained CEOs

Finally we examine Propositions 1c and 2c, regarding the future performance of retained CEOs. The traditional view holds that high-entrenchment firms retain CEOs who are on average worse than low-entrenchment firms; therefore future performance will be worse for entrenched firms. The misguided shareholders view holds that entrenchment measures help shield the board against the noise-induced demands of shareholders, and allows them to make higher-quality firing decisions. Entrenched boards will retain better CEOs and therefore have better future performance.

In Table 5, we examine the relationship between entrenchment and future performance of retained CEOs. Column 1 shows a specification similar to that of Table 3 column 2, examining the relationship between entrenchment, as the G-Index, and future performance, as $\Delta ROA[-1,2]$, using a median regression:

$$\Delta ROA_{i\,[-1,2]} = \beta_0 + \beta_1 Entrenchment_{it} + \beta_2 X_{it} + \epsilon_{it}. \tag{9}$$

The major difference is in the sample: in Table 3 the sample is the set of fired CEOs and in Table 5 the sample is the set of retained CEOs. Further, these observations are such that no turnover has occurred in the prior year and subsequent two years. This restriction ensures that the change in ROA measured is attributable to the current CEO. Column 1 shows no notable relationship between entrenchment and future performance.

However, because firings are so rare, this specification essentially estimates the relationship between entrenchment and future performance across firms, *on average*. However, there may be many other factors that drive this relationship; for example, on average, entrenchment might be correlated with other "bad governance" factors that depress performance, but that are unrelated to firing decisions of boards. These factors are outside the scope of our model and its implications. Instead, we want to focus our tests on a sample of observations where the level of entrenchment is relevant to the firing versus retention decisions of the board—that is, where an *active* retention decision was made. This intuition suggest a more nuanced test that involves focusing on the performance of CEOs who were actually at-risk of being fired, but were instead retained.

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To implement this test, we use an approach similar to that of Danzon et al. (2007), in which we use a first stage regression to construct a "propensity of being fired." We use these estimates to focus on the effect of entrenchment on performance when CEOs who had a high firing propensity were retained. Under the misguided shareholders view, shareholders are likely to pressure boards to fire CEOs who have observable characteristics associated with being fired—such as poor prior performance—but they are not as informed about CEO quality as the board. If these CEOs are not fired, we infer that it is likely that the board overrode the shareholders' wishes because of their superior information. If entrenchment protects the ability of the boards to override misguided shareholders, then entrenchment should be associated with better performance among CEOs who were observably firing targets but were not fired.

We estimate this firing propensity, $\widehat{Forced}$, using the logit regression

$$Pr(Forced_{ijt}) = \Gamma(\beta_0 + \beta_1 CEO\,Tenure_{ijt} + \beta_2 ROA_{it-1} + \beta_3 AnnualStockReturn_{it-1}$$
$$+ \beta_4 AnnualReturnVolatility_{it-1} + \alpha_t + \alpha_y + \epsilon_{ijt}), \quad (10)$$

where α_t and α_y are year and industry fixed effects, respectively. The controls represent characteristics that are readily observable to shareholders, which they can use to pressure the board. These include information about the CEO's tenure, prior performance, or return volatility that help shareholders formulate their opinion about the CEO. We interpret the error term as capturing all the inside information that is not easily documentable—and therefore, not easily processed by shareholders—but used by the board to make its decision.

We include the fitted value from the above equation, $\widehat{Forced}$, as a control in column 2. In column 3 we express $\widehat{Forced}$ as indicator variables corresponding to terciles groupings of $\widehat{Forced}$. We note that the propensity to be fired does not by itself seem to predict future performance.

