

# Disagreement-induced CEO Turnover\*

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## Abstract

We develop and test a new explanation for forced CEO turnover, and examine its implications for the impact of firm performance on CEO turnover. Investors may disagree with management on optimal decisions due to heterogeneous prior beliefs. Such disagreement may be persistent and costly to firms; we document that this induces them to sometimes replace CEOs who investors disagree with. A higher level of CEO-investor agreement, on the other hand, partially “protects” CEOs from being fired, thus reducing turnover-performance sensitivity. We also show that firms are more likely to hire an external CEO as a successor if disagreement with the departing CEO is higher. Disagreement declines following forced CEO turnover. Using identification based on an exogenous shock to agreement and other empirical strategies, we rule out other confounding interpretations of our findings.

*JEL classification:* G30, G34

*Keywords:* Investor-management disagreement, heterogeneous beliefs, CEO turnover, corporate governance

# 1. Introduction

**Motivation and Research Question:** Under what conditions are CEOs fired and how do boards determine who to replace them with? This is a crucial issue in corporate governance, and has generated an extensive literature that focuses primarily on the relationship between firm performance and CEO turnover and the factors that affect this relationship.<sup>1</sup> While there is broad consensus that firm performance has a statistically significant impact on forced CEO turnover, its economic significance is modest relative to what extant theory suggests.<sup>2</sup> Moreover, Huson, Parrino, and Starks (2001) find that, despite substantial changes in internal governance mechanisms, the relationship between forced CEO turnover and firm performance has not changed significantly over time.<sup>3</sup> These are puzzling stylized facts, and suggest the possibility of as-yet-unexplored factors that affect CEO turnover and replacement, factors that go beyond firm performance (see, for example, Brickley (2003)).<sup>4</sup>

The purpose of this paper is to propose and test a new explanation for forced CEO turnover that is not directly related to firm performance, and thereby illuminate another determinant of this corporate governance practice. It also attempts to shed light on the cross-sectional heterogeneity in CEO turnover-performance sensitivity and provide an explanation for the weak turnover-performance relation in some firms, even after controlling for corporate governance.

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<sup>1</sup> See, for example, Coughlan and Schmidt (1985), Warner, Watts, and Wruck (1988), Weisbach (1988), Jensen and Murphy (1990), Denis and Denis (1995), Denis, Denis, and Sarin (1997), Mikkelsen and Partch (1997), Parrino (1997), DeFond and Park (1999), Murphy (1999), Huson, Parrino, and Starks (2001), Engle, Hayes, and Wang (2003), Farrell and Whidbee (2003), Huson, Malatesta, and Parrino (2004), Song (2008), Bushman, Dai, and Wang (2010), and Dasgupta, Li, and Wang (2014).

<sup>2</sup> According to the summary of existing research in Brickley (2003), moving from the top decile to the bottom decile of firm performance increases the probability of a forced CEO turnover by four percentage points.

<sup>3</sup> Similarly, Helwege, Intintoli, and Zhang (2012) find that the trends in institutional exit, activism, and blockholding cannot explain the upward trend of CEO turnover over time. Yet, Kaplan and Minton (2012) find that the sensitivity of forced CEO turnover to firm performance appears to have intensified in the last few years, which is consistent with Guo and Masulis (2015) who find that the turnover-performance sensitivity is heightened following an improvement in board and nominating committee independence due to the change in NYSE and Nasdaq listing rules in 2003.

<sup>4</sup> For instance, Hazarika, Karpoff, and Nahata (2012) find that the likelihood and speed of forced CEO turnover is positively related to earnings management and this relation occurs both in firms with good and bad performance.

**What We Do: The Theoretical Hypothesis:** Our analysis focuses on potential disagreement between management and investors as a determinant of CEO turnover in publicly-traded firms. The basic idea is simple. Assuming the board is acting in the best interests of shareholders, the decision of whether to continue with a CEO or force the CEO out depends on the ramifications of the decision for the wealth of the firm's existing shareholders. This wealth depends on the cost of capital that must be raised to finance the project(s) the firm has. The cost of capital is a function of the investors' assessment of how the firm will perform in the *future*, something that hinges on the CEO's current project choice. The cash flow implications of this project choice cannot be unambiguously determined *ex ante* because they are estimates that depend on assumptions that have limited justification based on historical data. This means rational agents may disagree on whether a particular choice will enhance or destroy firm value (see Kurz (1994)). An example of this may be a proposed acquisition. Investors may disagree with the CEO that it is a good idea based either on their view about the challenges involved in post-acquisition integration of two disparate cultures<sup>5</sup> (see Van den Steen (2010a) for a theory of this), or the timing of the acquisition (see Bouwman, Fuller, and Nain (2009) for evidence on how acquisition timing affects success).

When investors have a high degree of confidence in the CEO's decisions, as reflected in a high level of agreement, they are more likely to endorse the CEO's choice of project and assign a high value to the firm, thereby lowering its cost of capital. However, low levels of agreement with the CEO can induce "second guessing" of the CEO's decisions by investors who are more likely to disagree that the project chosen by the CEO is value-enhancing. Anticipating such disagreement, investors will assign a low value to the firm, thereby raising the cost of capital for financing the project. Since the wealth of the existing shareholders is decreasing in the firm's cost of capital for financing the new project, these shareholders are better off when the level of agreement between the CEO and investors is higher. This means it may pay for the board, which

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<sup>5</sup> As, for example, in the HP – Compaq merger.

acts on behalf of shareholders, to replace a CEO with a sufficiently low level of agreement.<sup>6</sup> This is the essence of the recent theoretical models in which investor-management disagreement affects the firm's security-issuance decision and capital structure (e.g., Dittmar and Thakor, 2007; Boot and Thakor, 2011) through its effect on the cost of capital.

On the other hand, an important implication of this idea is that a high level of agreement would cause shareholders to put less weight on adverse past performance in their evaluation of a CEO because of greater confidence in the quality of the CEO's *future* decisions and performance. This suggests that CEO-investor agreement may act as a "security blanket" for the CEO, reducing the responsiveness to CEO turnover to poor firm performance.

This paper uses this intuition and builds on the prior literature on investor-management disagreement (e.g., Garmaise, 2001; Van den Steen, 2005 and 2010b; Boot, Gopalan, and Thakor, 2006 and 2008) to examine its implications for CEO turnover, and illustrate the interaction between the board's assessment of the level of investor-management agreement and its assessment of firm performance in CEO turnover decisions. We document empirically that disagreement between investors and management on the optimal course of corporate actions has a statistically and economically significant impact on forced CEO turnover and the turnover-performance sensitivity.

The reliance of our analysis on investors and management having heterogeneous prior beliefs about the profitability of a firm's future investment opportunities is rooted in the theory of heterogeneous priors as "rational beliefs" developed by Kurz (1994). With rational beliefs, disagreeing agents will not revise their beliefs even though it is common knowledge that different prior beliefs exist (Kreps, 1990a); nor will they converge to a common prior even with sufficient additional information provision (Andreoni and Mylovanov, 2012).

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<sup>6</sup> Theoretically, disagreement between the board and a CEO is equivalent to disagreement between shareholders and the CEO.

The persistence of investor-management disagreement is costly to the firm because higher disagreement implies a lower valuation of the firm and a higher cost of external finance, implying that the firm may forgo even those projects that its management believes have positive NPV because of the prohibitive cost of external finance. Thus, firms with relatively high levels of investor-management disagreement, especially those that are financially-constrained, may benefit by replacing their CEOs. Of course, this does not mean that all firms will expeditiously fire CEOs when the level of disagreement exceeds some threshold—the board’s ability to do this may be constrained by the “power” of the CEO and the level of entrenchment.<sup>7</sup> Each firm will trade off the benefit of reduced investor-management disagreement when the CEO is fired against the entrenchment-induced costs/difficulties faced by the board in dismissing the CEO. Cross-sectional heterogeneity in entrenchment and financial constraints means that firms will differ in the extent to which disagreement leads to the CEO being fired.

We use this reasoning to develop four testable hypotheses. First, controlling for firm performance, CEOs are more likely to be forced out when the level of investor-management disagreement is higher, *ceteris paribus*. Second, controlling for CEO entrenchment, firms are more tolerant to poor past firm performance in their CEO turnover decisions if the level of agreement is higher. Third, to the extent that those within the executive suite of the firm are more likely to have similar beliefs among each other than with investors, firms with higher levels of investor-management disagreement are more likely to hire replacement CEOs from outside the firm because an internal successor is likely to be burdened, like her predecessor, with a high level of disagreement with investors. Fourth, disagreement declines following forced CEO turnover.

**The Empirical Challenges:** The empirical analysis must confront two major challenges. First, adequate proxies for disagreement must be found. Second, one must cleanly separate the

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<sup>7</sup> Taylor (2010) suggests that the empirically observed low forced CEO turnover rate is, to a large extent, due to CEO entrenchment.

effect of disagreement from that of firm performance or a possible omitted variable. We explain below how the paper copes with both challenges.

**What We Do: The Empirical Results:** Using various measures of investor-management disagreement used in the prior literature, we find strong empirical support for these hypotheses. As for the first hypothesis, we find that the impact of disagreement on forced turnover is both statistically and economically significant. The odds of forced CEO turnover are 0.42-1.27 times higher following a one-standard-deviation increase in the level of different disagreement measures. Our finding is robust to the introduction of controls for a complete set of firm performance metrics as well as other firm characteristics and CEO attributes that are previously documented to be related to forced CEO turnover. Therefore, disagreement has an incremental effect on forced CEO turnover that goes beyond those well-known factors, including firm performance. Consistent with our first hypothesis, we also examine whether the anticipated improvement in agreement following CEO replacement is priced by the stock market. We find an answer in the affirmative.

We find further evidence on cross-sectional variations in the turnover-disagreement sensitivity that is consistent with the effect of disagreement being related to varying costs of disagreement and varying constraints that different firms have in their CEO firing decisions. Since it is the cost of external financing that drives the board's CEO replacement decision, financially-more-constrained firms are more responsive to disagreement in their forced turnover decisions. Consistent with the impact of CEO entrenchment and shareholder governance, the turnover-disagreement sensitivity is lower when CEOs are more entrenched and board oversight is weaker, but higher when shareholders have more concentrated ownership and thus can exert more influence on firm decisions.

As support of the second hypothesis, we show that the sensitivity of forced CEO turnover to past firm performance is significantly weaker for firms with a higher level of investor-

management agreement. This result holds for all measures of agreement except one (the impact of which being statistically insignificant). It suggests that past firm performance becomes less important in the board's evaluation of a CEO for dismissal when beliefs over the firm's future actions are more aligned. We also find that an external replacement for the departing CEO is more likely when the level of investor-management disagreement is higher, consistent with the third hypothesis. The odds of an external CEO hire are 0.49-1.34 times higher for a one-standard-deviation increase in the level of different disagreement measures. Lastly, consistent with the prediction of the fourth hypothesis, we find that investor-management disagreement declines following forced CEO turnover, and the decline in disagreement is greater if the fired CEO is replaced by an external hire.

**Robustness of the Empirical Analysis:** There are two questions one may raise about the robustness of our empirical analysis. One is about the extent to which the effect of disagreement on CEO turnover that we measure is contaminated by the effect of firm performance. The other concern is a possible omitted variable bias.

On the first issue, we control for firm performance in our baseline analysis by using prior-year stock and industry returns as controls. But then we go beyond this in our robustness checks and use additional performance measures as controls. These include different versions of the firm's return on assets as well as various measures of the CEO's tenure-long firm stock performance. The results survive all the robustness checks. Moreover, an additional test involving an exogenous shock to agreement due to distressed mutual fund fire sales, that we describe below, also helps to more clearly delineate the effect of disagreement from that of firm performance.

On the second issue, it is possible that both disagreement and CEO turnover are related to an omitted variable, and thus their correlation might be spurious. For example, an elevation in uncertainty about a firm's growth opportunities or technological development may increase the



possibility of different interpretations of the same information by investors and management, and this elevated uncertainty may also induce higher management turnover. We conduct three additional tests to show that our finding is not likely to be a result of this bias.

First, we conduct a falsification test by examining the relationship between disagreement and voluntary CEO turnover that is not due to mandatory or planned retirement. This involves cases where CEOs depart voluntarily to take positions in other firms or to pursue other interests. If it is an omitted variable (uncertainty) that generates the relation between disagreement and forced CEO turnover, then we should expect a similar relation between disagreement and voluntary CEO turnover because uncertainty increases voluntary management turnover too. In contrast, our disagreement hypothesis does not predict such a correlation. Because they believe that their decisions are value-maximizing, CEOs will choose not to depart voluntarily, regardless of the level of investor-management disagreement.

Second, we employ an exogenous shock, caused by distressed mutual fund fire sales, to the composition of investor base and thus investor-management agreement, and examine how it may affect forced CEO turnover. In mutual fund fire sales induced by extreme capital outflows, distressed funds are forced to sell their equity holdings with significant discounts to liquidity providers (Coval and Stafford, 2007). Existing shareholders who are not distressed are unlikely to absorb all these shares due to the holding-capacity limitations explained earlier. It follows that, in equilibrium, the new marginal investors in the stock are other liquidity providers who have a lower level of agreement than the existing shareholders (but trade to avail of a liquidity premium). Such a shock that results in a decline in agreement is exogenous because fund fire sales are driven by extreme capital outflows at the fund level (and the resulting need for liquidity), as opposed to changes in firm fundamentals for the affected stocks. It is thus a test that is designed to not only deal with the omitted variable problem, but also to provide a further delineation of the effect of disagreement from that of firm performance. We find that the

exogenous decline in agreement leads to an increased occurrence of forced CEO turnover. Note that this test does *not* rely on any empirical measures of disagreement or firm performance, and thus also enables us to circumvent any confounding interpretations of the measures.

Third, we take the inclusion of a firm in the S&P 500 as a quasi-natural experiment that causes an increase in institutional ownership of the firm. To the extent that a greater concentration of share ownership in institutional investors enhances shareholder governance, our disagreement hypothesis predicts a stronger turnover-disagreement sensitivity following the S&P 500 inclusion.<sup>8</sup> In contrast, the S&P 500 inclusion has no plausible effect on the uncertainty of a firm and the turnover-disagreement sensitivity in the firm as a result. The results of all the tests provide strong support for our disagreement hypothesis and show that the omitted variable bias is not likely to be a serious concern.

The rest of the paper is organized as follows. Section 2 develops the testable hypotheses and delineates the paper's contribution. Section 3 describes the data and the variables. The main empirical analysis appears in Section 4. Section 5 takes up issues about the robustness of the empirical analysis. Section 6 concludes.

