Changing of the Guards: Does Succession Planning Matter?[♦]

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ABSTRACT

This paper studies the effects of succession planning on management successions using hand-collected data on succession planning practices at U.S. public firms. Our tests highlight three dimensions in which succession planning impacts CEO turnover. Firms with succession plans (i) use more sophisticated performance metrics in evaluating their CEOs, (ii) experience lower uncertainty around successions and faster learning about CEO ability, and (iii) rely primarily on firm-specific information in CEO dismissals. Our findings are robust to the effects of firm and industry attributes, and indicate that succession planning improves the efficiency and lowers the cost of management transitions.

Keywords: CEO turnover, succession planning, CEO labor market, CEO ability, performance evaluation

JEL classification: G34, J24, J33, J41

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1. Introduction

In September 2009, Bank of America's CEO Ken Lewis announced his intention to retire by the end of the year. The company's board was taken by surprise as it scrambled to find a successor, and was further embarrassed as multiple candidates rebuffed the company's approach.[1] Several delays of self-imposed deadlines and rampant speculation that the company would be forced to choose a "stopgap CEO" followed. It was only days before Lewis' departure that the board named Brian Moynihan as the new CEO. This incident highlights that even the largest companies have long been complacent about succession planning; more than half of the respondents in a widely publicized recent survey admit that they would not be able to name a successor if the CEO had to leave immediately.[2]

In response to several high-profile succession failures at companies like Bank of America, in 2010 the U.S. Securities and Exchange Commission (SEC) issued a revised guidance regarding shareholder proposals relating to succession planning. As the SEC argues, "[o]ne of the board's key functions is to provide for succession planning so that the company is not adversely affected due to a vacancy in leadership. Recent events have underscored the importance of this board function to the governance of the corporation. We now recognize that CEO succession planning raises a significant policy issue regarding the governance of the corporation that transcends the day-to-day business matter of managing the workforce".[3] In addition to the SEC, securities analysts and credit rating agencies pay attention to succession planning in their recommendations as unplanned successions are costly.[4] A recent report by Strategy&, formerly known as Booz and Company, estimates that "companies forced into successions in recent years have lost […] about $1.8bn per company more than if the successions had been planned".[5]

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[1] See "Struggle to find successor for Lewis at BofA", *The Financial Times*, November 11, 2009 and "BofA may name stopgap chief if board needs more time," *Bloomberg*, November 23, 2009.
[2] 2010 Survey on CEO Succession Planning by Heidrick and Struggles, available at https://www.gsb.stanford.edu/sites/gsb/files/publication-pdf/cgri-survey-2010-ceo-succession.pdf.
[3] SEC Staff Bulletin from October 27, 2009, available at https://www.sec.gov/interps/legal/cfslb14e.htm.
[4] See "Investors identify their 7 top concerns relative to succession planning", PR Newswire, January 29, 2010.
[5] See "Change at the top comes with a cost", *The Financial Times*, April 13, 2015.

Given the pressure from the SEC and credit rating agencies, it is puzzling that only 12 percent of the CEO turnovers between 1994 and 2010 are "planned" and only one-third of public companies have disclosed their succession planning procedures as of 2010. What is more, many companies tend to resist pressure from shareholders to improve disclosures of their succession planning practices. For example, Whole Foods, one of the dozens of companies recently targeted by shareholders for inadequate disclosures, argues that publicly discussing its succession planning will "result in competitive harm" and present an "attempt to micro-manage the Board of Directors".[6]

The SEC's Proxy Disclosure Enhancements are aimed at increasing the amount of information companies must provide in their proxy statements regarding succession planning, including the board's leadership structure and its role in risk oversight. However, the SEC does not mandate any particular type of succession planning disclosure and many companies disclose little or no information. As a result, there has been almost no *direct* evidence on how ongoing formal succession planning affects managerial transitions. Our paper aims to fill this gap.

Using hand-collected data on succession planning practices in a comprehensive sample of public firms, we study how having a formal succession plan affects the nature and efficiency of CEO turnover decisions. Several of our contributions deserve attention. First, we provide novel large-scale evidence that succession planning ensures leadership continuity by reducing the likelihood of forced CEO turnovers and the incidence of interim successions. Second, we demonstrate that succession planning is associated with significantly lower uncertainty around a CEO turnover event as well as a much faster decline in uncertainty with the incoming CEO's tenure, indicating faster learning about CEO ability. Third, we present evidence that succession planning is associated with more sophisticated performance evaluation, even before a recent SEC-mandated change aimed at increasing the quality of such evaluation disclosures. Finally, we provide evidence

[6] See Form DEF 14-A filed by Whole Foods on Jan. 25, 2010, available at https://www.sec.gov/Archives/edgar/data/865436/000120677410000109/wholefoods_def14a.htm.

that firms with succession plans rely mostly on firm-specific (rather than industry) information in CEO dismissals, suggesting higher efficiency of management transitions.

Our paper relies on a new dataset of succession planning practices at over 3,000 public firms with CEO turnovers between 1994 and 2010[7]. We manually examine regulatory filings (8-K and DEF-14A forms) throughout the sample period to identify whether a firm has formally disclosed a management succession process. Only 12.4% of the CEO turnover events follow previously disclosed succession plans, but the tendency to make such information public has tripled over the sample period, from 6.3% in 1994-2003 (pre-Sarbanes Oxley) to 21.3% in 2004-2010 (post-Sarbanes Oxley).