However, our goal is to focus on the relationship between entrenchment and future performance for firms where boards made an active retention decision—say, in the tercile of CEOs with the highest firing propensity. Therefore, in column 4, we interact G-Index with the tercile indicators for $\widehat{Forced}$ and estimate

$$\Delta ROA_{i\,[-1,2]} = \beta_0 + \sum_{k=1}^{3} \beta_{1k} Entrenchment_{it} * (\widehat{Forced} - Tercile\,k)_{it} + \beta_2 X_{it} + \epsilon_{it}. \quad (11)$$

The misguided shareholder view predicts that $\beta_{13} > 0$, that entrenchment is associated with higher performance, especially among CEOs who the board protected despite observable factors that would have supported a firing decision. The costly firing view predicts $\beta_{13} < 0$, since an entrenched board retained a CEO who should have been fired.

Column 4 shows that $\beta_{13} > 0$ is positive and significant. A 10-point increase in the G-Index, effectively moving from a Democracy to a Dictator portfolio, raises $\Delta ROA_{i[-1,2]}$ by 0.7 percentage points—a 12 to 24-fold increase relative to the typical (median, mean) 3-year change in ROA.

In columns 5 and 6 we use the E-Index as our measure of entrenchment. Column 5 shows that *on average*, high E-Index is associated with lower future performance. However, when interacted with tercile indicators of $\widehat{Forced}$, column 6 shows that entrenchment has a large and positive effect on future performance for CEOs who were the likeliest firing targets. Relative to CEOs with low firing propensity, a 10-point increase in entrenchment among high-firing propensity CEOs raises future performance by 1.7 percentage points; this represents a 28- to 56-fold increase relative to the typical 3-year change in ROA. The results of this table show that entrenchment is associated with higher-quality board decisions, lending support to our misguided shareholders view.

4.5. Alternative Measures of Entrenchment

The results so far provide evidence for the view the entrenchment serves to buffer the board from misguided shareholders. Therefore entrenched boards make higher-quality firing and retention decisions, and their firms subsequently perform better.

This is support for the validity of the Board Protector view of entrenchment. But moreover, this evidence is informative for how our proxy for entrenchment, the G-Index, affects firms. The G-Index is arguably the most widely used measure of entrenchment, loosely understood as making it harder to fire CEOs. However, the fact that this proxy supports evidence for the Board Protector view of entrenchment rather than the CEO Protector view, suggests that the G-Index shields the board from shareholders rather than weakens it against the CEO.

This is consistent with the fact that the G-Index is an index of antitakeover provisions. Many of the index's 24 provisions relate to the exercise of shareholder power: limitations on the ability to call shareholder meetings without prior board approval, confidential shareholder voting, staggered board elections, supermajority requirements for charter amendments or to approve mergers, etc. Therefore, it may be reasonable to broadly interpret the G-Index (as well as the related E-Index) as a better measure of S rather than C.[17]

This reasoning also naturally leads us to consider whether other common proxies for entrenchment display more C- versus S-like characteristics. For instance, having independent directors is often viewed as important to good governance. A priori, we would argue that director independence is a better measure of C, rather than S. Due to their employment and reporting status, it is clear that dependent directors have less power over the CEO than independent directors. However, it

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[17] Admittedly though, the G-Index also includes other provisions, such as golden parachutes and the state-level antitakeover laws, that are not as clearly interpretable as limitations on shareholder power over boards.

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is unclear how responsive independent directors are to shareholders. They may be indifferent, or ineffectual, due to their insufficient knowledge of the business.

In Table 6, columns 1 and 2, we consider the fraction of dependent directors as a proxy for entrenchment. If director dependence is a proxy for low S, then we would expect the coefficient on $\% \, Dependent \, Directors * (\widehat{Forced - Tercile} \, 3)$ to be positive. If director dependence is a proxy for high C, then the coefficient should be negative. The result in column 2 is inconclusive. In columns 3 and 4, we consider another measure of entrenchment, CEO tenure. As previously discussed, CEO tenure is likely endogenously related to CEO quality, and therefore CEO power. A CEO's influence likely grows with tenure, both generally within the firm and specifically over the board— as outgoing directors are increasingly replaced with candidates who are favorably disposed to the CEO. Therefore, we believe CEO tenure is a good proxy for high C. Under this interpretation high tenure should be associated with worse future performance. In column 4 we see that the coefficient on $CEO \, Tenure * (\widehat{Forced - Tercile} \, 3)$ is marginally significantly negative; that is, when an entrenched, poorly performing CEO was retained, the firm subsequently performed poorly.