## **2. Hypotheses Development and Delineation of Contribution**

### **2.1. Development of hypotheses**

There is ample anecdotal evidence of forced CEO departures due to disagreement between management and shareholders on the optimal course of corporate decisions. For instance, Associated Press Newswires reported on November 9, 2000, that Lloyd Ward resigned as Maytag Corp's Chairman and CEO over "a difference (of opinion) on the company's strategic outlook and direction". Similarly, Curtis Huff was ousted as CEO from Grant Prideco over frictions

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<sup>8</sup> For the role of institutional investors, both passive and active, in corporate governance, see, for examples, Hartzell and Starks (2003), Chen, Harford, and Li (2007), Gillan and Starks (2007), Crane, Michenaud, and Weston (2014), and Appel, Gormley, and Keim (forthcoming). Crane, Michenaud, and Weston (2014) suggest that even passive investors like index funds have incentives to intervene and exert influence on corporate management through proxy voting and private communication with management. Appel, Gormley, and Keim (forthcoming) show that an increase in ownership by passive institutions is associated with an improvement in corporate governance.

during the implementation of its predetermined acquisition strategy, although analysts credited Huff with “leaving the company in good shape”.<sup>9</sup> There are numerous other reports of CEOs being forced out due to difference of opinion over corporate strategy, direction, and implementation.<sup>10</sup>

As suggested in these anecdotes, investors and managers can have divergent opinions about the optimal course of actions based on the same evidence. That is, disagreement between investors and management arises not because they have different information sets, but because they interpret information in different ways. Divergent interpretations can arise from heterogeneous prior beliefs – that are all rational in the sense of Kurz (1994) – about the profitability of a firm’s future investment opportunities or the strategy of how best to implement its investment decisions.

Disagreement is costly to firms because it lowers firm valuation and makes external financing more expensive (Dittmar and Thakor, 2007), and this cost is higher for firms that are financially more constrained and hence more dependent on external equity financing. This creates a rationale for such a firm to replace a CEO who has a relatively low agreement with investors with one who investors agree more with, everything else being equal.

Disagreement and its impact on forced CEO turnover can survive as equilibrium phenomena even if investors can “vote with their feet” by selling their shares when disagreeing with management. To see this, note that there is typically cross-sectional heterogeneity among investors in their propensity to agree with management. Due to risk aversion, wealth endowment constraints, or both, investors who display higher agreement with management might not be capable or willing to absorb all the shares sold by the selling investors who have lower agreement levels. Consequently, depending on the firm, the equilibrium level of agreement of the *marginal*

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<sup>9</sup> See “Grant Prideco Shake-up Has BJ’s McShane in Charge” by *Platts Oilgram News* on June 25, 2002.

<sup>10</sup> For examples, see the resignations of CEO Richard White from Veritas DGC, of CEO Warren Musser from Wayne, and of CEO Edwin Russell from Allele Inc., among many others.

investor might very well remain relatively low, despite high levels of agreement for inframarginal investors. This may thus lead to forced CEO turnover. This reasoning is consistent with the empirical finding by Parrino, Sias, and Starks (2003) that institutional selling is followed by forced CEO turnover.

Huang and Thakor (2013) use this idea of equilibrium cross-sectional heterogeneity in investor-management disagreement to show that firms can reduce this disagreement by conducting open-market and privately-negotiated share repurchases. Repurchases buy out investors who are more likely to disagree with management and concentrate share ownership in the hands of investors who are less likely to disagree. However, managing disagreement through share repurchases is costly because firms have to use internal cash that may have otherwise been invested in positive-NPV projects. This means that disagreement may be reduced but not eliminated via repurchases, implying that forced CEO turnover in response to disagreement can remain as an equilibrium outcome even when firms can use share repurchases.<sup>11</sup>

While disagreement sometimes results in CEO replacement, it need not. CEO entrenchment and weakness in shareholder governance can make the board reluctant to fire a CEO who may have hand-picked most of the board members or one who is deemed to be “powerful” due to tenure in office or other considerations. The prior literature suggests that involuntary CEO turnover is less likely and also more costly if the CEO is more entrenched and governance is weaker (e.g., Weisbach, 1988; Borokhovich, Parrino, and Trapani, 1996; Denis, Denis, and Sarin, 1997; Hermalin and Weisbach, 1998; Huson, Parrino, and Starks, 2001; Taylor, 2010). Therefore, firms balance the disagreement-decline benefit of CEO dismissal against the cost/difficulty of firing an entrenched CEO.

From the above analysis we can deduce the following testable hypotheses:

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<sup>11</sup> Another reason for this is that there are limits to how far firms can use repurchases to reduce disagreement and still remain public. The limiting case of going private is an alternative, of course, but the cost of doing that may exceed the cost of replacing the CEO and remaining public.

*Hypothesis 1: Ceteris paribus (controlling for CEO ability perceptions), forced CEO turnover is more likely in firms with higher investor-management disagreement, and this effect is more pronounced in more financially-constrained firms and those with stronger shareholder governance.*

It should be noted that our analysis does not yield a similar prediction for *voluntary* CEO turnover. Such turnover is unaffected by investor-management disagreement because the CEO believes that her decisions are value-maximizing and thus will not depart voluntarily.

It follows from the above analysis that, when there is a high level of agreement and thus investors have a high degree of confidence in the CEO's future decisions (and expected performance), the firm's past performance becomes less important in determining whether the CEO should be fired. We thus have the following prediction regarding the interaction between the level of agreement and the sensitivity of forced turnover to firm performance:

*Hypothesis 2: Firms are more tolerant to poor recent firm performance in their turnover decisions if the level of agreement is higher, i.e., the higher is the agreement level, the less sensitive is the forced turnover decision to firm performance.*

It is plausible to postulate that those within the executive suite of the firm will share similar views and beliefs due to constant interactions and being part of the same corporate culture (e.g., Kreps, 1990b; Van den Steen, 2010b; Bouwman, 2013; and Lo, 2015), making them more likely to agree with each other than with investors. An immediate implication of this is that when investors have a relatively high level of agreement with a departing CEO, they are more likely to endorse an insider to succeed the departing CEO, since they expect the high agreement level to persist with the successor. When agreement with the departing CEO is relatively low, investors are likely to prefer an outsider to be the successor. This is consistent with the evidence of management turnover, shown by Fee and Hadlock (2004), that senior executive managers are

evaluated as a group. Although it might be more costly to search for an external CEO than to select one from an internal talent pool (due to search frictions on the labor market), the benefit of having an external CEO with a higher level of agreement with investors may outweigh the search costs. We therefore have our third testable prediction below.

*Hypothesis 3: Firms are more likely to select an external replacement CEO if investors' disagreement with the existing CEO is higher.*

It follows that investor-management disagreement is likely to decline when a new external CEO successor is selected subsequent to a CEO being forced out. Even if an internal CEO is selected to replace the fired CEO in some of the cases (possibly due to a high external search cost or the importance of firm-specific knowledge), we expect firms to select an internal successor with a higher level of agreement with investors than that enjoyed by the departing CEO, everything else being equal. Indeed, given any cost to the firm of replacing the incumbent CEO based on investor-management disagreement, the board will not fire the CEO until the level of disagreement has risen above that it can expect to have with a random draw from the population of candidates to replace the CEO. To the extent that the board has the ability to screen and select a successor with a lower level of disagreement than with a random draw, this disagreement threshold for firing the incumbent will change, but the prediction remains that disagreement will decline following forced CEO turnover. This means that investor-management disagreement is expected to decline following forced CEO turnover, leading to our fourth testable prediction.

*Hypothesis 4: Investor-management disagreement declines following forced CEO turnover.*

Also, our analysis above indicates that the decline in disagreement will be greater if the replacement CEO is selected externally.

## **2.2. Marginal contribution**

Our study has several intended contributions. First, it seeks to add to the literature on corporate governance and CEO turnover by showing that investor-management disagreement is an important and previously-ignored factor in the firm's CEO turnover decision, and that the impact of this factor is lessened by governance variables like CEO entrenchment. Consistent with Taylor (2010), the latter finding explains the low forced CEO turnover rate despite the wide existence of investor-management disagreement in practice. Our study departs from the conventional focus of the prior literature on firm performance in examining CEO turnover. We show that the impact of investor-management disagreement persists even after controlling for accounting-based and market-based firm performance as well as industry performance.

Our paper also sheds light on an interesting puzzle in the empirical corporate governance literature that the sensitivity of forced CEO turnover to firm performance is rather modest (e.g., Coughlan and Schmidt, 1985; Warner, Watts, and Wruck, 1988; Weisbach, 1988; Denis, Denis, and Sarin, 1997; Huson, Parrino, and Starks, 2001; Brickley, 2003; Engel, Hayes, and Wang, 2003; and Farrell and Whidbee, 2003). Our finding indicates that it may be due to a high level of investor-management agreement in some firms, and thus suggests an interesting interaction between agreement and firm performance in CEO turnover.

Moreover, our paper seeks to improve our understanding of a firm's choice between an internal and an external CEO. Specifically, it shows that CEO selection is a process that seeks a *CEO-firm match*, consistent with the literature in which CEO turnover is an efficient outcome in a competitive assignment framework in which CEOs and firms match on multiple dimensions (e.g., Eisfeldt and Kuhnen, 2013). We provide suggestive evidence that belief-alignment is a consideration in this matching process.

Lastly, our paper contributes to another strand of the literature that has used the idea of disagreement based on differences in beliefs to examine a variety of issues in finance, accounting, and contracting. They include financing of new industries and technologies (Allen and Gale,

1999), the entrepreneur's choice of private versus public ownership (Boot, Gopalan, and Thakor, 2006 and 2008), optimal capital structure (Boot and Thakor, 2011), financial intermediation (Coval and Thakor, 2005), the firm's choice of debt versus equity financing (Dittmar and Thakor, 2007), strategic information disclosure (Thakor, 2015), security design (Garmaise, 2001), share repurchase (Huang and Thakor, 2013), trade around public announcement (Kandel and Pearson, 1995), the co-evolution of banks and market in financial system (Song and Thakor, 2010), financial innovation and crises (Thakor, 2012), corporate investment (Thakor and Whited, 2011), "endogenous optimism" (Van den Steen, 2004), corporate culture (Van den Steen, 2010b), the allocation of control (Van den Steen, 2010c), and the theory of firms (Van den Steen, 2010d).

### **3. Data and Variables**

#### **3.1. Data and sample**

Our sample construction starts with all U.S. firms in ExecuComp from 1993 to 2010 that list their common stock in NYSE, NASDAQ, or AMEX. We exclude all financial (primary SIC codes 6000 – 6999) and utility (primary SIC codes 4900 – 4999) firms. We include data on CEO characteristics (age, tenure, chairmanship, and stock ownership), firm-level accounting variables (e.g., assets, leverage, book value of equity, and net income), stock price, institutional ownership, and proxies for investor-management disagreement.

*Turnover data:* We identify CEO turnover from ExecuComp and use news reports, Boardex, and other public sources to classify the turnover as voluntary or involuntary.

*Disagreement proxies:* We construct proxies for disagreement using analysts' earnings forecast data from I/B/E/S, and using data on shareholder proxy proposals (1996–2010), shareholder voting (2003–2010), and Institutional Shareholder Services (ISS) vote



recommendations in director elections (2003–2010) from Voting Analytics.<sup>12</sup> We follow Del Guercio, Seery, and Woidtke (2008) and search news reports to collect data on shareholders’ “just vote no” campaign from 2003 to 2010.

*CEO attributes:* We obtain data on CEO age, tenure, chairmanship, and stock ownership from ExecuComp and whenever needed, supplement it with data from Boardex.

*Firm attributes:* We obtain firm-level accounting data from COMPUSTAT, stock price and return data from CRSP, institutional ownership data from CDA/Spectrum, and board and director characteristics data from RiskMetrics and Boardex.

## **3.2. Key variable construction**

### *3.2.1. CEO turnover*

As discussed earlier, our disagreement hypothesis predicts forced, but not voluntary, CEO turnover. In this section, we describe the classification of CEO turnover as voluntary or forced. We start with identifying turnover from changes in CEO designation as documented in ExecuComp. We then search using Factiva and LexisNexis for news reports coincident with the change in designation to identify the causes for the change. We drop instances that are due to misclassification in ExecuComp, takeovers or spinoffs, sudden death, or departures from interim positions. To classify a turnover as voluntary or involuntary, we start by using an algorithm similar to that in Parrino (1997). Any turnover for which the press reports that the CEO is fired, is forced out, or resigns is classified as forced. Of the remaining instances of turnover, if the departing CEO is under age 60, it is classified as forced if either: (1) the reported reason for the departure does not involve death, poor health, or acceptance of another position elsewhere or within the firm, or (2) the CEO is reported to be retiring but there is no announcement about the retirement made at least two months prior to the departure.

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<sup>12</sup> We thank Stuart Gillan for sharing the shareholder proxy proposal data before 1996.

We then complement the above algorithm with the modification used in Huson, Parrino, and Starks (2001) and also in more recent studies (e.g., Taylor, 2010; Hazarika, Karpoff, and Nahata, 2012). We reclassify a forced turnover (identified using the steps described above) as voluntary if either: (1) the CEO's employment record, obtained from Boardex, Marquis Who's Who publications, and other press reports, suggests that the CEO obtained a comparable position elsewhere upon or immediately following the turnover announcement, or (2) the press reports convincingly explain that the departure is due to previously undisclosed personal or business reasons that are unrelated to the firm's activities. All instances of CEO turnover not classified as forced are classified as voluntary, some of which are due to mandatory or planned retirements.<sup>13</sup>

We classify a new CEO as being external to the firm if she has been with the firm for no more than one year before the succession. We do this by relying on ExecuComp and Boardex for information on a manager's career path, supplemented by Marquis Who's Who publications, Bloomberg Businessweek, and Standard & Poor's register of corporations, directors, and executives.

### 3.2.2. *Investor-management disagreement*

Following the literature (e.g., Dittmar and Thakor, 2007; Huang and Thakor, 2013), we use four proxies for investor-management disagreement: (1) The difference between the analyst forecast consensus of a firm's earnings per share (EPS) and its actual value ("*Forecast-Actual EPS*"), (2) the number of proxy proposals that a firm receives in a year ("*Proxy proposal*"), (3) the vote recommendation in directors' elections ("*Vote recommendation*"), and (4) actual voting that director candidates receive in directors' elections ("*Actual voting*"). Details on these

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<sup>13</sup> Kaplan and Minton (2012) suggest that the usual approach of CEO turnover classification tends to misclassify some forced turnovers as voluntary. We note that such a misclassification, if present, results in a smaller sample of forced CEO turnover and thus causes a downward bias in the estimated effect of disagreement on forced turnover. That is, the documented impact of investor-management disagreement on forced CEO turnover may be an underestimate of the actual impact.

variables along with a discussion of the economic rationale for viewing each variable as a proxy for investor-management disagreement are provided in the Appendix.

Our first proxy involving earnings forecast has also been examined by Farrell and Whidbee (2003). They find a similar association between the likelihood of CEO turnover and industry-adjusted *Forecast-Actual EPS* for an earlier sample from 1986 to 1997. However, they do not distinguish between forced and voluntary CEO turnover. As we discuss in Section 5.2.1, we find that the association does *not* hold for voluntary turnover (results shown in Table 9).