We start by providing a general description of the effects of succession planning on CEO turnover. Firms with formal succession plans have an 8% lower likelihood of forcing their CEOs out. This effect is substantial in economic terms, equal to about one-third of the probability of forced CEO turnover in the sample. Such firms are not more likely to pick an insider successor, consistent with the observation that succession planning involves both grooming internal candidates and searching for external replacements. In addition, firms with succession plans are about 9% less likely to choose an interim CEO, i.e., one-third of the probability of an interim CEO succession. Taken together, these findings offer preliminary evidence that succession planning plays an important role in choosing a replacement CEO and ensuring a smooth management transition.

Identification is an important concern in studying the effects of succession planning on CEO turnover due to the likely endogeneity of succession planning to firm attributes. Even though we cannot fully reject such endogeneity, we aim to alleviate it by developing an instrumental variables (IV) framework that relies on recent work in the industrial organization literature (Hoberg and Phillips, 2010; Hoberg and Phillips, 2016). We predict a firm's likelihood of adopting a succession plan by the fraction of the firm's closest product rivals that have disclosed formal succession plans. We expect that the closer the competition between two firms in the product space, the greater the

[7] The CEO turnover data was generously provided to us by Dirk Jenter and Lucian Taylor.

similarity in their CEO labor market. We note two additional advantages of the product similarity measure as a predictor of a firm's succession planning – (i) it is time-varying, and (ii) intransitive. Intransitivity means that firms have distinct competitors, which is an advantage over more common industry definitions (e.g., SIC) as firms in the same (transitive) industry may follow similar turnover practices if they are exposed to common industry shocks. Even though we take great care in developing our IV framework, we acknowledge that our approach cannot demonstrate a definitive causal effect of succession planning on the efficiency of CEO turnover.

Adopting the above identification framework, we present three tests that highlight different dimensions in which formal succession planning impacts CEO turnover decisions. First, we show that firms with succession plans follow more sophisticated performance evaluation practices and are less affected by a recent SEC-mandated improvement in performance evaluation disclosures. Second, we demonstrate faster learning about CEO ability in firms with succession plans. Finally, we show that these firms are also more likely to rely primarily on firm-specific factors in evaluating their CEOs. These tests complement each other and present a comprehensive look at how succession planning affects the efficiency of management transitions.

Our first test makes use of a 2006 change in performance evaluation disclosures, which requires expanded discussion of specific performance metrics used to evaluate executives and set their compensation. As the new rule is aimed at increasing the quality of performance evaluation information, we hypothesize that it will impact the well-documented negative relationship between prior firm performance and turnover. We find support for our conjecture; the expanded disclosure increases the turnover-performance sensitivity of firms without succession plans but does not affect the turnover-performance sensitivity of firms that have disclosed succession plans prior to 2006. We interpret this result as evidence that firms with succession plans have already implemented more sophisticated performance evaluation procedures as part of their pre-existing succession plans.

The second set of tests focus on the effects of succession planning on firm uncertainty and learning about CEO ability. We start by documenting that firms with succession plans exhibit lower short-term volatility in the three days around the announcement of CEO turnover. We confirm these results over the long run; relative to firms with no succession plans, firms with succession plans experience significantly lower realized and idiosyncratic volatility over the first year of the successor CEO's tenure, especially in cases of voluntary turnover and when the succession plan provides additional details about the specific CEO transition taking place.

Importantly, succession planning impacts not only the level of uncertainty surrounding a CEO turnover event but also the resolution of this uncertainty over the tenure of the incoming CEO. Our approach extends prior work by Taylor (2013) and Pan, Wang, and Weisbach (2015) who describe a convex decline in volatility following CEO turnover. This is suggestive of a Bayesian learning model where uncertainty about CEO ability gets resolved within the first few years of CEO tenure. We conjecture that the additional disclosure associated with a succession plan will allow for faster learning about the new CEO's ability. Indeed, we show strikingly different patterns of learning at firms with and without succession plans. While we find a convex learning curve at firms without succession plans, we provide evidence that firms with succession plans experience faster learning occurring mostly during the first year of the new CEO's tenure. Thus, succession planning affects not only the initial uncertainty but also the nature of learning about the incoming CEO's ability.

The third test examines the types of information – firm-specific or industry – that firms use in CEO turnover decisions. We demonstrate that firms with succession plans make more efficient dismissal decisions by properly filtering out industry factors from their assessment of CEO ability. Following the approach in Jenter and Kanaan (2015), we first confirm that forced CEO turnovers in the sample of all firms are driven not only by idiosyncratic firm performance but also by industry performance, indicating that firms do not fully filter out industry factors from CEO firing decisions. However, we find that the link between the probability of a forced turnover and industry performance is attenuated for firms with succession planning, suggesting that in bad times firms with pre-existing succession plans are less likely to fire their CEOs.

We make several contributions to the literature on CEO succession. To the best of our knowledge, this is the first *direct* study of the role of formal succession planning in determining the nature of turnover decisions. Mostly due to data limitations, previous research has focused on indirect definitions of succession planning. In an important paper, Naveen (2006) studies a firm's propensity for a "relay succession", i.e., grooming an internal candidate, as a function of its operational complexity, firm-specific human capital, and other firm attributes.[8] Naveen (2006) defines a firm that has a president or a chief operating officer as a firm with a succession plan, whereas we focus on the broader process of succession planning that includes both developing internal candidates and searching for external talent. Notably, our definition of a succession plan refers to a set of general procedures and is not specific to a CEO turnover event.

Our main finding that succession planning improves the efficiency of management transitions extends prior work on the nature of learning about CEO ability (Taylor, 2013; Pan, Wang, and Weisbach, 2015) and the efficiency of CEO firing decisions (Jenter and Kanaan, 2015). Relative to the existing literature, we draw a sharp distinction between firms with and without pre-existing succession plans. Our findings indicate that firms with succession plans make more efficient turnover decisions and may experience less costly management transitions, in line with Taylor (2010).[9]

2. Hypothesis development and related literature

In this section, we summarize some of the findings of prior work regarding the causes and consequences of CEO turnover decisions and formulate specific hypotheses that relate these findings to succession planning.