Clearly, it is not possible to determine a mutually exclusive set of proxies for C vs S. However it is interesting to consider whether proxies traditionally associated with "entrenchment" are more closely aligned with the Board Protector or CEO Protector roles.

4.6. Split Sample Results

Allowing for two views of entrenchment, corresponding to C and S, introduces the possibility that these components can interact or vary independently. In contrast to the traditional notion of entrenchment, which corresponds to a low S and/or high C, firms may actually have entrenchment characteristics more consistent with a low S and low C, or high S and high C. In other words, boards can be rather autonomous (low S, low C), or under heavy pressure from both shareholders and CEOs (high S, high C). In particular, Corollary 2 suggests that the ideal combination for board decisions is low S and low C—such firms' boards' decisions are least distorted from the ideal.

In Table 7, we examine whether the benefits of entrenchment documented among high firing propensity CEOs—i.e., due to the Board Protector (low S) interpretation of entrenchment—is more pronounced among low C or high C firms. In columns 1 and 2, we consider the percent of dependent directors as a measure of C, for reasons discussed in Section 4.5. The benefits of entrenching the board (low S, as measured by the G-Index) are concentrated in column 1, where where directors have more power over the CEO (low C, as measured by low fraction of dependent directors). Results in columns 3 and 4, which use the E-Index as the measure of S, are more mixed. Columns 5 to 8 use CEO tenure as measure of high C, and also show that the entrenching benefit of boards is concentrated among low-CEO power firms in columns 5 and 7. Therefore, we

conclude that firms where boards are entrenched against shareholders, but have power over the CEO, make the best firing decisions.[18] We are unable to empirically test the full implications of the model because finding clean proxies for S versus C are not possible. However, we believe that the collective evidence support a multi-dimensional notion of "entrenchment" that affects firm decisions via various parties.

5.   Conclusion

In this paper, we analyze the role of entrenchment on performance surrounding CEO dismissal. We emphasize that entrenchment has potential costs and benefits, and the choice of entrenchment involves a trade-off. We illustrate this through a model that enumerates the trade-off between a traditional 'costly firing' view of entrenchment and an 'ignoring misguided shareholders' view based on the premise of performance misattribution. While our results lean in favor of the ignoring misguided shareholder model, we emphasize that our intention is not to prove or disprove any particular view. Rather, we hope to shift the emphasis of the debate on entrenchment to considering the potential trade-offs involved, and to focus the discussion more closely on the actual decisions associated with a firm's governing bodies, such as CEO dismissal or the decision to merge.

It is important to emphasize that our findings do not mean that corporate governance provisions are 'good' or 'bad' for the firm in general as they may affect many aspects of firm performance. We show that if the board is less responsive to shareholders then it seems to make better firing decisions. In a similar vein Kadyrzhanova and Rhodes-Kropf (2010) show when firms with more antitakeover statues are able to obtain higher takeover premium. However, these same provisions may cause the firm to be less well run in other ways. For example, Bertrand and Mullainathan (2001) conclude that CEOs in firms that are less well governed are able to skim and get paid for good luck. Thus, it seems likely that governance statutes have tradeoffs - they may improve big decisions like CEO turnover and alter payments in mergers and acquisitions but they may also allow cream skimming by the CEO.

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[18] These results also rationalize the finding documented by Gillan et al. (2007) that independent directors and the G-Index are positively correlated across firms. High director independence firms (low C) tend to have high values of the G-Index (low S), because this set of conditions is ideal for board decision-making. Another possibility is that high C firms benefit from high S, since powerful shareholders can keep powerful CEOs in check. Boards are pressured by both the CEO and shareholders, but this balance may result in better decisions than when one party dominates.