### 3.3. Summary statistics

As we explain in the Appendix while discussing the construction of our disagreement proxies, our final sample size varies with our disagreement proxies due to different degrees of data availability. The resulting samples of CEO turnover corresponding to different disagreement proxies are smaller than the universe of CEO turnover for firms in ExecuComp during the sample period. However, as we discuss below, the rate of CEO turnover and the rate of forced versus voluntary turnover in our samples are consistent with those reported in the prior literature. Due to its most complete coverage of sample firms, we take the sample corresponding to the measure of disagreement using the difference between the analyst forecast of a firm's EPS and its actual value in presenting the yearly distribution of the number and frequency of CEO turnover between 1993 and 2009.<sup>14</sup> Overall, there are 1691 CEO successions that occur in about 10% of the sample firm-years. Among them, 345 (about 20% of all successions) are forced, and in 520 (about 29%) of all successions, the new CEOs are hired from outside the firm. There exists some time-series variation in the number and frequency of overall, forced, and external successions. We include year dummies in all of our regressions to control for possible time effects.

[Table 1 goes here]

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<sup>14</sup> Data on CEO turnover end in 2009 instead of 2010 because our analysis requires one more year of data on disagreement proxies in examining the change in disagreement following forced CEO turnover.

Table 2 reports summary statistics of the key variables we use in our analysis. All variables are winsorized at the 1% and 99% levels to mitigate the potential impact of outliers. Detailed definitions of these variables (except CEO turnover that is discussed earlier) are provided in the Appendix. The upper part of Panel A provides summary data on disagreement proxies and on forced CEO turnover in each of the four samples with different disagreement proxies. Similar to the finding in the prior literature (e.g., Huson, Parrino, and Starks, 2001; Taylor, 2010; Kaplan and Minton, 2012), the unconditional probability of forced CEO turnover in a year is between 1.9% and 2.2% across the four samples. The sample firm's mean (median) *Forecast-Actual EPS* is 0.04 (-0.01). Among firms that have received at least one shareholder proxy proposal during the sample years 1993-2010, an average of 0.55 proposals are submitted in a year. On average, 10% of candidates in a firm-year receive a “withhold” or “against” vote recommendation before the director election. Also, 23% of director candidates in an average sample firm-year receive a percentage of yes-votes in the election below the yearly median.<sup>15</sup>

In the lower part of Panel A, we conduct a univariate test of the relation between forced CEO turnover and disagreement. We classify the CEO years into two groups – those involving forced turnover and those not involving forced turnover, and compare the disagreement parameters in the two groups as of the year prior to turnover. We find a higher level of disagreement in the forced-turnover group, and the *t*-test conducted on the difference of the mean disagreement parameters shows that the difference is significant at 1% level for all four disagreement proxies. This is consistent with *Hypothesis 1*. For example, on average, 14% of candidates receive an unfavorable voting recommendation before the director election in the year prior to forced CEO turnover, while that number is 9% only during other years. Also, 40% of candidates in our sample

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<sup>15</sup> As discussed in the construction of the *Actual voting* measure in Appendix, the yearly median percentage of yes-votes is defined based on the universe of firms with available actual voting data during 2003-2010, but not on our final sample firms. The smaller fraction (23%) of directors in our sample firms receiving below-yearly-median percentage of yes-votes than 50% (by construction) suggests a higher average percentage of yes-votes received by director candidates in our sample firms (i.e., relatively large firms in ExeuComp) than in firms in the universe.

receive a below-yearly-median percentage of yes-votes in the director election in the year prior to forced CEO turnover, a number significantly more than 23% – the counterpart statistic during other years.

In Panels B and C, we present summary statistics of firm and CEO characteristics, respectively. As in Table 1, we take the sample corresponding to the measure of disagreement using the difference between the analyst forecast of a firm’s EPS and its actual value due to its most complete coverage of sample firms. On average, 11% of CEOs have over 5% of stock ownership in the firm and 62% of CEOs are also Chairmen of the board. The average tenure of the CEOs is about 8.6 years. Since we obtain sample firms from ExecuComp (which covers S&P 1500 firms), the firm characteristics of our sample are similar with those in the prior literature on CEO turnover since those papers also use ExecuComp as the major data source.

[Table 2 goes here]

## **4. Main Empirical Analysis of Disagreement and Turnover**

In this section, we discuss the empirical tests of our four hypotheses.

### **4.1. Test of Hypothesis 1: High investor-management disagreement leads to a higher likelihood of forced CEO turnover and this effect is more pronounced for firms that are more financially constrained or have better governance.**

#### *4.1.1. Baseline analysis*

We test *Hypothesis 1* by relating investor-management disagreement to the likelihood of forced CEO turnover while controlling for a number of firm and CEO characteristics that the prior literature has shown to affect CEO turnover. We follow previous studies (e.g., Hazarika, Karpoff, and Nahata, 2012) and employ the Cox proportional hazard model (Cox, 1972) to conduct our test:

$$\lambda(t|X) = \lambda_0(\beta_0 I * t) \exp(\beta' X).$$

The hazard model presents a CEO's hazard rate (the dependent variable) – approximately, the likelihood that the incumbent CEO will be dismissed in the next year – as a function of the CEO's tenure and other CEO as well as firm characteristics. It thus takes into account both the occurrence and timing of forced turnover. The model also accounts for the right-censoring of the data that arises from the fact that some CEOs in our sample remain in office by the end of 2009. We allow baseline hazards to vary across industries to capture the difference in turnover patterns in different industries.

Our key independent variable is investor-management disagreement, proxied by the four disagreement measures, lagged by one year relative to the dependent variable because it is the disagreement parameter in place at the end of the previous year that drives the turnover decision this year. A positive coefficient on the disagreement measures implies a positive marginal impact on the hazard and thus a shorter expected time as CEO. The firm characteristics we include as controls in the regressions, also lagged by one year, are *Firm size*, *Market-to-Book*, *Stock return*, *EW Industry stock return*, *Leverage*, *Stock volatility* and *Institutional blockholding*. When *Forecast-Actual EPS* is used as the disagreement measure, we also include *Analyst dispersion* to control for difference of opinions among analysts. We include *Total directors* to control for the number of director candidates up for elections when the last two disagreement measures regarding director election are used. The set of CEO characteristics we include are *Age*, *Age square*, *CEO blockholding*, and *CEO-Chair Duality*. In all regressions, we also include year fixed effects, and the standard errors we estimate are robust to heteroskedasticity and clustered at the firm level.

The results are reported in Table 3. Consistent with the prediction of *Hypothesis 1*, we find that the coefficients of all four disagreement measures are positive and statistically significant.

This indicates that the likelihood of forced CEO turnover increases when investors are more likely to disagree with management. From the coefficient estimates of the control variables, we find that the likelihood of forced CEO turnover is higher in poorly-performing firms and in firms with greater stock volatility. Also, CEOs who are also chairmen of the board of directors are less likely to be forced out. One might be concerned that the firm performance-turnover relation may be non-linear and it is possible that our disagreement measures are capturing the effect of extremely poor firm performance. To address this issue, we conduct a robustness check by including higher-order polynomials of *Stock return* in the regressions. We find that the results remain almost intact (untabulated for brevity).

[Table 3 goes here]

One of the critical assumptions underlying the Cox hazard model is that the covariates have the same effect on CEO turnover through time, which may not be the case for firm performance as we discussed in the Introduction. We thus repeat all of our estimates using a logit model as a robustness check.<sup>16</sup> Furthermore, employing the logit model helps us interpret the economic significance of our results in a more intuitive manner. In the interest of brevity, we do not tabulate the results. The results are consistent with those obtained using the Cox hazard model that CEOs are more likely to be forced out when the level of disagreement is higher. The impact of disagreement is also economically significant. Specifically, in accordance with the odds ratios obtained from the logistic regressions, the odds of forced turnover are 0.42 times higher after a one-standard-deviation (0.27) increase in *Forecast-Actual EPS*, and 1.27 times higher after a one-standard-deviation (1.09) increase in the number of proxy proposals received.<sup>17</sup> Also, there is an increase in the odds of forced turnover by 0.53/1.44 times following a one-standard-deviation (0.22/0.34) increase in the proportion of director candidates receiving an unfavorable vote

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<sup>16</sup> We include CEO tenure ( $\ln(Tenure)$ ) in the logit regressions as an additional control to account for the impact of tenure on the likelihood of CEO dismissal. Unlike the Cox proportional hazard model, the logit model by itself does not take into account the effect of CEO tenure.

<sup>17</sup> The odds ratios are 1.549 and 1.167, respectively.

recommendation/receiving less than the yearly-median percentage of yes-votes, among all candidates in the firm who are up for election in a given year.<sup>18</sup>

#### *4.1.2. Is the effect robust to controls for various measures of firm performance?*

CEOs are often fired for poor performance, and it is plausible to conjecture that poor firm performance is accompanied by high investor-management disagreement. In our benchmark analysis, we have attempted to control for firm performance by controlling for prior-year stock returns and industry returns. However, this may not be enough. The literature suggests that firms may use measures of firm performance other than prior-year stock returns in their decisions of CEO firing. For instance, Engle, Hayes, and Wang (2003) find interesting cross-sectional variation in the weights placed on accounting-based and market-based firm performance measures and relate it to the properties of these performance measures. Denis and Denis (1995) find in an early sample of top management turnover that forced CEO turnover is preceded by a significant decline in operating performance. Jenter and Lewellen (2014) examine the relation between CEO turnover and firm stock performance along CEOs' tenures and find evidence that boards assign larger weights to more recent performance signals than to past ones in making CEO turnover decisions. We thus we control for a complete set of past firm performance metrics based on the prior studies in additional regression specifications to examine the robustness of the effect of disagreement.

Specifically, we provide a more comprehensive set of controls for firm performance by adding to the regressions of the benchmark analysis three different versions of accounting performance based on return on assets (ROA) – namely, the prior-year ROA, the average ROA of the past two years, and the change in ROA during the past two years. Also, we include as controls various measures of a CEO's tenure-long firm stock performance with different weights placed in

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<sup>18</sup> The odds ratios are 2.409 and 3.350, respectively.



different time along the tenure. Following Malmendier and Nagel (2011) and Jenter and Lewellen (2014), we construct a CEO's tenure-long stock performance as the weighted average abnormal return from her first month in office as CEO through the end of year  $t-1$ , where  $t$  is the year of turnover. Therefore,

$$Tenure\ return_{\Lambda} = \frac{\sum_{k=1}^E w_{(k,\Lambda)} R_{E-k}}{\sum_{k=1}^E w_{(k,\Lambda)}}$$

where  $E$  is the total number of months the CEO has been in office as of the end of year  $t-1$ ,  $R_{E-k}$  is the industry-adjusted (defined at two-digit SIC codes) stock return in month  $E-k$ , and  $w_{(k,\Lambda)} = \left(\frac{E-k}{E}\right)^{\Lambda}$  is the weighting function with the slope being determined by the parameter  $\Lambda$ .  $\Lambda$  determines the relative weights that the board places on recent firm performance with a higher value of  $\Lambda$  implying more emphasis on performance of more recent months. A value of  $\Lambda$  being zero implies that the board assigns the same weights on performances of all past months. We take the values of  $\Lambda$  from zero through three to examine the robustness of the effect of disagreement to this market-based performance measure.

Table 4 presents the results with these alternative measures of firm performance. We find that the effect of disagreement on the likelihood of forced CEO turnover is robust to controls involving these performance measures. The coefficient estimates of the four disagreement proxies remain almost intact in both statistical significance and economic magnitude (even larger in some cases), compared with the results in Table 3. These robustness checks enable us to more sharply disentangle the effect of disagreement from the effect of firm performance in CEO turnover decisions. While we find it implausible that changes in ROA over a two-year time horizon would be related to investor-management disagreement perceptibly, one may nonetheless argue that even the tests in this section do not go far enough in distinguishing between the effects of fundamental disagreement and performance shortfall on CEO turnover. We address this concern

later in Section 5.2.2, where we exploit an exogenous shock to investment-management agreement that does *not* involve changes in firm fundamentals. The findings, to be discussed later, get directly at the effect of disagreement on forced CEO turnover that is orthogonal to the effect of firm performance.

[Table 4 goes here]

4.1.3. *Is the effect stronger in more-financially-constrained firms and weaker in firms with more-entrenched CEOs?*

Although we find a significant relation between disagreement and forced turnover on average, we expect some heterogeneity in the strength of the correlation cross-sectionally. Because the cost of disagreement and constraints in forced CEO turnover can differ across firms, firms will vary in the disagreement sensitivity of forced turnover.

First, for firms that are financially more constrained, the cost of disagreement is higher because equity is a more important source of financing to them, and yet investors may either decline to fund investments or may only be willing to provide financing at a higher cost to the firm. *Ceteris paribus*, these firms may thus be more responsive to investor disagreement in forcing out CEOs to pursue successors with higher levels of agreement with investors. To test this prediction, we run the baseline regressions in Table 3 separately on two subsamples of firms – one group consisting of firms that are financially more constrained and another group consisting of firms that are less constrained. Specifically, we classify firms as being financially more (less) constrained if their Whited and Wu (2006) index is in the top (bottom) tercile of the sample.

The results, reported in Panel A of Table 5, are consistent with our prediction. The coefficient estimates of the disagreement proxies have predicted signs for both subsamples but are statistically significant only for the more constrained subsample (except the *Actual voting* proxy, the coefficients of which are both significant in the two subsamples). We include all other

explanatory variables in Table 3 in the regressions here. Their coefficient estimates are similar to those in Table 3, and thus we do not report them in the interest of brevity. In untabulated findings for robustness, we repeat our analysis using a direct measure of equity dependence which is constructed following Rajan and Zingales (1998), and find qualitatively-similar results.

Second, the cost of disagreement notwithstanding, firms may be constrained in CEO-firing decisions, especially when their CEOs are entrenched. Taylor (2010) uses a structural model to argue that the low forced turnover rate at large US firms may be due to switching costs that firms face in CEO succession, mainly reflecting CEO entrenchment. Combining this insight with our framework, we obtain the prediction that the turnover-disagreement sensitivity is weaker in firms with more-entrenched CEOs. Moreover, we expect effective corporate governance to at least partially overcome the effect of entrenchment. This yields the prediction that the turnover-disagreement sensitivity is higher in firms with stronger corporate governance.