[8] Several studies follow Naveen (2006)'s approach (Kale, Reis, and Venkateswaran, 2009; Kini and Williams, 2012), but their focus is not on succession planning.

[9] Bennedsen, Nielsen, Perez-Gonzalez and Wolfenzon (2007) demonstrate that family successions are costly in terms of family firm operating performance and argue that professional CEOs provide valuable services to family firms.

2.1 Leadership continuity

One of the primary goals of implementing a succession plan is to provide stability in firm management. A succession plan contains a set of policies and procedures that enable boards to actively and continuously monitor CEO performance to reduce the likelihood of an abrupt dismissal. In this way, the succession plan acts as a preventive mechanism that ensures that forced CEO turnovers are less likely to arise. On the other hand, it can also be argued that companies with succession plans in place should be more likely to experience forced CEO turnovers, relative to ones without this formal planning procedure. For example, a company's board may decide to forcibly remove an underperforming CEO, knowing that they already have a succession plan in place to ensure operating and leadership continuity, but they may be reluctant to do so in the absence of such a plan. Therefore, the relationship between the presence of a succession plan and the probability of a forced CEO turnover is ex-ante ambiguous.

Another critical factor in ensuring a smooth management transition is whether to choose a successor from inside or outside the firm. Insiders are typically appointed when the firm is performing well and the board is intent on maintaining strategic continuity; outsider successors are chosen when the firm is performing poorly and suggest a willingness to initiate strategic change (Parrino, 1997).[10] More than two thirds of the succession plans in our sample rely on the participation of the departing CEO, and hence, succession planning is more likely to favor policy continuity over strategic change. This would suggest a board preference to groom the next CEO from within the firm.

On the other hand, the typical succession plan refers to general procedures for ensuring leadership continuity that may or may not include developing internal candidates. As argued in a recent report by the Institute of Executive Development and Stanford University's Rock Center for Corporate Governance, "succession planning and internal talent development are treated as distinct activities

[10] Appointing an outsider is also considered costlier and justified when the expected improvement in firm performance following the turnover is larger (Huson, Malatesta, and Parrino, 2004).

rather than one continuous program to gradually develop leadership skills in the organization".[11] Hence, it is not clear how the presence of a succession plan is related to the likelihood of choosing an insider successor.

Having a well mapped-out process for management succession allows a firm to more accurately determine the essential qualities of a replacement CEO as well as expand the pool of qualified candidates. This helps the board to avoid delays in the appointment of a permanent replacement and minimize any disruption of the management team. Hence, firms with succession plans are more likely to hire a permanent successor.

2.2 Learning about CEO ability

A large literature investigates the market reaction to CEO turnovers. In terms of abnormal announcement returns, the evidence is mixed, but on balance indicative of a positive market reaction (see Weisbach, 1988; Denis and Denis, 1995; Huson, Parrino, and Starks, 2001; and Huson, Malatesta, and Parrino, 2004). A firm's use of a succession planning process is likely to be reflected in its expected returns; thus, we do not expect that firms with formal succession plans would have announcement returns around CEO turnovers that are different from those of other firms without succession plans.

On the other hand, having a succession plan in place should reduce uncertainty about the firm's future prospects, as a clear succession process will provide continuity in leadership and ensure that the incoming CEO's ability is less of an "unknown quantity". Clayton, Hartzell, and Rosenberg (2005) find an increase in stock return volatility surrounding CEO transitions, in particular when they are forced. They argue that the volatility consequences of a CEO turnover can be significant and should be taken into account by the board in planning a management change. Consequently, relative to firms with no succession plans, firms with succession plans are expected to experience

[11] The 2014 Report on Senior Executive Succession Planning and Talent Development is available at https://www.gsb.stanford.edu/sites/gsb/files/publication-pdf/cgri-survey-2014-senior-executive-succession.pdf.

lower short- and long-term volatility around CEO turnovers. It is an empirical question whether this lower volatility would be observed for both voluntary and forced CEO changes. To the extent that forced CEO turnovers are less planned, volatility may remain high even if a succession plan is in place.

Furthermore, we expect that the additional level of disclosure associated with the succession planning process would lead to a faster decline in stock return volatility post-succession, implying a faster resolution of uncertainty about CEO ability. This is consistent with Taylor (2013)'s structural model, which predicts a decline in stock return volatility with CEO tenure, and Pan, Wang, and Weisbach (2015)'s finding of a convex decline in volatility following turnover.

Thus, we expect that firms with succession plans are more likely to experience lower stock return volatility surrounding CEO turnover, and see a faster drop in volatility, associated with faster learning about the incoming CEO's ability.

2.3 Efficiency of CEO dismissals

In contrast to an earlier literature studying the relationship between CEO turnovers and industry performance (Gibbons and Murphy, 1990; Barro and Barro, 1990), recent work by Jenter and Kanaan (2015) shows that boards fail to completely filter out industry shocks in making CEO dismissals. As a result, poorly performing CEOs are more likely to be forced out in recessions than in booms.[12] If a succession plan allows a firm to make more efficient CEO retention decisions, then firms with succession plans are less likely to dismiss their CEOs for industry shocks outside the control of the CEO. Hence, we expect that such firms would rely mostly on firm-specific information in making turnover decisions.

[12] There can be other explanations for why CEOs are fired when peer firms are not performing well. Eisfeldt and Kuhnen (2013), for example, show in a competitive assignment framework that it can be optimal to fire the CEO in bad industry times if industry shocks change the outside options facing firms and CEOs (e.g., if they change required managerial skills).