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Appendix

Proof of Proposition 1:

a) To prove that $E[q_2^H - q_1^H \mid fired] > E[q_2^L - q_1^L \mid fired]$ note that

$$E[q_2 - q_1 \mid fired] = \overline{q} - E[q_1 \mid fired] = \overline{q} - E[q_1 \mid q_1 < \overline{q} + S - C]. \tag{A1}$$

Since

$$E[q_1 \mid q_1 < \overline{q} + S^H - C^H] < E[q_1 \mid q_1 < \overline{q} + S^L - C^L] \tag{A2}$$

because $S^H - C^H < S^L - C^L$. Therefore, the expected improvement in CEO quality is greater after firing an entrenched CEO.

b) This is a direct consequence of equation (A2).

b) To show $E[\pi_2^H \mid retained] < E[\pi_2^L \mid retained]$ note that

$$E[\pi_2^H \mid retained] = E[q_1 \mid q_1 \geq \overline{q} + S^H - C^H] + \widehat{\phi} \tag{A3}$$

and

$$E[\pi_2^L \mid retained] = E[q_1 \mid q_1 \geq \overline{q} + S^L - C^L] + \widehat{\phi} \tag{A4}$$

if $S^L - C^L < 0$ or

$$E[\pi_2^L \mid retained] = E[q_1 \mid q_1 \geq \overline{q}] + \widehat{\phi} \tag{A5}$$

if $S^L - C^L \geq 0$. Either way $E[\pi_2^H \mid retained] < E[\pi_2^L \mid retained]$ because $S^H - C^H < S^L - C^L$.

Proof of Corollary 1: The probability that the board decides to fire the CEO is conditional on both true CEO quality and the noise the shareholders attribute to the CEO.

$$\text{Prob}[d_b = 1 \mid \widehat{q}_1, \widehat{q}_s] = \begin{cases} 1 & \text{if } \widehat{q}_1 < \overline{q} + S - C \text{ and } \widehat{q}_s < \overline{q}, \\ 1 & \text{if } \widehat{q}_1 < \overline{q} - S - C \text{ and } \widehat{q}_s \geq \overline{q}, \\ 0 & \text{if } \widehat{q}_1 \geq \overline{q} + S - C \text{ and } \widehat{q}_s < \overline{q}, \\ 0 & \text{if } \widehat{q}_1 \geq \overline{q} - S - C \text{ and } \widehat{q}_s \geq \overline{q}. \end{cases} \tag{A6}$$

The dual inequalities correspond to the decision of the board and the beliefs of the shareholders. If the shareholders believe the CEO should be fired, $\widehat{q}_s < \overline{q}$, then it becomes harder for the board to retain the CEO. As $S \to \infty$ the probability that the board attempts to fire, Equation(A6) becomes

$$\text{Prob}[d_b = 1 \mid \widehat{q}_1, \widehat{q}_s] = \begin{cases} 1 & \text{if } \widehat{q}_1 < \infty \text{ and } \widehat{q}_s < \overline{q}, \\ 1 & \text{if } \widehat{q}_1 < -\infty \text{ and } \widehat{q}_s \geq \overline{q}, \\ 0 & \text{if } \widehat{q}_1 \geq \infty \text{ and } \widehat{q}_s < \overline{q}, \\ 0 & \text{if } \widehat{q}_1 \geq -\infty \text{ and } \widehat{q}_s \geq \overline{q}. \end{cases} \tag{A7}$$

Therefore, if $\widehat{q}_s = \widehat{q}_1$ then $E[d_b \mid \widehat{q}_1 < \overline{q}] = 1$ and all below average CEOs will be fired.