To measure the extent of which a firm's CEO is entrenched, we construct an index of CEO entrenchment based on the following observations. There is greater entrenchment when: (i) the CEO is also the chairman of the board; (ii) the fraction of outsiders on the board (board independence) is below the sample average;<sup>19</sup> and (iii) the stock ownership by executive directors is greater than the sample average. To the extent that executive directors are more likely to be aligned with the CEO and their higher stock ownership gives them greater voice on the board, it is intuitive that higher ownership by executive directors is associated with greater CEO entrenchment.<sup>20</sup> The entrenchment index takes a value of zero to three, depending on the number of the three observations that are true. Therefore, a firm's CEO is regarded as least entrenched when the index equals zero and most entrenched when the index equals three. We divide our sample into two groups based on the entrenchment index. Firms with the index being two or three

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<sup>19</sup> For the impact of outside directors on CEO succession, see Weisbach (1988), Borokhovich, Parrino, and Trapani (1996), Knyazeva, Knyazeva, and Masulis (2013), and Guo and Masulis (2015) for examples.

<sup>20</sup> Denis, Denis, and Sarin (1997) find that top executive turnover is less likely when the ownership of officers and directors in the firm is higher.

are grouped and labeled as “Entrenched”, and other firms are grouped and labeled as “Less entrenched”. In testing our prediction, we run the baseline regressions in Table 3 on the two groups of firms, respectively.

We measure the strength of shareholder governance through their ownership concentration. The free-rider problem arising from ownership dispersion (Grossman and Hart, 1980) has long been argued as one of the major factors contributing to the weakness of shareholder monitoring in corporate governance. For any active shareholder in a firm with dispersed ownership, the cost of shareholder intervention, typically borne by the initiating shareholder, often outweighs the benefit of the intervention (if any) that is shared with all other shareholders. More concentrated ownership can mitigate this free-ride problem and incentivize shareholders with large ownership to use “voice” (intervene) when necessary. Moreover, unlike smaller shareholders, shareholders with large and concentrated ownership are less likely to exit by selling shares when they disagree with management, because of the potentially large price impact of their selling. On the other hand, the potentially large price impact of selling allows large shareholders to use exit as a potent threat to improve governance in firms.<sup>21</sup> Therefore, shareholder governance, through both “voice” and the threat of “exit”, is arguably more effective with more concentrated ownership.

Specifically, we classify firms as “Concentrated” if their largest five institutional investors hold more than 20% of the shares outstanding in aggregate.<sup>22</sup> All other firms are classified as “Less concentrated”. Hartzell and Starks (2003) show that the share of institutional ownership by the five largest holders is positively related to executives’ pay-for-performance sensitivity and negatively related to the level of compensation, and thus suggest an effective monitoring role played by the top five institutional investors. To test the impact of shareholder governance, we

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<sup>21</sup> See Edmans (forthcoming) for a summary of the literature on both “voice” and “exit” by blockholders.

<sup>22</sup> Our finding remains qualitatively the same if we use a different share ownership cut point, e.g., 15% or 25%. Also, it is robust if we use the shareholding by top five active institutional investors that are defined as quasi-indexers and dedicated institutions based on Bushee (2001).

regress forced CEO turnover on our disagreement proxies for the two groups of firms, respectively.

In Panels B and C of Table 5, we present the results that are consistent with our predictions on the impact of CEO entrenchment and share ownership concentration. Although the effect of disagreement on forced CEO turnover is mostly consistent across the subsamples of “Entrenched” and “Less entrenched” and the subsamples of “Concentrated” and “Less concentrated”, it is only statistically significant in the subsample of “Less entrenched” and the subsample of “Concentrated”. The exceptions are that the coefficient estimates of *Actual voting* and *Proxy proposal* are also significantly positive in the subsamples of “Entrenched” and “Less concentrated”, respectively. But the level of significance is marginal in both cases. As in Panel A, all other explanatory variables are included in the regressions but are not tabulated.

[Table 5 goes here]

In sum, we find that the likelihood of forced CEO turnover is positively related to the level of investor-management disagreement, and the effect of disagreement is more pronounced in firms that are more constrained financially, have less entrenched CEOs, and have stronger shareholder governance.

#### **4.2. Test of Hypothesis 2: The sensitivity of forced CEO turnover to firm performance is weaker when the level of agreement is higher.**

To test this hypothesis, we augment the baseline test of *Hypothesis 1* by interacting an indicator of high agreement with past firm performance. The hypothesis predicts that the coefficient on the interaction term is positive, while the coefficients on the high-agreement indicator and firm performance are negative. We define the *High-agreement* indicator for each proxy of investor-management agreement such that it equals one if: (1) the difference between the mean analyst forecast of a firm’s EPS for a fiscal year and its actual value, scaled by the

absolute value of actual EPS, is less than the sample median; (2) if the firm does not receive any proxy proposals in the year; (3) if no director candidates in the firm who are up for election in the year receive a “withhold” or “against” recommendation from ISS or/and certain shareholders in a “just vote no” campaign; or (4) if no director candidates in the firm who are up for election in the year receive less than the yearly median yes-vote casted in all firms with available actual voting data. To control for CEO entrenchment, we include a CEO “Entrenched” dummy that equals one if the CEO is regarded as “Entrenched” as defined in Section 4.1.3. We run the regressions with a linear probability model to have a more intuitive interpretation of the coefficient estimates on the interaction term. All other variables included in the specifications of Table 3 are also included here.

Table 6 presents the results of this augmented test. Consistent with *Hypothesis 2*, we find that the coefficient estimates of the interaction term of *High-agreement* and past stock returns are positive and statistically significant for three of the four agreement measures, while both the coefficient estimates of *High-agreement* and past stock returns are significantly negative. In economic magnitudes, when compared to CEOs with low agreement, the sensitivity of turnover to firm performance for *High-agreement* CEOs drops by over one quarter to about two thirds, depending on specific agreement measures. The only exception is *Voting recommendation*, the interaction term of which is negative but statistically insignificant. Therefore, CEOs who share a high level of agreement with investors are less likely to be forced out due to poor recent firm performance. This finding holds with the control for CEO entrenchment, the coefficient estimate of this control variable being significantly negative.

[Table 6 goes here]

### **4.3. Test of Hypothesis 3: CEOs who investors disagree with more are more likely to be replaced with external hires.**

We test this hypothesis by examining the effect of disagreement on a firm's choice of an external CEO, conditional on CEO succession. To do this, we apply a logit estimation model where the dependent variable is an indicator that identifies if a new CEO has been with the firm for less than a year prior to the CEO appointment. The main independent variable is disagreement. Prior research suggests that firms are more likely to hire an outsider if the predecessor was forced out (e.g., Parrino, 1997). We thus include as a control variable, *Forced turnover*, a dummy that equals one if the departing CEO is forced out. Those firm-level variables that are used to estimate the likelihood of forced turnover in Table 3 are also included as controls here in addition to the yearly and industry dummies. Robust standard errors are clustered at the firm level in all regressions.

The results presented in Table 7 strongly support *Hypothesis 3*. The reported coefficients of the marginal effect are positive and statistically significant for all the disagreement proxies. It suggests that an external replacement CEO is more likely to be selected when the level of disagreement between investors and incumbent management is higher. This finding holds even after we control for *Forced turnover*, the coefficient estimate of which itself is significantly positive. The effect of disagreement on external CEO hiring is also economically meaningful. Specifically, the odds ratios obtained from the logistic regressions suggest that the odds of an external CEO hire are 0.49 times higher following a one-standard-deviation (0.27) increase in a firm's *Forecast-Actual EPS*, and 1.34 times higher following a one-standard-deviation (1.09) increase in the number of proxy proposals received.<sup>23</sup> Also, there is an increase in the odds of an external CEO hire by 1.01/0.95 times following a one-stand-deviation (0.22/0.34) increase in the proportion of director candidates receiving an unfavorable vote recommendation/receiving less

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<sup>23</sup> The odds ratios are 1.81 and 1.23, respectively.

than the yearly-median percentage of yes-votes, among all candidates in the firm who are up for election in a given year.<sup>24</sup>

Note that we include both voluntary and forced CEO successions in the above test. Although disagreement does not affect voluntary CEO turnover, disagreement can affect the choice of external replacement. When a CEO leaves voluntarily for reasons other than disagreement, the firm will prefer an external replacement to improve investor-management agreement when agreement with the departing CEO is relatively low, as we explain in Section 2. Nevertheless, in a robustness check, we find that the results (untabulated for brevity but available upon request) remain qualitatively similar if we restrict our analysis to the subsample of forced CEO turnover only.

[Table 7 goes here]

#### **4.4. Test of Hypothesis 4: Investor-management disagreement declines following forced CEO turnover.**

We test this hypothesis by examining how investor-management disagreement changes following forced CEO turnover based on the following specification:

$$\text{Change in Disagreement}_{i,t-1 \text{ to } t+1} = \alpha + \beta_1 * \text{Forced turnover}_{i,t} + \beta_2 * \text{Controls} + \mu_{\text{industry}} + \eta_t + \varepsilon_{i,t},$$

where *Forced turnover*<sub>*i,t*</sub> is an indicator variable that equals one if firm *i* experiences forced CEO turnover in year *t* and zero otherwise. We also include other explanatory variables as controls for public information about the firm as of year *t*, such as *Firm size*, *Market-to-Book*, *Stock return*, *Stock volatility*, and accounting performance *ROA*. Year and industry fixed effects are also included to all regressions. The dependent variable, *Change in Disagreement*<sub>*i,t-1* to *t+1*</sub>, measures the change in disagreement from the year prior (year *t* – 1) to the year subsequent (year *t* + 1) to

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<sup>24</sup> The odds ratios are 4.57 and 2.80, respectively.



the turnover. We explain below in more details on how we construct this dependent variable, for each of our disagreement proxies.

Consider *Proxy proposal* first. We note that, conditional on the occurrence of a proxy proposal submission, the average firm receives two proposals in a year. Therefore, a drop of two in the number of proposals received in the average firm implies an aligned view between investors and the new management in the year subsequent to CEO turnover. We thus define the change-in-disagreement variable as a dummy, which equals one if the number of proxy proposals received in year  $t + 1$  drops by at least two relative to the number of proxy proposals received in year  $t - 1$ , representing a decline in disagreement, and is zero otherwise. Similarly, in the case of *Actual voting*, the change-in-disagreement variable is also defined as an indicator variable that equals one if the fraction of directors receiving less than the yearly-median percentage of yes-votes among all candidates up for election in year  $t+1$  is less than that in year  $t-1$ , and is zero otherwise, i.e., a value of one means a drop in disagreement. For the other two disagreement proxies—*Forecast-Actual EPS* and *Vote recommendation*, the change in disagreement is the simple difference of the continuous measure from year  $t - 1$  to year  $t + 1$ .

When the change-in-disagreement is defined as a continuous variable, as is the case for *Forecast-Actual EPS* and *Vote recommendation*, we employ an OLS regression in estimating the effect of forced turnover, and we expect a significantly negative impact in both cases. For the other two indicator change-in-disagreement variables, we apply a logistic model in estimating the effect of forced turnover (and coefficients of the marginal effect are reported), and we expect a significantly positive impact in both cases. Year and industry dummies are included and robust standard errors are clustered at the firm level in all regressions. The results presented in Table 8 are consistent with *Hypothesis 4*. The coefficients of *Forced turnover* have the expected signs for all four change-in-disagreement proxies and are statistically significant. It suggests that disagreement declines following forced CEO turnover.

[Table 8 goes here]

In results that are untabulated for brevity, we extend the examination window of the change in disagreement to two years subsequent to CEO turnover and find the decline in disagreement persists over this longer time period. We also find that the decline in disagreement is greater following forced CEO turnover if a replacement CEO is hired externally. This is consistent with *Hypothesis 3* that firms tend to employ an external successor when the level of disagreement is high, because an internal successor is more likely to share similar views and beliefs with the departing CEO than would an external successor.

## **5. Discussions and Robustness Tests**

In this section, we discuss three main issues: (i) The stock market's reaction to disagreement-induced CEO turnover, (ii) endogeneity concerns, and (iii) the extent to which our disagreement proxies may be measuring other things.

### **5.1. Market response to announcements of forced CEO turnover**

To what extent does the market react to the decline in disagreement that is anticipated to follow the forcing out of a CEO? The answer suggested by the disagreement hypothesis is that the market would react positively. And the positive reaction should be larger if the next CEO is hired externally because the decline in disagreement is expected to be greater, as discussed above.

To confront this reasoning with the data, we examine the five-day (-2, +2) cumulative abnormal returns (CARs) around the forced turnover announcements. We estimate CARs using the market model and the CRSP equal-weighted stock return as the market return. Specifically, we take the sample of forced CEO turnover that corresponds to the measure of disagreement using the difference between the analyst forecast of a firm's EPS and its actual value due to its

most complete coverage of sample firms.<sup>25</sup> We divide the sample into two subsamples – a “high disagreement” subsample in which a firm’s EPS falls below its analyst forecast consensus and a “low disagreement” subsample in which a firm’s EPS equals or beats its forecast in the year prior to turnover. We then compare the CARs between the two subsamples to contrast the market’s response to forced CEO turnover due to disagreement with its response to other types of forced turnover.

Our finding confirms the prediction of our disagreement hypothesis. The average five-day CARs are 1% and marginally significant for the “high disagreement” subsample, while the average CARs are -2% and significant for the “low disagreement” subsample.<sup>26</sup> Moreover, the average CARs for firms with an external replacement for the departing CEO in the “high disagreement” subsample are higher at 2.54% and statistically significant. In comparison, the average CARs for their counterparts in the “low disagreement” subsample are -1.2% and statistically insignificant.

## **5.2. Endogeneity of disagreement and turnover**

One might be concerned that both disagreement and forced turnover may be related to an unobserved omitted variable, and therefore the relation between them might be spurious. One such variable is the uncertainty that a firm faces in its growth opportunities or its technological development. For instance, such uncertainty is prevalent in high-tech industries with abundant investment opportunities. Uncertainty increases the likelihood that agents will arrive at different interpretations of the same information set, and thus may contribute to disagreement. Meanwhile, higher uncertainty may also make incentive contracting less efficient (e.g., Holmstrom (1979)), leading to lower effort supply by the CEO and hence worse firm performance and higher CEO turnover.

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<sup>25</sup> Our findings are similar for samples of forced turnover corresponding to other disagreement proxies.

<sup>26</sup> In untabulated regression results, we find that the CARs for the “high disagreement” subsamples are significantly higher than the CARs for the “low disagreement” even after controlling for various firm and CEO characteristics.

If the omitted variable is time-invariant within the firm, we can tackle the issue by running a firm fixed effects estimation of disagreement on forced CEO turnover, using a linear probability model.<sup>27</sup> The firm fixed effects estimation eliminates the impact of any unobserved firm-specific factors in exploiting the within-firm variations of the variables over time. Results of this estimation method confirm the robustness of our main finding. Of course, we are aware of the linearity limitation involved in this linear-probability estimation. Therefore, we take it as an ancillary approach and discuss the results, but do not tabulate them in the interest of brevity.

If the omitted variable is time varying, then a firm fixed effects estimation will not be effective in addressing the omitted variable bias concern. We deal with this possibility in three different ways: (i) by running a falsification test, (ii) by examining the impact of an exogenous shock to agreement, and (iii) by exploiting a quasi-natural experiment. Each of these tests is discussed below.