3. Data and sample construction

3.1 CEO turnover

The starting point of our study is a sample of 3,280 CEO turnovers between 1994 and 2010, generously provided to us by Dirk Jenter and Lucian Taylor. The sample includes firms in Standard & Poor (S&P)'s *ExecuComp* database, which consists of all firms in the S&P 500, MidCap and SmallCap indexes. About 900 of the CEO turnovers (27.6%) are classified as forced and include: (i) CEOs who are reported in the press to be fired, forced out, or retiring/resigning due to policy differences or pressure, (ii) CEOs below the age of 60 for whose departures the press does not report the reason as death, poor health, or the acceptance of another position, and (iii) CEOs whose retirement is not announced in the press at least six months before the succession. As is common in the literature, we also exclude from the analysis CEO turnovers due to mergers or spin-offs.

As described in Table 1, the frequency of CEO turnovers at public firms increases from 2.7% of Compustat firms in 1994-2003 (pre-SOX) to 3.4% in 2004-2010 (post-SOX). The highest rate of CEO turnovers is in 2001 (Internet bubble) and 2008-2009 (Great recession). The frequency of forced CEO turnovers is also increasing, from 25.7% of all CEO successions in 1994-2003 to 30.5% in 2004-2010.

[Insert Table 1]

3.2 CEO succession

For each of the firms in the CEO turnover sample, we manually examine regulatory filings throughout our sample period to identify whether a firm has publicly disclosed a CEO succession planning process. Specifically, we look at 8-K filings, item 5.02 related to the departure of an outgoing CEO and the naming of an incoming CEO, and any press releases filed with the form. We also review the disclosures provided in the firm's proxy statements (DEF-14A) to ascertain whether the board provides additional information regarding succession planning practices.

Companies tend to disclose information about their succession plans in a variety of ways, as seen in Appendix B, which presents a few examples. It is important to note that for the purposes of our analysis, a succession plan refers to the disclosure of *a pre-defined set of general procedures, guidelines and steps rather than a description of a specific CEO turnover*. Companies may revise and improve their succession plans given their history of CEO transitions, but they rarely adopt such plans to replace a particular CEO. For example, Verizon's succession plan states:

> "*Verizon's Board of Directors recognizes that one of its most important duties is to ensure continuity in the Company's senior leadership by overseeing the development of executive talent and planning for the effective succession of the Company's chief executive officer. In accordance with Verizon's Corporate Governance Guidelines, the Board addresses CEO succession and management development on an ongoing basis throughout the year. […] The Board usually conducts its annual in-depth review of management development and succession planning for senior leader positions in conjunction with its annual strategic planning session with management. Led by the CEO and Executive Vice President of Human Resources, this review addresses the Company's management development initiatives, assesses senior management resources and identifies individuals who are considered potential future senior executives of the Company."*[13]

To sum up, we make sure that a firm follows a pre-disclosed succession plan rather than an ad-hoc procedure to replace a particular CEO. We collect both (i) general descriptions of the CEO succession process at the firm, and (ii) information about how the succession plan applies to a specific departing CEO. We code succession planning (SP) as one if the firm discloses (i), regardless of whether (ii) is also reported. If the firm discloses information pertaining to a departing CEO, we code an additional variable – *SP discusses current CEO transition* – as one. In addition, we code a third indicator variable – *CEO remains during transition*, when the succession plan

[13] See Verizon's proxy at https://www.sec.gov/Archives/edgar/data/732712/000119312511072480/ddef14a.htm

mentions that a departing CEO will remain at the firm in a different function (e.g., chairman, director, etc.) to aid with the executive transition.

As seen in columns (5) and (6) of Table 1, 12.4% of the firms with CEO turnovers follow previously disclosed succession planning procedures (planned CEO successions). The tendency to disclose such information has tripled over our sample period, from 6.3% in 1994-2003 (pre-SOX) to 21.3% in 2004-2010 (post-SOX). Succession plan disclosures almost double between 2002 and 2004 (from 10.6% to 20.3%), coinciding roughly with the adoption of the SOX act.

Panel A of Table 2 presents firm, board, and CEO characteristics of the firms in our turnover sample and the broader CRSP-Compustat sample. Panel B compares firms in the CEO turnover sample based on whether they have a succession plan in place (*SP firms* versus *Non-SP firms*). All variables are defined in Appendix A. A few differences between firms with and without succession plans are notable in Panel B. First, firms with succession plans are less likely to experience a forced CEO turnover, less likely to appoint an interim CEO, and more likely to retain their outgoing CEOs during the transition process. These statistics provide some preliminary evidence that the presence of a succession plan may have important consequences for the nature of management transitions.

[Insert Table 2]

We also see that firms with succession plans differ from their counterparts along several dimensions. Firms with succession plans are larger, older, and better-performing (as measured by *ROA*). Their CEOs tend to be older (*CEO of retirement age*) and have longer tenure. In terms of governance characteristics, these firms have a slightly higher institutional ownership and number of block owners (not statistically significant).

Before we proceed with a general description of the effects of succession planning on CEO turnover, we note that our study relies on voluntary disclosure of succession planning practices. Thus, we implicitly assume that the benefits of disclosure – lower costs of information acquisition by shareholders (Diamond, 1985), lower information asymmetry and cost of capital (Diamond and Verrecchia, 1991), high price efficiency and managerial incentives (Kanodia, 1980; Fishman and

Hagerty, 1989)) – outweigh its costs, such as potential competitive harm or reduced board flexibility, as discussed in the Whole Foods case above.