Proof of Proposition 2: The proof of the first statement in the proposition is identical to the proof of proposition 1 and is omitted. When higher entrenchment means smaller S then we have the following:

The CEO is fired if 1) $\widehat{q}_1 < \overline{q} + S - C$ and $\widehat{q}_1 + \widehat{\eta}_1 < \overline{q}$ or if 2) $\widehat{q}_1 < \overline{q} - S - C$ and $\widehat{q}_1 + \widehat{\eta}_1 \geq \overline{q}$, otherwise he is retained. We have assumed that $\eta > S + C$. This results in three regions. When $\widehat{q}_1 < -S - C$ the CEO is fired whether or not she is lucky. And when $-S - C \leq \widehat{q}_1 \leq S - C$ the CEO is fired if unlucky and retained if lucky. And when $S - C < \widehat{q}_1$ then the CEO is retained.

a) To prove that $E[q_2^H - q_1^H \mid fired] > E[q_2^L - q_1^L \mid fired]$ note that

$$E[q_2 - q_1 \mid fired] = \overline{q} - E[q_1 \mid fired]. \tag{A8}$$

Therefore, we need to show that $E[q_1^H \mid fired] < E[q_1^L \mid fired]$. We know that $E[q_1 \mid fired]$ is either

$$E[q_1 \mid q_1 < \overline{q} - S - C]Prob(q_1 < \overline{q} - S - C \mid fired)$$
$$+ E[q_1 \mid \overline{q} - S - C < q_1 < \overline{q} + S - C]Prob(\overline{q} + S - C < q_1 < \overline{q} - S - C \mid fired)/2 \tag{A9}$$

Given that F_q is uniform $[-q, q]$ and $\overline{q} = 0$ these can be written as

$$\frac{-q - S - C}{2}\frac{q - S - C}{q - C} - C\frac{S}{q - C} \tag{A10}$$

The derivative with respect to S is

$$\frac{S}{q - C} > 0 \tag{A11}$$

which is clearly greater than zero since $q > C$ and $S > 0$.

b) Note that

$$E[\pi_1 \mid fired] = E[q_1 \mid fired] + E[\eta_1 \mid fired] + E[\phi \mid fired]. \tag{A12}$$

Part a showed that $E[q_1^H \mid fired] <= E[q_1^L \mid fired]$. We also know that $E[\phi \mid fired] = \overline{\phi}$, because the firm fixed component does not affect the firing decision. So, $\frac{\partial}{\partial S}E[\phi \mid fired] = 0$. Therefore, to prove part b) it is necessary to show that $E[q_1^H + \eta_1^H \mid fired] > E[q_1^L + \eta_1^L \mid fired]$.

If $\widehat{q}_1 < -S - C$ the CEO is fired whether or not she is lucky. However, when $-S - C \leq \widehat{q}_1 \leq S - C$ the CEO is only fired if the realized noise is $-\eta$. Therefore,

$$E[\eta_1 \mid fired] = -\eta\frac{S}{q - C} \tag{A13}$$

Therefore,

$$E[q_1 + \eta_1 \mid fired] = \frac{-q - S - C}{2}\frac{q - S - C}{q - C} - C\frac{S}{q - C} - \eta\frac{S}{q - C} \tag{A14}$$

And the derivative with respect to S is

$$\frac{S - \eta}{q - C} < 0 \tag{A15}$$

which is clearly less than zero since $S < \eta$ and $q > C$.

c) To show $E[\pi_2^H \mid retained] > E[\pi_2^L \mid retained]$ note that

$$E[\pi_2 \mid retained] = E[q_1 \mid retained] + E[\eta_2 \mid retained] + E[\phi \mid retained]. \tag{A16}$$

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The expectation of the noise and firm affect are $E[\eta_2 \mid retained] = 0$ and $E[\phi \mid retained] = \overline{\phi}$. The CEO is retained if $-S - C \le \widehat{q}_1 \le S - C$ and the CEO is lucky, and when $S - C < \widehat{q}_1$.

$$E[\pi_2 \mid retained] = \frac{q + S - C}{2} \frac{q - S + C}{q + C} - C \frac{S}{q + C} \tag{A17}$$

And the derivative with respect to S is

$$\frac{-S}{q + C} < 0 \tag{A18}$$

which is clearly negative since $S > 0$. Q.E.D.

Proof of Corollary 2: The derivative with respect to C of the derivative of $E[\pi_2 \mid retained]$ with respect to S is

$$\frac{S}{(q + C)^2} > 0 \tag{A19}$$

Thus, there is a larger negative effect of increasing S on second period performance for firms with lower C.