### 5.2.1. *A falsification test*

Under our disagreement explanation, a CEO always believes she is maximizing firm value, so she has no reason to depart voluntarily when disagreement is high. Therefore, disagreement is unlikely to affect the likelihood of voluntary CEO turnover in a systematic way. In contrast, under the uncertainty (the omitted variable discussed above) view, if the difficulty in coping with uncertainty increases the likelihood of forced management turnover, we expect to see a similar effect of uncertainty on voluntary turnover. This is because managers are more likely to jump ship to other firms for better perceived opportunities in industries with greater uncertainty, as highlighted by the recent controversy about information technology firms colluding in their hiring practices to limit poaching talent from each other.<sup>28</sup> That might explain the prevalence of talent

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<sup>27</sup> We are unable to include firm fixed effects in the non-linear COX hazard model and logit model because of the incidental parameters problem (Neyman and Scott, 1948).

<sup>28</sup> See Wall Street Journal articles titled “Ebay settles recruiting allegations” dated May 1, 2014 and “Tech companies agree to settle wage suit” dated April 24, 2014.

retention measures in those firms such as non-compete agreements (Garmaise, 2011) and long-duration pay (Gopalan, Huang, and Maharjan, 2014). Thus, the contrasting prediction regarding voluntary CEO turnover under the uncertainty view provides an opportunity to conduct a falsification test of our disagreement hypothesis.

In the falsification test, we repeat the baseline analysis about the effect of disagreement in Table 3 with a replacement of the dependent variable by the hazard rate of voluntary CEO turnover. In doing this, we focus on incidents of voluntary turnover that are not due to mandatory or planned retirements, although our results are not sensitive to this exclusion. The results, presented in Table 9, do not support the uncertainty view. Unlike the case of forced turnover, the estimated coefficients are negative for all the disagreement proxies, and none of them is statistically significant, except *Vote recommendation*. It shows that disagreement is not relevant to voluntary CEO turnover, consistent with our disagreement hypothesis.

[Table 9 goes here]

### 5.2.2. *Impact of an exogenous shock to investor-management agreement*

Next, to disentangle the impact of disagreement from that of the unobserved omitted variable on forced turnover, we identify an exogenous shock to agreement (through an exogenous change in the firm's investor base) that is not related to the omitted variable or other firm characteristics and then examine how it may affect forced CEO turnover. Flow-induced mutual fund fire sales (Coval and Stafford, 2007) constitute an ideal setting for this purpose.

Distressed funds that have experienced extreme capital outflows are forced to sell their holdings with significant discounts. Existing investors who are not distressed are unlikely to absorb, within a short time period, all these shares due to risk aversion, wealth endowment constraints, or both. It follows that, in equilibrium, the new *marginal* investors in the stocks under fire sales are other liquidity providers. They have a lower level of agreement than the existing

shareholders but trade to earn a liquidity premium. If these investors did not have a lower level of agreement, they would have purchased the stock prior to the fire sales. The change in the investor base results in a decline in the level of agreement between investors and management.<sup>29</sup> This decline in agreement, arising from distressed funds' liquidity demand, is exogenous to changes in firm fundamentals for the affected stocks, and therefore whatever effect on forced CEO turnover we measure in response to this event cannot possibly be due to anything linked to firm fundamentals, including performance. Coval and Stafford (2007) show that fire-sale affected stocks experience a temporary price drop over the period when they are being sold, which is then reversed in a year or so. It is unlikely, however, that rational shareholders with full knowledge of the uninformed forced sales would have forced out the CEO simply because of the temporary stock performance decline. A more plausible interpretation is that the firing is due to the (performance-unrelated) lower level of agreement. We expect that the negative shock to agreement would lead to an increased probability of forced CEO turnover, according to our disagreement hypothesis.

We follow Coval and Stafford (2007) and Khan, Kogan, and Serafeim (2012) to construct fund-flow-induced trading pressure for each stock held by mutual funds during our sample period.<sup>30</sup> Specifically, we define fund flows as

$$FLOW_{j,s} = [TNA_{j,s} - TNA_{j,s-1} \cdot (1 + R_{j,s})] / TNA_{j,s-1}$$

to fund  $j$  during month  $s$ , where  $TNA_{j,s}$  is total net assets for fund  $j$  as of the end of the month  $s$  and  $R_{j,s}$  is the monthly return for fund  $j$  at the month  $s$ . The data of funds' total net assets and returns are from CRSP mutual fund monthly net returns database. To match with the quarterly fund holding data from Thomson Financial, we sum the monthly flows over the quarter to obtain

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<sup>29</sup> Although it is possible that agreement may improve if new investors, who have a more aligned view with management, start buying the stock later, Coval and Stafford (2007) find that this does not seem to occur in a short time.

<sup>30</sup> As in the previous studies, we focus on open-end U.S. equity funds only.

quarterly fund flows  $FLOW_{j,t}$  for quarter  $t$ . We calculate flow-induced trading pressure for stock  $i$  in quarter  $t$  as

$$Pressure_{i,t} = \frac{[\sum_j (\max(0, \Delta Holdings_{j,i,t}) | flow_{j,t} > Percentile(90th)) - \sum_j (\max(0, -\Delta Holdings_{j,i,t}) | flow_{j,t} < Percentile(10th))]}{SharesOutstanding_{i,t-1}}.$$

As in Coval and Stafford (2007), stocks in the bottom decile of  $Pressure$  are considered to be experiencing excess selling demand from mutual funds with large capital outflows.

To ensure that the flow-induced selling is not driven by information about potential changes in firm characteristics, we first calculate “unforced trading pressure” for stock  $i$  in quarter  $t$  following Khan, Kogan, and Serafeim (2012) as

$$UPressure_{i,t} = \frac{[\sum_j \Delta Holdings_{j,i,t} | Percentile(10th) \leq flow_{j,t} \leq Percentile(90th)]}{SharesOutstanding_{i,t-1}}.$$

This measure captures widespread net trading activity by mutual funds with mild capital flows (the middle eight deciles). Stocks in the top and bottom deciles of  $UPressure$  are thus expected to be experiencing information-driven purchases and sales, respectively. To identify an exogenous shock to agreement unrelated to firm unobservables, we focus on stocks that are not subject to widespread net trading pressure by other mutual funds than funds with extreme flows, i.e., those in the middle three deciles of  $UPressure$  (deciles four, five, and six). Among them, we define a stock in the bottom decile of  $Pressure$  to experience a negative shock to agreement.

We regress forced CEO turnover on *Shock to agreement* and other control variables using the baseline Cox proportional hazard model as in Table 3. *Shock to agreement* is defined as a dummy that equals one if the stock is in the bottom decile of  $Pressure$  and the middle three deciles of  $UPressure$  during any of the four previous quarters and zero otherwise, i.e., a value of one means

a decline in agreement. The results, presented in Table 10, suggest that the likelihood of forced CEO turnover is significantly greater following a negative shock to agreement. The estimated coefficient of *Shock to agreement* is positive and statistically significant at the 1% level. This finding overcomes the omitted variable bias concern. Also, since it does not rely on any empirical measures of disagreement or firm performance, it enables us to circumvent any potentially confounding interpretations of the measures. It thus provides strong support for our disagreement hypothesis.

[Table 10 goes here]

### 5.2.3. *Evidence from a quasi-natural experiment*

To further check the robustness of our disagreement hypothesis, we exploit a quasi-natural experiment in which a group of firms experienced an exogenous increase in institutional ownership. The literature suggests that institutional investors, active or passive, play a significant role in corporate governance through different channels. They are generally involved in shareholder activism (e.g., Gillan and Starks, 2007) and other means of intervention and monitoring (e.g., Hartzell and Starks, 2003; Chen, Harford, and Li, 2007; Crane, Michenaud, and Weston, 2014; Appel, Gormley, and Keim, forthcoming). Crane, et al. (2014) suggest that even passive investors like index funds have incentives to intervene and influence corporate decisions through proxy voting and private communication with management if index-tracking-error-constraints or other reasons prevent them from selling their shares. Appel, et al. (forthcoming) specifically show that an increase in ownership by passive institutional investors is associated with an improvement in corporate governance. We expect that a greater concentration of share ownership in the hands of institutional investors can induce shareholders to exert more influence on corporate decisions.



We examine how the turnover-disagreement sensitivity changes in response to the exogenous increase in institutional ownership. If the turnover-disagreement relation is driven by an omitted variable, we do not expect it to change because the exogenous shock is unlikely to affect the omitted variable (e.g., uncertainty). However, since we have shown that shareholder governance is important for the disagreement-turnover relation, our disagreement hypothesis predicts that an exogenous improvement in institutional ownership will increase the turnover-disagreement sensitivity.

We take the inclusion of a firm in the S&P 500 as the exogenous shock to institutional ownership of the firm. S&P 500 inclusion increases a firm's institutional ownership for the following reason. Besides the fact that index funds tracking the S&P 500 will add the holding of the company, non-index funds that typically weigh their managers' performance against the benchmark of the S&P 500 will also have an incentive to hold companies in the S&P 500. Such an increase in institutional ownership, both active and passive, in the newly-included company is expected to be exogenous to expected performance. According to Standard & Poor's, the inclusion of a company in the index does not imply an endorsement of that company's investment potential. Aghion, Van Reenen, and Zingales (2013) use S&P 500 inclusion as an instrument for institutional ownership in their examination of the impact of institutional investors on corporate innovation.

S&P 500 inclusion is unlikely to affect uncertainty pertaining to the firm's growth opportunities and therefore should not impact the turnover-disagreement sensitivity under the alternative omitted variable story. Furthermore, although the selection of a company in the index is not entirely random, the exclusion of firms that have serious bankruptcy risk and the inclusion of firms with good past performance in the selection both work against us finding an increase in forced CEO turnover (which is supposed to be negatively related to past performance). Therefore,

we argue that S&P 500 inclusion can affect the disagreement-turnover relation only through its exogenous impact on institutional ownership.

For this, we focus on the sample of firms that are included in the S&P 500 during our sample period and examine the difference in the turnover-disagreement sensitivity between firm-years before the inclusion in the S&P 500 and firm-years after the inclusion in the S&P 500.<sup>31</sup> Specifically, we augment the baseline analysis in Table 3 by adding *S&P 500 inclusion*, a dummy that equals one for firm-years after the inclusion in the S&P 500 and zero otherwise, and an interaction term of it with disagreement. For our disagreement hypothesis to hold, we expect the interaction term to have the same signs as those of the disagreement proxies as reported in Table 3 and to be statistically significant. In comparison, we do not expect the interaction term to be significant if it is the omitted variable explanation that holds.

The results, presented in Table 11, are consistent with the prediction of our disagreement hypothesis. We find a significantly greater sensitivity of forced CEO turnover to disagreement after a firm's inclusion in the S&P 500. Overall, it suggests that the potential omitted variable bias is unlikely to be a major concern here.

[Table 11 goes here]

### **5.3. Could our disagreement proxies be measuring other things?**

One might be concerned that some of these measures – specifically, *Proxy proposal*, *Vote recommendation*, *Actual voting* – could also be related to investors' concern with potential agency issues in the firm in addition to disagreement between investors and management. That is, it is likely that investors may submit proxy proposals, recommend “vote no” or cast votes against certain directors when they are concerned with the agency problems in the firm, even though they

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<sup>31</sup> Firms that are already in the S&P 500 before the start of our sample period or are included in the S&P 500 after the end of our sample period 1993-2010 are not included in the sample for this test.

share an aligned view with management. In other words, investors may be dissatisfied with current firm practices rather than disagreeing on the future direction of the firm. This measurement error in these disagreement proxies, if it exists, might thus confound the interpretation of our finding. However, to the extent that investors' dissatisfaction with current firm practices (such as agency problems) has been incorporated in stock performance, controlling for stock performance (as we have done earlier) should be sufficient to delineate the effect of disagreement. We nevertheless provide further evidence that the issue of measurement error is of little concern and the impact of disagreement on forced CEO turnover is a robust finding.

First, if our *Proxy proposal* measure mainly captures investors' agency concerns, we would expect to observe a less frequent occurrence of proxy proposal submissions following the enactment of the Sarbanes-Oxley Act in 2002 and the change in NYSE and Nasdaq listing rules in 2003 that aimed to increase board independence in listing firms, both of which arguably enhanced corporate governance standards in public firms. We find this is not the case.<sup>32</sup> Second, if agency problems do not vary over time within a firm and thus represent more of an issue cross-sectionally, then our firm-fixed-effect estimation, discussed earlier, will be effective in accounting for. Third, as discussed earlier, our examination using mutual fund flow-induced fire sales as an exogenous shock to investor-management agreement, which does not rely on any measures of disagreement, confirms the significant impact of disagreement on forced CEO turnover.

Lastly, we conduct an additional check that addresses this issue more directly. For each of the three disagreement measures concerned, we estimate an adjusted measure of disagreement after filtering out potential agency concerns in a firm from the original measure and then examine the impact of this adjusted disagreement measure on forced CEO turnover. This is done with a two-

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<sup>32</sup> We cannot conduct similar checks for *Vote recommendation* and *Actual voting* because the data coverage for these two measures starts from 2003.

stage regression approach. Specifically, in the first stage, we regress each of these disagreement measure on a set of variables that are widely used as proxies for potential agency problems in a firm as well as yearly and industry dummies. These variables include *Abnormal accruals*, *Market-to-book*, *Free cash flow*, *GIM index* (Gompers, Ishii, and Metrick, 2003), *Entrenched* (the CEO entrenchment index that we develop in Section 4.1.3), and *Excessive compensation*.<sup>33</sup> Firms with higher abnormal accruals (proxy for a higher likelihood of misaligned managerial incentives), lower market-to-book ratios (proxy for fewer growth opportunities), higher free cash flows, more anti-takeover measures, higher entrenchment indices, or excessive CEO compensation are more likely to be subject to more severe agency problems. In the second stage, we repeat our baseline analysis in Table 3 with each disagreement measure being replaced by the estimated residual in the first stage (which is the adjusted disagreement measure).

The results of the analyses in both stages are presented in Table 12. In Panel A for the first-stage analysis, we indeed do not find evidence that these widely-accepted proxies for agency problems are correlated with our disagreement measures in a consistent way. For example, while *Abnormal accrual*, *Entrenched*, and *Excessive compensation* are positively related to *Proxy proposal*, *GIM index* and *Free cash flow* are negatively related to it. Also, inconsistent with the agency interpretation of our disagreement measure, we find that *Entrenched* is negatively related to both *Vote recommendation* and *Actual voting*; *Market-to-book* is positively related to *Vote recommendation* and *Free cash flow* is negatively related to *Actual voting*. The results, together with our earlier finding of no change in the occurrence of proxy proposals following exogenous governance shocks due to the Sarbanes-Oxley Act and changes in exchange listing rules, suggest that the three of our disagreement proxies are not systematically related with agency problems, consistent with the conceptual difference between disagreement and agency concerns.