In order to provide further evidence on the *net benefits* of disclosing a succession plan, we estimate the market's reaction to the release of the revised SEC guidance on October 27, 2009. The SEC bulletin highlights that CEO succession planning is "a significant policy issue regarding the governance of the corporation". The updated guidance emphasizes that poor succession planning is "a significant business risk" and focuses investor attention on the lack of proper processes to manage leadership transitions at many companies. As a result of the SEC guidance, both Institutional Shareholder Services (ISS) and the Council of Institutional Investors increased scrutiny of succession planning practices and adopted revised policies regarding succession planning.

We conjecture that firms with disclosed succession plans prior to the release of the SEC rule in October 2009 would experience positive short-term market reaction, relative to their counterparts with no succession plans. Such a positive reaction would suggest that the average firm would benefit from publicly discussing its succession process. In Figure 1, we compare daily cumulative abnormal returns (CARs) between firms with and without succession plans (*SP firms and Non-SP firms*) in the days around the release of the revised SEC guidance. With respect to both the Fama-French 3-factor and 5-factor models, we find that SP firms experience positive short-term market reaction whereas non-SP firms see negative returns.

[Insert Figure 1]

In Table 3, we confirm the findings of positive market reaction at SP firms in a multivariate setting. We report estimates of ordinary least squares (OLS) regressions of daily CARs on an indicator – *SP* – for whether a firm has disclosed a formal succession plan before the release of the revised SEC guidance. We estimate CARs over two event windows – the three days [-1, +1] and the eleven days [-5, +5] around the SEC announcement. The coefficient on *SP* is positive and statistically significant with respect to both the Fama-French 3-factor and 5-factor models. We interpret these

results as evidence that the benefits of disclosing a succession plan exceed its costs at the average firm, indicating that the market considers succession planning (disclosures) as value enhancing.

[Insert Table 3]

4. Leadership continuity

Given the limited prior work on succession planning, we start by providing some general evidence on the role of succession planning in management transitions. Table 4 presents the results. The observations are CEO turnover events over 1994-2010. The main explanatory variable is an indicator – *SP* – for the presence of a succession plan. We also add an indicator for whether the succession plan includes a discussion pertaining to the current CEO turnover and an indicator for whether the departing CEO remains at the firm during the transition process. As firm controls, we include lagged values of firm size (measured by total assets), ROA, market-to-book ratio (MTB) as well as institutional ownership and number of block owners. Odd-numbered columns include year fixed effects whereas even-numbered columns include industry and year fixed effects.

[Insert Table 4]

Columns (1) and (2) in Panel A report OLS models of the probability of a forced CEO turnover. Consistent with the univariate evidence in Table 2, firms with succession plans have 8-9% lower probability of experiencing a forced CEO turnover in comparison to firms without succession plans. In terms of economic magnitude, this represents about one-third of the probability of a forced turnover in the turnover sample. The likelihood of a forced turnover is also significantly lower if the succession plan refers specifically to the departing CEO and if the CEO remains with the company during the transition. The coefficient on ROA is negative and highly statistically significant, confirming prior findings of a strong negative relationship between pre-turnover performance and forced turnover (i.e., high turnover-performance sensitivity). Note also that neither institutional ownership nor the number of institutional block owners has a statistically

significant association with forced CEO turnover after controlling for the presence of a succession plan.

As seen in columns (3) and (4), firms with succession plans are not more likely to hire a successor from within the firm. This may not be surprising as having a succession plan typically involves both grooming internal candidates and searching through the external CEO talent pool. In addition, we confirm that none of the results in this paper are affected by including a control for an insider successor.

The coefficient estimates in columns (5) and (6) suggest that firms with succession plans are 9-10% less likely to choose an interim CEO, presumably because a succession plan raises the preparedness of the firm for a management transition. This effect is economically significant, representing about one-third of the probability of an interim succession in the turnover sample.

Overall, the results in Panel A of Table 4 provide suggestive evidence that succession planning could be important in choosing a replacement CEO and ensuring a smooth management transition. However, our tests do not establish causality. We recognize that identification is a serious challenge in studying the effects of succession planning on CEO turnover as succession planning is likely endogenous to firm characteristics, and hence, our results potentially suffer from a selection bias. It is difficult to address such concerns in a satisfactory way in the context of CEO succession. Recognizing that we cannot expect to construct an identification test that creates the perfect counterfactual, we develop an instrumental variables (IV) framework that we hope at least partially mitigates the selection concerns in our study.

In constructing an instrument for a firm's use of a succession plan, we rely on recent work in the industrial organization literature (Hoberg and Phillips, 2010; Hoberg and Phillips, 2016). We use the similarity between a firm's products and those of its rivals to infer similarity in the human capital of the two firms' CEOs. Put differently, the closer the competition between two firms in the product space, the more similar the skills required of their CEOs. Hoberg and Phillips (2010, 2016) develop new time-varying industry classifications using text-based analysis of firm product

descriptions filed with the SEC. Specifically, they crawl and parse the text in the business descriptions of 10-K annual filings on the SEC Edgar website from 1996 to 2011, where firms describe in detail their product offerings. Since 10-K reports are updated on an annual basis, the network of similarity scores is time-varying.[14]

Using the Hoberg and Phillips (2010, 2016) data, we identify (closely) related firms based on a version of the text-based network industry classifications (TNIC), calibrated as granular to the more commonly used three-digit SIC codes. The TNIC classifications are based on firm pairwise similarity scores from text analysis of product descriptions. To predict whether a firm has adopted a succession plan, we use the fraction of the twenty closest rivals that have implemented a succession plan.[15]

The TNIC-level SP measure has two important advantages as an instrument for succession planning. First, it is time-varying, which alleviates the concern of an invariant (or slow moving) firm-specific variable (e.g., governance or management entrenchment) driving our results. Second, the TNIC industry definitions are intransitive, i.e., each firm has its own distinct competitors. This is in contrast to more common industry definitions (e.g., SIC) and alleviates the concern that firms in the same (transitive) industry may follow similar turnover practices in response to common industry shocks.