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<sup>33</sup> We note that, depending on how well this set of variables capture potential agency problems in a firm, the extent of which the adjusted disagreement measure is free of potential agency concerns varies across firms. However, on average, it helps to mitigate the impact of potential agency concerns that might be captured in the original disagreement measure.

Nevertheless, in Panel B for the second-stage analysis, we find that the estimated coefficients of all the three adjusted disagreement measures have predicted signs and are statistically significant, consistent with our disagreement hypothesis. The coefficients of all other control variables, which we do not report in the interest of brevity, are comparable to those in Table 3. Overall, the results reassure us that three of our disagreement measures are not subject to measurement error, and that even if measurement error exists, it does not affect the results significantly.

[Table 12 goes here]

## **6. Conclusion**

Our paper deviates from the conventional focus on firm performance in the study of involuntary CEO turnover, and examines instead the power of investor-management disagreement as a driver of CEO turnover. The reason is that higher disagreement leads to a higher cost of capital for the firm, so a CEO is more likely to be forced out if there is a higher level of investor-management disagreement. And this is more likely to be the case when the firm is financially more constrained and thus equity financing is more likely to be needed, and when the CEO is less entrenched or shareholder governance is stronger. Investor-management disagreement declines after forced CEO turnover, and anticipation of this results in a stock price reaction to the announcement of the firing of a CEO with low agreement with investors that is more positive than the announcement effects associated with other types of forced turnover.

We also examine the impact of investor-management disagreement on the sensitivity of forced CEO turnover to firm performance as well as a firm's choice of an internal versus external CEO. We find that a CEO's dismissal decision is less sensitive to firm performance if she shares a higher level of agreement with investors. The firm is more likely to select an external CEO when the departing CEO has higher disagreement with investors. Our paper thus highlights the

role of a previously-ignored factor – investor-management disagreement – in the CEO turnover decision.

## **Appendix: Variable Definitions**

### **A. 1. Investor-management disagreement**

#### A.1.1. Difference between the analyst forecast of a firm's EPS and its actual value

Our first measure of investor-management disagreement, adopted by Dittmar and Thakor (2007), is the difference between the analyst forecast consensus of a firm's earnings per share (EPS) for a fiscal year and the actual EPS value, scaled by the absolute value of the actual EPS. The analyst forecasts, chosen as the ones most close to the actual EPS disclosure, are made no more than 120 days ago. The idea is that investors' propensity to disagree with management increases in the amount of the firm's EPS falling below the analyst forecast. The lower a manager's ability to outperform beyond expectation, the more likely investors are to question her decisions. Thus, a more positive number of this proxy implies a higher level of disagreement. Our final sample using this disagreement proxy spans 1990 firms and 17568 firm-years from 1993 to 2010.

Like Dittmar and Thakor (2007), we do not use disagreement proxies based on the firm's stock performance, because disagreement affects firm valuation, both in theory and in the data (Dittmar and Thakor, 2007), and thus it will be hard to disentangle the effect of stock-performance-related disagreement proxies from that of firm performance. Our accounting-performance-based (EPS) disagreement proxy here does not suffer from this problem. Disagreement does not have any immediate implications for accounting performance. Instead, accounting performance can reasonably affect disagreement, especially when it is contrasted with investors' expectation of this performance. In regressions on CEO turnover, we control for various measures of firm performance. This provides stronger reassurance that this disagreement proxy captures the effect of disagreement that is orthogonal to that of firm performance.

#### A.1.2. Submission of proxy proposals in a given year

Our other three disagreement measures are defined following Huang and Thakor (2013). The second proxy for disagreement exploits the idea that investors may submit proxy proposals for a shareholder vote when they disagree and therefore press for changes, but the private communication with management for changes is not effective or fails.<sup>35</sup> Institutional investors, in

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<sup>35</sup> In more extreme cases, investors may initiate proxy contests. DeAngelo and DeAngelo (1989) and Mulherin and Poulsen (1998) find that many CEOs are replaced following proxy contests. However, proxy contests are quite rare

particular, public and union pension funds, investment firms, and coordinated investors, are found to be the most active sponsors of proxy proposals (e.g., Gillan and Starks, 2000; Thomas and Cotter, 2007; Renneboog and Szilagyi, 2011). To capture our idea of disagreement, we focus on governance-related proposals only.<sup>36</sup> The issues addressed in such proposals include, but are not limited to, shareholder voting, takeovers, selection of directors, executive compensation, and the sale of the company. Despite the nonbinding nature of voting on shareholder proxy proposals, proposal submission sponsored by shareholders is a conspicuous sign of investor-management disagreement. We use the number of shareholder proxy proposals that a firm receives in a given year to measure the level of disagreement. In untabulated results for brevity, we find that our findings are robust if we use an indicator variable of whether or not a firm receives proxy proposal submissions.

Note that our use of proxy proposal as a disagreement measure does not necessarily suggest that investors' beliefs are always aligned with the firm's management if we do not observe the proposal submissions. It is likely that, in some firms, investors may choose not to submit proxy proposals as a means to challenge managerial decisions, because some unobservable factors may prevent them from doing so at any time. Therefore, to examine whether investors are more likely to disagree with management based on proxy proposal submissions, we follow Huang and Thakor (2013) and exclude firms from our analysis that are never observed to have any shareholder proxy proposals in any given year of the sample period 1993-2010. In focusing on firms that have experienced at least one proxy proposal submission over the sample period, we argue that investors are more likely to disagree with management in the years they submit proxy proposals than in the years in which they do not. Our final sample in using shareholder proxy proposal as a disagreement proxy covers 972 firms and 13121 firm-years from 1993 to 2010.

#### A.1.3. Vote recommendations in director election

Investors can signal their disagreement with management in the case of director elections. Our third and fourth proxies for disagreement exploit this idea. It is observed that some investors organize "just vote no" campaigns against one or more director candidates to be elected before a director election. Conducted via letters, press release, or internet communications, such campaigns encourage fellow shareholders to withhold votes for the candidate(s). More recently,

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with an average of 56 contests per year during 1994-2012 (see Fos (forthcoming)) and thus focusing exclusively on them does not sufficiently capture the effect of disagreement on corporate decisions.

<sup>36</sup> The other type of proposals is social responsibility related and typically submitted by religious/socially responsible investors.



third-party proxy advisors like Institutional Shareholder Services (ISS) also start issuing vote recommendations for all director candidates who are up for election every year. Voting Analytics (a product of ISS) provides detailed records of such vote recommendations, either “for” or “withhold” (“against”), issued by ISS starting from 2003 for elections in most of the Russell 1000 firms and many of the Russell 2000 firms.

Therefore, for our third disagreement proxy, we relate it to the extent to which a firm’s director candidates will receive objections from shareholders or unfavorable recommendations from independent proxy advisors *before* the election. The number of director candidates who are up for election may vary across firms and over time, which affects the extent of potential objections received in different firm-years. To account for this, we define the measure as the proportion of director candidates receiving a “withhold” or “against” recommendation from ISS or/and objections from certain shareholders in a “just vote no” campaign, among all candidates in the firm who are up for election in a given year. A greater magnitude of this measure shall indicate a higher level of disagreement. Our final sample in using this disagreement proxy includes 1613 firms and 8138 firm-years during 2003–2010.

Note that the vast majority of the observations for this measure come from ISS vote recommendations because “just vote no” campaigns are relatively rare. Del Guercio, Seery, and Woitke (2008) report 112 “just vote no” campaigns from 1990 to 2003, and we find 186 such campaigns from 2004 to 2010. They show an increase in disciplinary turnover following “just vote no” campaigns. However, no prior studies have examined the effect of ISS vote recommendations on CEO turnover.

#### A.1.4. Actual voting in director elections

The fourth proxy relates to actual shareholder voting *during* the director election. Shareholders may express their disagreement by withholding votes for or voting against certain candidates in the election of directors. Candidates are normally elected with high “for” votes.<sup>37</sup> Therefore, an even slightly lower vote may indicate shareholders’ disagreement. As such, we define this proxy as the proportion of director candidates receiving a below-yearly-median percentage of “for” votes in a given firm-year, where the yearly median is the median percentage of “for” votes of director candidates in the universe of firms with available actual voting data in

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<sup>37</sup> For instance, Cai, Garner, and Walkling (2009) find that an average director across all firms receives just over 94% of the “for” votes for the period of 2003–2005.

that year. After merging actual voting data with our sample from ExecuComp, the final sample with this fourth disagreement proxy covers 1585 firms and 6729 firm-years from 2003 to 2010.<sup>38</sup>

## A.2. Other variables

**Abnormal Accruals** The difference between total accruals and normal accruals where normal accruals is estimated from the Jones abnormal accrual model:

$$TA_{it}/A_{it-1} = \beta [1/A_{it-1}] + \alpha_1 [\Delta REV_{it}/A_{it-1}] + \alpha_2 [PPE_{it}/A_{it-1}] + \varepsilon_{it}$$

where TA is the total accruals, A is total assets, REV is revenues, and PPE is gross property, plant, and equipment.

**Age** Age of the CEO (in years)

**Age squared** Square of Age

**Analyst dispersion** Standard deviation of raw (i.e. not split-adjusted) analysts' forecasts

**CEO-Chair duality** A dummy that takes a value of one if the CEO is also the chairperson of the board, and zero otherwise

**CEO blockholding** A dummy that takes a value of one if the fraction of outstanding shares owned by the CEO is greater than 5%, and zero otherwise

**EW Industry stock return** Equally-weighted average stock returns for all firms in Compustat-CRSP from the same Fama-French 48 industry as the sample firm. We exclude each sample firm from the construction of its industry benchmark to eliminate any artificial correlation.

**Excessive compensation** A dummy that takes a value of one if the total compensation of the CEO is greater than 120% of the median CEO compensation of a peer firm group, which consists of all firms in the same industry of the same year with total assets ranging within 50% – 150% of the total assets of the sample firm, and zero otherwise.

**Firm size** Natural log of the total assets of the firm

**Free Cash Flow** Operating income before depreciation deducted by the sum of

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<sup>38</sup> The smaller sample size here, compared to that of the vote recommendation sample, is due to the missing information in actual votes for many firm-years.

	interest expense, total income tax, preferred dividends and common dividends, denominated by lagged one-year total assets.
GIM index	Anti-takeover measure index constructed by Gompers, Ishii, and Metrick (2003).
Institutional blockholding	A dummy that takes a value of one if there is at least one institutional investor holding more than 5% of the firm's outstanding shares, and zero otherwise
Leverage	Total book value of debt normalized by the sum of the total book value of debt and market value of equity
Ln(Tenure)	Natural logarithm of one plus the number of years the CEO was in office
Market-to-Book	Sum of the total book value of debt and market value of equity deflated by the firm's total assets
ROA	Net income deflated by one-year lagged total assets
Stock return	Fama-French 48-industry adjusted daily stock return compounded for the previous 12 months
Stock volatility	Volatility in the firm's stock return over the previous 12 months
Total directors	Total number of directors who are up for (re)election in a given year

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**Table 1**  
**Year-wise distribution of CEO turnover**

This table presents the distribution by year of the number and frequency of overall, forced, and external CEO successions for sample firms with no missing *Forecast-Actual EPS* data and covered in ExecuComp between 1993 and 2009. Successions due to mergers, spin-offs, and interim CEO changes are excluded. *Forecast-Actual EPS* is the difference between the mean analyst forecast of a firm's EPS for a fiscal year and its actual value, scaled by the absolute value of actual EPS.

Year	All successions		Forced successions		External successions	
	N	% of all firms	N	% of succession firms	N	% of succession firms
1993	39	7.69%	4	10.26%	9	23.08%
1994	53	8.48%	9	16.98%	6	11.32%
1995	79	11.67%	9	11.39%	13	16.46%
1996	74	10.25%	13	17.57%	22	29.73%
1997	82	10.69%	12	14.63%	24	29.27%
1998	95	11.11%	15	15.79%	19	20.00%
1999	117	12.79%	25	21.37%	26	22.22%
2000	110	11.49%	32	29.09%	30	27.27%
2001	90	9.06%	14	15.56%	27	30.00%
2002	91	8.71%	16	17.58%	30	32.97%
2003	101	8.96%	25	24.75%	40	39.60%
2004	94	8.01%	19	20.21%	27	28.72%
2005	152	12.39%	24	15.79%	49	32.45%
2006	126	9.13%	35	27.78%	55	43.65%
2007	131	8.53%	29	22.14%	52	39.69%
2008	151	9.90%	38	25.17%	48	31.79%
2009	106	6.90%	26	24.53%	43	40.95%
Total	1691	9.75%	345	19.45%	520	29.36%

**Table 2**  
**Summary statistics**

The upper part of Panel A presents summary statistics for the four measures of investor-management disagreement and for forced CEO turnover in each sample of the four measures. The lower part of Panel A reports the univariate evidence of the relation between disagreement and forced CEO turnover. The last column of it reports the difference of the mean disagreement measure for firm-years prior to forced CEO turnover and other firm-years in the sample. \*, \*\*, and \*\*\* indicate significance at 10%, 5% and 1%, respectively, from t-test conducted on the difference between the two groups. *Forecast-Actual EPS* is the difference between the mean analyst forecast of a firm's EPS for a fiscal year and its actual value, scaled by the absolute value of actual EPS. *Proxy Proposals* is the number of proxy proposals a firm receives in a given year. *Voting Recommendation* is the proportion of director candidates receiving a "withhold" or "against" recommendation from ISS or/and certain shareholders in a "just vote no" campaign, among all candidates in the firm who are up for election in a given year. *Actual Voting* is defined as the fraction of directors receiving less than the yearly median yes-vote casted in all firms with available actual voting data, among all candidates in the firm who are up for election in a given year. Panels B and C provides summary statistics of firm and CEO characteristics for an unbalanced panel of firms from 1993 to 2010 that have non-missing *Forecast-Actual EPS* data. Definitions of these variables are in Appendix.

**Panel A: Forced CEO Turnover and Measures of Investor-Management Disagreement**

	Mean	Median	S.D.	N
<i>Forecast – Actual EPS</i>	0.04	-0.01	0.27	17568
<i>Forced CEO turnover</i>	0.020	0	0.141	17568
<i>Proxy Proposals</i>	0.55	0	1.09	13121
<i>Forced CEO turnover</i>	0.020	0	0.143	13121
<i>Voting Recommendation</i>	0.10	0	0.22	8138
<i>Forced CEO turnover</i>	0.019	0	0.138	8138
<i>Actual Voting</i>	0.23	0	0.34	6727
<i>Forced CEO turnover</i>	0.022	0	0.148	6727

	Forced CEO turnover		Other Firm-years		Difference
	N	Mean	N	Mean	
<i>Forecast – Actual EPS</i>	345	0.10	17223	0.04	0.06***
<i>Proxy Proposals</i>	267	0.75	12854	0.55	0.20***
<i>Voting Recommendation</i>	153	0.14	7985	0.09	0.05***
<i>Actual Voting</i>	148	0.40	6581	0.23	0.17***

	Mean	Median	S.D.	N
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**Panel B: Firm Characteristics**

Firm size (log)	7.61	7.48	1.70	17568
Market-to-Book	1.70	1.24	1.46	17568
Leverage	0.22	0.17	0.21	17568
Stock return	0.03	-0.01	0.42	17568
Stock volatility	0.41	0.36	0.21	17568
ROA	0.04	0.05	0.14	17568
Analyst dispersion	0.24	0.12	0.33	17568
Institutional blockholding	0.77	1	0.42	17568
EW Idiosyncratic stock return	0.05	-0.01	0.56	17562
EW Industry stock return	0.10	0.09	0.32	17568
EW Industry-induced stock return	0.11	0.11	0.31	17562

**Panel C: CEO Characteristics**

CEO blockholding	0.11	0	0.31	17568
Age	55.78	56	7.10	17568
Tenure	8.64	6.25	7.61	17568
CEO-Chair Duality	0.62	1	0.48	17568

**Table 3**  
**The effect of disagreement on forced CEO turnover**

This table presents coefficient estimates from Cox proportional hazard regressions that examine the likelihood of forced CEO turnovers. The investor-management disagreement proxy used in each regression is indicated at the top of the table. *Forecast-Actual EPS* is the difference between the mean analyst forecast of a firm's EPS for a fiscal year and its actual value, scaled by the absolute value of actual EPS. *Proxy Proposals* is the number of proxy proposals a firm receives in a given year. *Voting Recommendation* is the proportion of director candidates receiving a "withhold" or "against" recommendation from ISS or/and certain shareholders in a "just vote no" campaign, among all candidates in the firm who are up for election in a given year. *Actual Voting* is defined as the fraction of directors receiving less than the yearly median yes-vote casted in all firms with available actual voting data, among all candidates in the firm who are up for election in a given year. All other explanatory variables are defined in Appendix. Year fixed effects are included in all regressions. Different industries (as defined using Fama-French 48 industries) are allowed to have different baseline hazards. Robust standard errors are clustered by firm and reported in parentheses. \*, \*\*, and \*\*\* indicate significance at 10%, 5%, and 1%, respectively.

	Disagreement Proxies			
	Forecast-Actual EPS	Proxy Proposal	Voting Recommendation	Actual Voting
Disagreement <sub>t-1</sub>	0.40 <sup>***</sup> (0.13)	0.16 <sup>***</sup> (0.06)	0.75 <sup>**</sup> (0.32)	1.08 <sup>***</sup> (0.26)
Stock return <sub>t-1</sub>	-1.27 <sup>***</sup> (0.23)	-1.36 <sup>***</sup> (0.27)	-1.17 <sup>***</sup> (0.32)	-1.18 <sup>***</sup> (0.33)
EW Industry stock return <sub>t-1</sub>	-0.70 <sup>**</sup> (0.29)	-0.77 <sup>**</sup> (0.32)	-0.35 (0.72)	-0.51 (0.73)
CEO blockholding <sub>t-1</sub>	-0.86 <sup>***</sup> (0.30)	-0.94 <sup>***</sup> (0.32)	-0.04 (0.33)	-0.02 (0.34)
Age <sub>t</sub>	0.05 (0.10)	-0.12 (0.12)	0.19 (0.16)	0.19 (0.16)
Age squared <sub>t</sub>	-0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
CEO-Chair duality <sub>t</sub>	-0.86 <sup>***</sup> (0.12)	-0.75 <sup>***</sup> (0.13)	-0.69 <sup>***</sup> (0.20)	-0.74 <sup>***</sup> (0.21)
Firm size <sub>t-1</sub>	0.18 <sup>***</sup> (0.05)	0.04 (0.06)	0.19 <sup>***</sup> (0.07)	0.24 <sup>***</sup> (0.07)
Institutional blockholding <sub>t-1</sub>	0.20 (0.15)	-0.13 (0.14)	0.24 (0.30)	0.16 (0.29)
Market-to-Book <sub>t-1</sub>	-0.08 (0.06)	-0.09 (0.08)	-0.05 (0.09)	-0.01 (0.09)
Stock volatility <sub>t-1</sub>	1.55 <sup>***</sup> (0.37)	1.22 <sup>***</sup> (0.44)	2.74 <sup>***</sup> (0.61)	2.33 <sup>***</sup> (0.60)
Leverage <sub>t-1</sub>	0.10 (0.36)	0.84 <sup>**</sup> (0.40)	-0.36 (0.54)	-0.59 (0.57)
Analyst dispersion <sub>t-1</sub>	0.11 (0.18)			
Total directors <sub>t-1</sub>			0.03 (0.03)	0.03 (0.03)
Observations	17568	13121	8138	6727

Table 4

### The effect of disagreement on forced CEO turnover: Alternative measures of firm performance

This table presents coefficient estimates from Cox proportional hazard regressions that examine the likelihood of forced CEO turnovers with controls for alternative measures of firm performance as indicated on the top of the table. *Average ROA* is the average ROA of year t-1 and year t-2.  $\Delta ROA$  is the change in ROA from year t-2 to year t-1. *Tenure return*, defined in Section 4.1.2, is weighted average of past stock returns along a CEO's tenure with higher values of  $\Lambda$  implying heavier weights placed on more recent returns. The investor-management disagreement proxy used in each regression is indicated at the top of each panel. All other explanatory variables are defined in Appendix. Year fixed effects are included in all regressions. Different industries (as defined using Fama-French 48 industries) are allowed to have different baseline hazards. Robust standard errors are clustered by firm and reported in parentheses. \*, \*\*, and \*\*\* indicate significance at 10%, 5%, and 1%, respectively.

	Alternative Performance Measures						
	ROA	Average ROA	$\Delta ROA$	Tenure return $_{\Lambda=0}$	Tenure return $_{\Lambda=1}$	Tenure return $_{\Lambda=2}$	Tenure return $_{\Lambda=3}$
Panel A: Forecast – Actual EPS							
Disagreement $_{t-1}$	0.43*** (0.13)	0.43*** (0.13)	0.41*** (0.13)	0.36** (0.18)	0.35** (0.17)	0.36** (0.17)	0.36** (0.17)
Performance measure	-1.13** (0.55)	0.35 (0.52)	-2.29*** (0.49)	-16.59** (7.87)	-27.85*** (6.23)	-26.46*** (5.49)	-22.81*** (4.83)
Observations	17567	17555	17555	13660	13660	13660	13660
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Proxy Proposal							
Disagreement $_{t-1}$	0.17*** (0.06)	0.17*** (0.06)	0.17*** (0.06)	0.26*** (0.08)	0.25*** (0.08)	0.25*** (0.08)	0.26*** (0.08)
Performance measure	-1.49* (0.81)	0.37 (0.61)	-2.24*** (0.78)	-24.44*** (9.26)	-31.38*** (8.66)	-30.19*** (7.59)	-26.01*** (6.42)
Observations	13121	13115	13115	8926	8926	8926	8926
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel C: Voting Recommendation							
Disagreement $_{t-1}$	0.69** (0.32)	0.68** (0.32)	0.68** (0.32)	0.70* (0.43)	0.77* (0.43)	0.76* (0.43)	0.74* (0.43)
Performance measure	-1.66* (0.93)	-0.11 (0.96)	-2.37*** (0.86)	-6.87 (9.65)	-18.23* (9.56)	-15.72* (8.35)	-12.06* (7.19)
Observations	8138	8138	8138	6062	6062	6062	6062
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel D: Actual Voting							
Disagreement $_{t-1}$	1.08*** (0.26)	1.08*** (0.26)	1.09*** (0.26)	1.36*** (0.33)	1.37*** (0.33)	1.38*** (0.33)	1.38*** (0.33)
Performance measure	-1.41 (0.95)	0.16 (0.97)	-2.38*** (0.85)	-5.11 (9.48)	-18.42* (9.95)	-16.60* (8.71)	-13.24* (7.47)
Observations	6727	6727	6727	5535	5535	5535	5535
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

**Table 5**  
**The effect of disagreement on forced CEO turnover: Cross-sectional study**

This table presents coefficient estimates from Cox proportional hazard regressions that examine the likelihood of forced CEO turnovers in different subsample of firms. Panel A reports results for the subsamples of “Constrained” and “Not constrained”. Firms grouped into the “Constrained” subsample are those that have their Whited and Wu (2006) index in the top tercile of the sample and thus are most likely to be financially constrained. Firms grouped into the “Not constrained” are those that have the index in the bottom tercile of the sample and thus are least likely to be financially constrained. Panel B reports results for the subsamples of “Less entrenched” and “Entrenched”. Firms in which at least two of the followings are true are grouped into the “Entrenched” subsample: The CEO is also the chairman of the board; the fraction of outsiders on the board is below the sample average; and the fraction of stock ownership by the executive directors is greater than the sample average, and therefore their CEOs are more likely to be entrenched. All other firms are labeled as “Less entrenched”. Panel C reports results for the subsample of “Concentrated” and “Less concentrated”. Firms whose largest five institutional investors hold more than 20% of their shares outstanding in aggregate are grouped into the “Concentrated” subsample, and all other firms are in the “Less concentrated” subsample. The investor-management disagreement proxies used in each regression is indicated at the top of the table. All other explanatory variables used in Table 3 and yearly dummies are included but not reported for brevity. Different industries (as defined by Fama-French 48 industries) are allowed to have different baseline hazard. Robust standard errors are clustered by firm and reported in parentheses. \*, \*\*, and \*\*\* indicate significance at 10%, 5% and 1% respectively.

	Disagreement Proxies							
	Forecast – Actual EPS		Proxy Proposal		Voting Recommendation		Actual Voting	
	Panel A: Firms’ financial constraints							
	Constrained	Less constrained	Constrained	Less constrained	Constrained	Not constrained	Constrained	Not constrained
Disagreement <sub>t-1</sub>	0.45** (0.21)	0.13 (0.33)	0.28** (0.12)	0.08 (0.08)	1.00* (0.58)	0.86 (0.56)	1.22*** (0.47)	1.68*** (0.42)
	Panel B: CEO entrenchment							
	Less entrenched	Entrenched	Less entrenched	Entrenched	Less entrenched	Entrenched	Less entrenched	Entrenched
Disagreement <sub>t-1</sub>	0.41** (0.19)	0.70 (0.43)	0.19*** (0.07)	-0.02 (0.15)	1.12*** (0.38)	1.04 (1.38)	1.24*** (0.31)	1.98* (1.09)
	Panel C: Stock ownership concentration by institutional investors							
	Concentrated	Less concentrated	Concentrated	Less concentrated	Concentrated	Less concentrated	Concentrated	Less concentrated
Disagreement <sub>t-1</sub>	0.54*** (0.19)	0.34 (0.33)	0.23*** (0.08)	0.22* (0.12)	0.84** (0.40)	0.08 (1.28)	1.06*** (0.32)	0.90 (0.75)

**Table 6**  
**High agreement and the sensitivity of forced CEO turnover to firm performance**

This table presents coefficient estimates from linear regressions that examine the likelihood of forced CEO turnovers. The investor-management disagreement proxy used in each regression is indicated at the top of the table. *High-agreement* is an indicator for each proxy of investor-management agreement, such that it equals one if (1) the difference between the mean analyst forecast of a firm's EPS for a fiscal year and its actual value, scaled by the absolute value of actual EPS, is less than the sample median; (2) if the firm does not receive any proxy proposals in the year; (3) if no director candidates in the firm who are up for election in the year receive a "withhold" or "against" recommendation from ISS or/and certain shareholders in a "just vote no" campaign; or (4) if no director candidates in the firm who are up for election in the year receive less than the yearly median yes-vote casted in all firms with available actual voting data. *Entrenched* is a dummy that takes a value of one if at least two of the followings are true: the CEO is also the chairman of the board; the fraction of outsiders on the board is below the sample average; and the fraction of stock ownership by the executive directors is greater than the sample average. Year and industry dummies are included but not reported for brevity. Robust standard errors are clustered by industry and reported in parentheses. \*, \*\*, and \*\*\* indicate significance at 10%, 5% and 1% respectively.

	Disagreement Proxies			
	Forecast-Actual EPS	Proxy Proposal	Voting Recommendation	Actual Voting
High-agreement	-0.007*** (0.003)	-0.008** (0.004)	-0.009 (0.007)	-0.015*** (0.004)
High-agreement X Stock return <sub>t-1</sub>	0.021*** (0.005)	0.008*** (0.003)	-0.006 (0.010)	0.025* (0.012)
Stock Return <sub>t-1</sub>	-0.032*** (0.006)	-0.029*** (0.007)	-0.013 (0.013)	-0.043*** (0.014)
EW Industry Stock Return <sub>t-1</sub>	-0.011 (0.008)	-0.018 (0.011)	-0.030** (0.014)	-0.030* (0.016)
Entrenched	-0.014*** (0.003)	-0.012*** (0.003)	-0.015*** (0.003)	-0.014*** (0.004)
Ln(Tenure) <sub>t</sub>	-0.000 (0.002)	0.007*** (0.002)	0.006*** (0.002)	-0.001 (0.003)
Age <sub>t</sub>	-0.003 (0.003)	-0.002 (0.003)	0.001 (0.004)	0.002 (0.006)
Age squared <sub>t</sub>	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Firm size <sub>t-1</sub>	0.004*** (0.001)	0.001 (0.001)	0.004*** (0.001)	0.005*** (0.002)
Institutional blockholding <sub>t-1</sub>	0.007** (0.003)	-0.000 (0.004)	0.005 (0.006)	0.003 (0.008)
Stock volatility <sub>t-1</sub>	0.041*** (0.013)	0.025*** (0.009)	0.048*** (0.016)	0.061*** (0.019)
Market-to-Book <sub>t-1</sub>	-0.002 (0.002)	-0.002 (0.002)	-0.002 (0.002)	-0.001 (0.002)
Leverage <sub>t-1</sub>	0.003 (0.011)	0.017* (0.009)	-0.008 (0.013)	-0.008 (0.016)
Analyst dispersion <sub>t-1</sub>	0.005 (0.004)			
Total directors <sub>t-1</sub>			0.000 (0.001)	0.000 (0.001)
Constant	0.068 (0.073)	0.055 (0.077)	-0.053 (0.116)	-0.090 (0.169)
Observations	11826	9143	6372	5211
Adjusted R <sup>2</sup>	0.014	0.009	0.007	0.013

**Table 7**  
**The effect of disagreement on external CEO hiring**

This table presents results from logit regressions (coefficients of the marginal effect are reported) that examine the impact of investor-management disagreement on the likelihood of external CEO selection, conditional on CEO succession. The dependent variable takes a value of one if the newly appointed CEO has been with the firm for less than a year prior to the appointment and zero otherwise. The investor-management disagreement proxy used in each regression is indicated at the top of the table. *Forecast-Actual EPS* is the difference between the mean analyst forecast of a firm's EPS for a fiscal year and its actual value, scaled by the absolute value of actual EPS. *Proxy Proposals* is the number of proxy proposals a firm receives in a given year. *Voting Recommendation* is the proportion of director candidates receiving a "withhold" or "against" recommendation from ISS or/and certain shareholders in a "just vote no" campaign, among all candidates in the firm who are up for election in a given year. *Actual Voting* is defined as the fraction of directors receiving less than the yearly median yes-vote casted in all firms with available actual voting data, among all candidates in the firm who are up for election in a given year. *Forced turnover* is a dummy that equals one if the departing CEO is forced out and zero otherwise. Other explanatory variables are defined in Appendix. Year and industry dummies are included in the regressions. Robust standard errors are clustered by firm and reported in parentheses. \*, \*\*, and \*\*\* indicate significance at 10%, 5% and 1% respectively.