Is our TNIC-level SP measure a relevant proxy for whether a firm has a succession plan? We confirm that firms that belong to clusters of rivals with higher average probability of having a succession plan are indeed more likely to have a succession plan. We attribute this result to the common CEO labor market that these rival firms likely share as a result of competing in a tight product market space. We also verify that our instrument does not impact CEO turnover directly, suggesting that the exclusion restriction is likely to be satisfied. In addition, the first-stage *F*-

[14] One can think of this network as similar to Facebook's circle of friends, where each firm has its own distinct set of competitors.

[15] Specifically, our IV is the tercile value of the percentage of the twenty closest rivals with succession plans. Our results remain qualitatively similar when we use the continuous variable of the average SP.

statistic (23.61) – reported in column (1) in Panel B – indicates that our instrument is not weak, i.e., it sufficiently explains the variation in the endogenous regressor and is relevant (see Campello et al., 2011).

Columns (2)-(5) present the IV estimates, where we use *SP-I* to denote the instrumented version of the indicator *SP*. Our earlier findings remain unchanged; succession planning leads to a lower incidence of forced turnover and lower probability of interim succession. Even though our identification test is far from perfect, we interpret these results as supportive of a causal relationship between succession planning and CEO turnover.

In the remainder of the paper, we present three tests that highlight how formal succession planning affects management transitions. To aid the interpretation of these results, we report them in the IV framework developed above.[16]

5. Succession planning and efficiency of CEO turnovers

In this section, we turn our attention to evaluating the effects of formal succession planning on the efficiency of CEO turnover decisions. First, we study how a 2006 SEC change in performance evaluation disclosures impacts a firm's turnover-performance sensitivity. The rule change is aimed at enhancing disclosure quality; hence, comparing how its effects vary with succession planning will provide insights into the relationship between succession planning and CEO performance evaluation. Then, we study learning about CEO ability by examining uncertainty around CEO turnovers and the resolution of this uncertainty over the incoming CEO's tenure. Finally, we investigate the relative importance of firm-specific versus industry-wide factors in CEO dismissal decisions. These complementary tests draw attention to three dimensions in which succession planning affects management transitions.

[16] OLS regressions of all remaining tests produce quantitatively similar results but are not reported for brevity.

5.1. Turnover-performance sensitivity around mandated disclosure changes

One of the strongest relationships documented in the CEO literature is that of a negative turnover-performance sensitivity (see Warner et al., 1988; Weisbach, 1988; Huson et al., 2001; Fee and Hadlock, 2004). To measure performance, prior work relies on both return and earnings measures, such as abnormal stock returns (e.g., Weisbach, 1988; Fee and Hadlock, 2004) and return on assets (e.g., Denis and Denis, 1995; Goyal and Park, 2002).

In 2006, the SEC determined that companies need to expand their disclosures about how they evaluate executive performance and how they use performance evaluation in setting compensation. As of December 2006, the SEC mandates expanded Compensation Discussion and Analysis (CD&A) disclosures, including more detailed information about specific performance metrics and targets, both for cash and equity incentive plans. As argued by Ferri, Zheng, and Zou (2017), the 2006 CD&A disclosures "caused a substantial increase in the *quality and precision* of information relevant to investors' assessment of managers' compensation incentives [emphasis added]." In addition, Ertimur, Ferri, and Muslu (2011) and Ertimur, Ferri, and Oesch (2013) find a higher incidence of "compensation-related activism" after 2006, suggesting increased institutional investor scrutiny of compensation disclosures.[17]

The disclosure of succession planning procedures is aimed at alleviating investor apprehension about management transitions and at setting clear expectations about the circumstances under which a CEO turnover event would occur. Consequently, we expect that firms with established succession plans would have more sophisticated performance evaluation procedures *prior to* the SEC's 2006 mandated expansion in CD&A disclosures. Thus, the new disclosures should have a stronger impact in terms of turnover-performance sensitivity among firms that have not disclosed succession plans as of the end of 2006.

[17] Prior work establishes a strong relationship between the firm's decision to replace its CEO in response to poor performance and other governance mechanisms, such as the fraction of independent outside directors and the level of institutional holdings (Weisbach, 1988; Goyal and Park, 2002; Huson et al., 2004; Hillier et al., 2005).

To evaluate the effects of the disclosure rule change, in Table 5 we compare turnover-performance sensitivity around 2006 between firms with and without succession plans. The dependent variable in all columns is an indicator for a forced CEO turnover. The indicator *Post* is set to one for years after 2006, and set to zero before 2006. We classify firms into two groups – *SP-I and Non-SP-I firms* – based on whether their predicted probability of having a succession plan is above or below the mean fraction of their twenty closest rivals with succession plans. As described in Section 4, we identify rivals based on text-based network industry classifications (TNIC) as in Hoberg and Phillips (2010, 2016). The use of each firm's *predicted* likelihood of having a succession plan alleviates concerns that (unobserved) firm attributes may drive both the adoption of a succession plan and turnover-performance sensitivity. All regressions also include firm fixed effects (to control for time-invariant firm characteristics) and year fixed effects. As in prior literature, we use both return and earnings measures to estimate performance – stock returns (in columns (1)-(4)) and change in ROA (in columns (5)-(8)). Both stock returns and ROA are calculated over the prior two fiscal years and adjusted by the respective (Fama French 10) industry-year means.

[Insert Table 5]

As we see from the coefficients on the interaction between *Post* and *Performance* in even numbered columns, *Non-SP-I firms* experience a statistically significant negative turnover-performance sensitivity after the 2006 disclosure rule change, in terms of both abnormal stock return (columns (2) and (4)) and change in ROA (columns (6) and (8)). However, these firms generally do not appear to exhibit a statistically significant negative relationship between performance and forced CEO turnover before 2006, as seen by the coefficients on *Performance*. Thus, the 2006 disclosure change has a strong impact on turnover-performance sensitivity among firms with no succession plans as of 2006, presumably due to the improved precision of performance evaluation metrics as a result of the new rule.

In contrast, *SP-I firms* have a statistically significant negative relationship between performance and forced CEO turnover before 2006 (negative coefficient on *Performance* in odd numbered

columns) but do not experience a statistically significant change in their turnover-performance sensitivity as a result of the rule change, as seen by the coefficients on the interaction terms. We interpret this result as evidence that firms with succession plans have more sophisticated performance evaluation procedures prior to the 2006 rule change as a result of their *pre-existing* succession plans. Thus, succession planning appears to (partially) implement the performance metrics envisioned as part of the 2006 SEC rule.

5.2. Abnormal stock return volatility and learning about CEO ability

Prior work has shown an increase in stock return volatility surrounding CEO turnovers, especially when they are forced (see Clayton, Hartzell, and Rosenberg, 2005). In addition, Taylor (2013) presents a structural model and Pan, Wang, and Weisbach (2015) find empirical evidence of a decline in stock return volatility with CEO tenure, consistent with a decrease in uncertainty about CEO ability. In this subsection, we compare firms with and without succession plans in terms of their abnormal return volatility around CEO turnovers and the pattern of change in this volatility after the turnover.

We start with Table 6, in which we compare abnormal returns and volatility around CEO successions in firms with and without succession planning. Since prior literature has shown more positive returns and higher return volatility in forced CEO successions, we present results separately for all, voluntary, and forced turnover events.[18] Our tests compare firms with and without succession plans with the inclusion of an indicator for the presence of a formal succession plan. To mitigate the potential confounding effects of firm characteristics, we use the instrumented version *SP-I*, estimated as a firm's predicted likelihood of having a succession plan based on the fraction of firms with a succession plan within the firm's twenty closest rivals based on the TNIC classification of Hoberg and Phillips (2010, 2016).

[18] Prior work has documented a generally positive market reaction to CEO turnovers (see Weisbach, 1988; Denis and Denis, 1995; Huson, Parrino, and Starks, 2001).

[Insert Table 6]

In columns (1)-(3) of Panel A, we present OLS regression estimates of three-day CARs around the announcement of the CEO turnover event. Abnormal returns are calculated with respect to the Fama-French 3-factor model with the market, SMB and HML factors estimated from day -244 to day -6 before the turnover announcement, following Brown and Warner (1985). Our results indicate that firms with formal succession plans do not experience different announcement CARs in comparison to firms without succession plans.

In columns (4)-(6) of Panel A, we report short-term stock return volatility (measured by *Log of CAR squared*) in the three days around the CEO turnover event. Starting with all CEO successions in column (4), we find that firms with succession plans experience lower short-term volatility relative to firms with no succession plans. Comparing columns (5) and (6) suggests that these results are driven by voluntary successions; the coefficient in column (5) has a similar economic magnitude and statistical significance as the coefficient in the full sample. Short-term volatility is strongly negatively associated with lagged operating performance in the full sample (column (4)) but the coefficient on *ROA* loses statistical significance in the split samples (columns (5) and (6)).

In Panel B, we study realized stock return volatility (columns (1)-(3)) and idiosyncratic volatility (columns (4)-(6)). As additional controls, we include the Fama-French market, SMB and HML factors. Both volatility measures and the Fama-French factors are estimated using daily stock returns over the year of CEO succession. Our results show lower long-term return volatility for all and voluntary successions at firms with succession plans, relative to firms with no succession plans. The coefficients in columns (3) and (6) are not statistically significant, suggesting that volatility around forced CEO turnovers does not vary with succession planning. Overall, the evidence in Table 6 indicates that firms with succession plans tend to experience lower short- and long-term volatility surrounding CEO turnovers, relative to firms without succession plans.

The lower volatility of a firm with a succession plan around a CEO turnover is indicative of lower uncertainty about the future prospects of the firm and/or the ability of the incoming CEO. We

examine this conjecture further by studying whether the nature of learning about CEO ability, as captured by the decline in stock return volatility following the CEO transition varies with succession planning. This analysis follows recent work by Pan, Wang, and Weisbach (2015) who investigate empirically Taylor (2013)'s prediction of a decline in stock return volatility with CEO tenure. Pan et al. (2015) show a convex decline in volatility, consistent with a Bayesian learning model where uncertainty about CEO ability is highest when the CEO steps into office.

In Table 7, we study the nonlinear trend in stock return volatility during the successor CEO's tenure. Panel A presents piecewise linear spline regressions, where tenure in year *i* is the spline for the twelve months in the *i*-th year following the turnover; Panel B presents polynomial model specifications. Each panel reports both realized (columns (1)-(3)) and idiosyncratic (columns (4)-(6)) monthly volatilities. Columns (1) and (4) present results for all firms in our turnover sample whereas columns (2) and (5) focus on firms without succession plans and columns (3) and (6) study firms with succession plans. We follow the estimation approach in Pan et al. (2015) and include the same control variables. To mitigate endogeneity concerns, as in Table 5, we split firms into *SP firms* and *Non-SP firms* based on whether their predicted probability of having a succession plan is above or below the mean fraction of their twenty closest rivals with succession plans.