	Disagreement Proxies			
	Forecast-Actual EPS	Proxy Proposal	Voting Recommendation	Actual Voting
Disagreement <sub>t-1</sub>	0.10 <sup>***</sup> (0.04)	0.03 <sup>***</sup> (0.01)	0.30 <sup>***</sup> (0.08)	0.16 <sup>***</sup> (0.05)
Forced turnover <sub>t</sub>	0.16 <sup>***</sup> (0.02)	0.16 <sup>***</sup> (0.03)	0.16 <sup>***</sup> (0.04)	0.17 <sup>***</sup> (0.04)
Stock return <sub>t-1</sub>	-0.11 <sup>***</sup> (0.03)	-0.12 <sup>***</sup> (0.04)	-0.19 <sup>***</sup> (0.06)	-0.18 <sup>***</sup> (0.06)
Firm size <sub>t-1</sub>	-0.01 (0.01)	-0.02 <sup>**</sup> (0.01)	-0.02 (0.02)	-0.01 (0.02)
Institutional blockholding <sub>t-1</sub>	0.003 (0.03)	-0.05 <sup>*</sup> (0.03)	-0.01 (0.06)	0.004 (0.06)
Market-to-Book <sub>t-1</sub>	-0.01 (0.01)	-0.01 (0.01)	0.01 (0.02)	0.02 (0.02)
Stock volatility <sub>t-1</sub>	0.25 <sup>***</sup> (0.07)	0.28 <sup>***</sup> (0.08)	0.12 (0.16)	0.19 (0.15)
Leverage <sub>t-1</sub>	-0.06 (0.07)	-0.11 (0.07)	-0.03 (0.11)	0.00 (0.12)
Analyst dispersion <sub>t-1</sub>	-0.02 (0.03)			
Total directors <sub>t-1</sub>			-0.00 (0.01)	0.001 (0.01)
Observations	1687	1298	689	670
Pseudo R <sup>2</sup>	0.092	0.102	0.093	0.091

Table 8  
The effect of forced CEO turnover on agreement

This table presents results from OLS regressions (columns (1) and (3)) and logit regressions (columns (2) and (4)) of forced CEO the change in investor-management agreement from year  $t-1$  to year  $t+1$  on forced CEO turnover in year  $t$ . The dependent variables, defined as follows, are the changes in the four disagreement proxies which are indicated at the top of columns: a simple difference of *Forecast-Actual EPS* from year  $t-1$  to year  $t+1$ , where *Forecast-Actual EPS* is the difference between the mean analyst forecast of a firm's EPS for a fiscal year and its actual value, scaled by the absolute value of actual EPS; a dummy that equals one if the number of proxy proposals received in year  $t+1$  drops by at least two relative to the number of proxy proposals received in year  $t-1$ , and zero otherwise; a simple difference of *Vote Recommendation* from year  $t-1$  to year  $t+1$ , where *Vote Recommendation* is the proportion of director candidates receiving a "withhold" or "against" recommendation from ISS or/and certain shareholders in a "just vote no" campaign, among all candidates in the firm who are up for election in a given year; and a dummy that equals one if the fraction of directors receiving less than the yearly-median percentage of yes-votes among all candidates up for election in year  $t+1$  is less than that in year  $t-1$ , and zero otherwise. *Forced turnover* is a dummy that equals one if a forced CEO turnover occurs in year  $t$  and zero otherwise. Other explanatory variables are defined in Appendix. All regressions include year and Fama-French 48 industry dummy variables. Coefficients of the marginal effect are reported in the logit regressions. Robust standard errors are clustered by firm and reported in parentheses. \*, \*\*, and \*\*\* indicate significance at 10%, 5%, and 1% levels, respectively.

	Proxies for Change in Agreement			
	Forecast-Actual EPS	Proxy Proposal	Voting Recommendation	Actual Voting
	(1)	(2)	(3)	(4)
Forced turnover <sub>t</sub>	-0.07* (0.04)	0.013* (0.007)	-0.06*** (0.02)	0.06** (0.03)
Stock return <sub>t</sub>	-0.00 (0.01)	0.0004 (0.005)	-0.04*** (0.01)	0.04*** (0.01)
Stock volatility <sub>t</sub>	0.13*** (0.03)	-0.004 (0.011)	0.04* (0.02)	0.001 (0.03)
ROA <sub>t</sub>	-0.05 (0.06)	-0.026 (0.033)	0.07 (0.06)	-0.04 (0.09)
Market-to-Book <sub>t</sub>	0.00 (0.00)	-0.0004 (0.002)	-0.01** (0.00)	-0.02** (0.01)
Firm size <sub>t</sub>	0.01*** (0.00)	0.009*** (0.001)	0.00 (0.00)	-0.005 (0.003)
Observations	14993	9851	7503	6564
Adjusted/Pseudo R <sup>2</sup>	0.017	0.132	0.020	0.170



Table 9  
The effect of disagreement on voluntary CEO turnover

This table presents coefficient estimates from Cox proportional hazard regressions that examine the likelihood of voluntary CEO turnovers. The investor-management disagreement proxy used in each regression is indicated at the top of the table. *Forecast-Actual EPS* is the difference between the mean analyst forecast of a firm's EPS for a fiscal year and its actual value, scaled by the absolute value of actual EPS. *Proxy Proposals* is the number of proxy proposals a firm receives in a given year. *Voting Recommendation* is the proportion of director candidates receiving a "withhold" or "against" recommendation from ISS or/and certain shareholders in a "just vote no" campaign, among all candidates in the firm who are up for election in a given year. *Actual Voting* is defined as the fraction of directors receiving less than the yearly median yes-vote casted in all firms with available actual voting data, among all candidates in the firm who are up for election in a given year. All other explanatory variables are defined in Appendix. Year fixed effects are included in all regressions. Different industries (as defined using Fama-French 48 industries) are allowed to have different baseline hazards. Robust standard errors are clustered by firm and reported in parentheses. \*, \*\*, and \*\*\* indicate significance at 10%, 5%, and 1%, respectively.

	Disagreement Proxies			
	Forecast-Actual EPS	Proxy Proposal	Voting Recommendation	Actual Voting
Disagreement <sub>t-1</sub>	-0.05 (0.10)	-0.01 (0.05)	-0.63* (0.34)	-0.37 (0.23)
Stock return <sub>t-1</sub>	-0.38*** (0.11)	-0.25* (0.14)	-0.34* (0.21)	-0.43** (0.20)
EW Industry stock return <sub>t-1</sub>	-0.58** (0.23)	-0.14 (0.25)	-0.14 (0.46)	-0.06 (0.49)
CEO blockholding <sub>t-1</sub>	-0.24 (0.19)	-0.51* (0.27)	-0.45 (0.34)	-0.63* (0.36)
Age <sub>t</sub>	0.49*** (0.09)	0.60*** (0.12)	0.88*** (0.18)	0.81*** (0.17)
Age squared <sub>t</sub>	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)
CEO-Chair duality <sub>t</sub>	-0.70*** (0.10)	-0.89*** (0.11)	-0.28** (0.14)	-0.35** (0.14)
Firm size <sub>t-1</sub>	0.08** (0.03)	0.05 (0.04)	0.02 (0.05)	0.09* (0.05)
Institutional blockholding <sub>t-1</sub>	-0.05 (0.10)	-0.20* (0.10)	0.05 (0.18)	0.07 (0.19)
Market-to-Book <sub>t-1</sub>	-0.00 (0.03)	-0.01 (0.04)	0.08 (0.05)	0.13** (0.06)
Stock volatility <sub>t-1</sub>	0.63** (0.28)	0.93*** (0.33)	-0.30 (0.53)	-0.31 (0.56)
Leverage <sub>t-1</sub>	-0.09 (0.28)	-0.21 (0.31)	0.37 (0.42)	0.24 (0.42)
Analyst dispersion <sub>t-1</sub>	0.17 (0.12)			
Total directors <sub>t-1</sub>			-0.00 (0.02)	-0.02 (0.02)
Observations	16591	12295	8011	6609

Table 10  
The effect of disagreement on forced CEO turnover: Evidence from an exogenous shock to agreement

This table presents coefficient estimates from Cox proportional hazard regressions that examine the likelihood of forced CEO turnover following an exogenous shock to agreement. *Shock to agreement* is defined as a dummy that equals one if the stock is in the bottom decile of *Pressure* and the middle three deciles of *UPressure* during any of the four previous quarters and zero otherwise. *Pressure* is mutual fund flow-induced trading pressure defined as in Coval and Stafford (2007). *UPressure* is unforced trading pressure, defined as in Khan, Kogan, and Serafeim (2012), by mutual funds that experience mild capital flows (the middle eight deciles of flows). All other explanatory variables are defined in Appendix. Year fixed effects are included in all regressions. Different industries (as defined using Fama-French 48 industries) are allowed to have different baseline hazards. Robust standard errors are clustered by firm and reported in parentheses. \*, \*\*, and \*\*\* indicate significance at 10%, 5%, and 1%, respectively.

Shock to agreement <sub>t-1</sub>	0.71 *** (0.25)
Stock return <sub>t-1</sub>	-1.19 *** (-0.36)
EW Industry stock return <sub>t-1</sub>	-0.69 (-0.42)
CEO blockholding <sub>t-1</sub>	-0.72 * (-0.40)
Age <sub>t</sub>	0.05 (0.13)
Age squared <sub>t</sub>	0.00 (0.00)
CEO-Chair duality <sub>t</sub>	-1.05 *** (-0.17)
Firm size <sub>t-1</sub>	0.21 *** (0.06)
Institutional blockholding <sub>t-1</sub>	0.29 (0.20)
Market-to-Book <sub>t-1</sub>	-0.09 (-0.08)
Stock volatility <sub>t-1</sub>	1.82 *** (0.51)
Leverage <sub>t-1</sub>	0.82 * (0.48)
Observations	10095

Table 11

## The effect of disagreement on forced CEO turnover: Evidence from S&amp;P 500 addition

This table presents coefficient estimates from Cox proportional hazard regressions that examine the likelihood of forced CEO turnovers for firms that are included in the S&P 500. The investor-management disagreement proxy used in each regression is indicated at the top of the table. *Forecast-Actual EPS* is the difference between the mean analyst forecast of a firm's EPS for a fiscal year and its actual value, scaled by the absolute value of actual EPS. *Proxy Proposals* is the number of proxy proposals a firm receives in a given year. *Voting Recommendation* is the proportion of director candidates receiving a "withhold" or "against" recommendation from ISS or/and certain shareholders in a "just vote no" campaign, among all candidates in the firm who are up for election in a given year. *Actual Voting* is defined as the fraction of directors receiving less than the yearly median yes-vote casted in all firms with available actual voting data, among all candidates in the firm who are up for election in a given year. *S&P 500 inclusion* takes a value of one for subsequent years after the inclusion of the firm to the S&P 500 index, and zero for years prior to the year of inclusion. All other explanatory variables are defined in Appendix. Year fixed effects are included in all regressions. Different industries (as defined using Fama-French 48 industries) are allowed to have different baseline hazards. Robust standard errors are clustered by firm and reported in parentheses. \*, \*\*, and \*\*\* indicate significance at 10%, 5%, and 1%, respectively.

	Disagreement Proxies			
	Forecast – Actual EPS	Proxy Proposals	Voting Recommendation	Actual Voting
Disagreement X S&P 500 inclusion	2.42*** (0.80)	0.32*** (0.13)	5.84*** (0.03)	1.57* (0.88)
Observations	3171	1441	184	140
Controls	YES	YES	YES	YES

Table 12  
The effect of disagreement on forced CEO turnover: Adjusted measures of disagreement

Panel A presents coefficient estimates from OLS regressions of the disagreement measures on proxies for agency problems. Panel B presents coefficient estimates from Cox proportional hazard regressions of forced CEO turnovers on the estimated residuals obtained in the first-stage regressions of Panel A and other control variables as in Table 3. The investor-management disagreement proxy used in each regression is indicated at the top of the table. *Proxy Proposals* is the number of proxy proposals a firm receives in a given year. *Voting Recommendation* is the proportion of director candidates receiving a “withhold” or “against” recommendation from ISS or/and certain shareholders in a “just vote no” campaign, among all candidates in the firm who are up for election in a given year. *Actual Voting* is defined as the fraction of directors receiving less than the yearly median yes-vote casted in all firms with available actual voting data, among all candidates in the firm who are up for election in a given year. All other explanatory variables are defined in Appendix. Year and industry fixed effects are included in all regressions. Different industries (as defined using Fama-French 48 industries) are allowed to have different baseline hazards in Panel B. Robust standard errors are clustered by firm and reported in parentheses. \*, \*\*, and \*\*\* indicate significance at 10%, 5%, and 1%, respectively.

Panel A: First-stage regression of disagreement measures on proxies for agency problems			
	Proxy proposal	Voting Recommendation	Actual Voting
Abnormal Accruals	0.05*** (0.01)	0.003 (0.002)	0.003 (0.004)
Market-to-Book	-1.90 (9.50)	0.005*** (0.00)	-0.03 (0.06)
Free Cash Flow	-0.44* (0.24)	-0.07 (0.05)	-0.33*** (0.08)
GIM index	-0.05*** (0.01)	0.00 (0.00)	0.002 (0.002)
Entrenched	0.13*** (0.03)	-0.04*** (0.01)	-0.02** (0.01)
Excessive compensation	0.06** (0.03)	-0.01 (0.01)	0.003 (0.01)
Constant	1.71** (0.84)	0.14*** (0.06)	-0.16*** (0.06)
Observations	6743	4914	4005
Adjusted $R^2$	0.11	0.03	0.22

Panel B: Second-stage regression of forced CEO turnover on adjusted disagreement measures			
	Proxy proposal	Voting Recommendation	Actual Voting
Adjusted Disagreement <sub>t-1</sub>	0.22*** (0.07)	1.18*** (0.41)	1.41*** (0.39)
Observations	6582	4864	3960
Controls	Yes	Yes	Yes
Pseudo $R^2$	0.146	0.126	0.165