[Insert Table 7]

The results in columns (1) and (4) of Panel A closely mirror the findings of Pan et al. (2015). Stock return volatility declines faster in the first year of CEO tenure than in the second or third year. Columns (2) and (5) confirm these findings in the sample of firms without succession plans. However, the results for *SP-I firms* (reported in columns (3) and (6)) point to a different learning pattern. First, the coefficients are generally smaller in magnitude, implying less learning about CEO ability. This is consistent with our earlier finding of lower return volatility around CEO transitions at these firms. Second, the coefficient on year one of CEO tenure is the only statistically significant one, indicating that most learning about CEO ability occurs during the first year in

which the CEO is in office. These results could be interpreted as evidence that succession planning disclosures assure investors that the incoming CEO's ability is less of an "unknown quantity".

In Panel B, we estimate a firm's realized and idiosyncratic volatilities as a function of CEO tenure and CEO tenure squared. We find the expected convex relationship (i.e., negative linear term and positive quadratic term) in the sample of all turnovers and turnovers at firms without succession plans, similar to the findings of Pan et al. (2015). However, the results for firms with succession plans (columns (3) and (6)) suggest a different learning pattern; the quadratic term is statistically insignificant for both measures of volatility. Thus, learning about CEO ability at *SP firms* does not appear to have the usual convex relationship observed at the average firm. This is consistent with our finding that most learning about CEO ability occurs in the first year of CEO tenure.

These results are also clearly observable in Figure 2, which plots differences in the means of realized and idiosyncratic volatilities between firms with and without succession plans over the 96 months around CEO turnover. Although these firms experience similar pre-turnover trends in volatility, the decline in both measures of volatility is faster for firms with succession plans.

[Insert Figure 2]

Overall, the results in Table 7 and Figure 2 suggest that the presence of a formal succession plan appears to change the nature of learning about CEO ability.

5.3. Efficiency of CEO dismissal decisions

To provide further evidence regarding the impact of succession planning practices on the efficiency of turnover decisions, we investigate whether firms with succession plans are more likely to base CEO dismissals on firm-specific factors or industry-wide information. Jenter and Kanaan (2015) show that boards fail to completely filter out industry shocks in firing their CEOs. As a consequence, they document a higher likelihood of forced CEO turnover in bad times than in good times. We conjecture that a succession plan will make it less likely for firms to dismiss their CEOs for reasons unrelated to firm-specific performance.

In Table 8, we follow the two-stage regression approach in Jenter and Kanaan (2015) and study whether succession planning improves the efficiency of turnover decisions by reducing the frequency of forced CEO turnovers following bad industry performance. We start with Panel B, in which we report the first-stage regressions where we predict a firm's stock returns using contemporaneous equally-weighted (columns (1)-(2)) and value-weighted (columns (3)-(4)) industry stock returns. Then, in Panel A, we regress forced CEO turnover on two components – the predicted value based on industry performance and the residual capturing idiosyncratic firm performance. Columns (1) and (4) present results for all firms in our turnover sample whereas columns (2) and (5) focus on firms without succession plans (*Non-SP-I firms*) and columns (3) and (6) study firms with succession plans (*SP-I firms*). As in previous tables, we split firms into *SP-I firms* and *Non-SP-I firms* based on whether their predicted probability of having a succession plan is above or below the mean fraction of their twenty closest rivals with succession plans. As in Jenter and Kanaan (2015), all models include industry and year fixed effects and robust standard errors.

[Insert Table 8]

The results for all firms and firms without succession plans (reported in columns (1) and (4), and (2) and (5), respectively) confirm that forced CEO turnovers are determined not only by idiosyncratic firm performance but also by predicted (industry) performance. That is, poor industry performance increases the likelihood of forced CEO turnover, suggesting that firms do not fully filter out industry performance in their firing decisions. In contrast, we find that firms with succession plans do a good job in using mostly firm-specific information when making CEO dismissal decisions. The coefficients on lagged industry-induced returns are not significant in either specification, as seen in columns (3) and (6).

There is a large body of existing literature that supports the hypothesis that boards filter industry and market shocks from firm performance before deciding whether to fire their CEOs (Warner, Watts, and Wruck, 1988; Morck, Shleifer, and Vishny, 1989; Barro and Barro, 1990; Gibbons and

Murphy, 1990; Kaplan and Minton, 2012). Our results for firms with succession plans broadly support this view. They are consistent with the notion that firms with succession plans base CEO-related decisions on the goodness of fit between the CEO and the firm.

Overall, the evidence presented in this section supports the view that succession planning improves the efficiency of management transitions by reducing investor uncertainty about CEO ability and allowing for proper filtering of industry factors in CEO dismissals.

8. Conclusion

Using hand-collected data on succession planning disclosures in a comprehensive sample of over 3,000 public firms undergoing management transitions over 1994-2010, we provide novel evidence on the role of formal succession planning in CEO turnover decisions. First, we show that succession planning ensures leadership stability by reducing the likelihood of forced CEO turnover and the incidence of interim CEO successions. Second, we provide evidence of more sophisticated performance evaluation methods at firms with succession plans. Finally, we show that firms with succession plans tend to have lower uncertainty and faster learning about the incoming CEO's ability, and that they allow for proper filtering of industry factors in making CEO dismissals.

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Appendix A. Variable definitions

Variable	Definition	Data source
Turnover and succession variables		
SP	Indicator equal to one if a firm has a formal succession plan prior to the CEO turnover event, and zero otherwise.	8-K and DEF-14A
Forced CEO succession	Indicator equal to one if a CEO succession is involuntary, and zero otherwise.	See section 3
Insider successor	Indicator equal to one if an executive has been with the firm for at least one year prior to becoming the CEO, and zero otherwise.	ExecuComp
Interim successor	Indicator equal to one if the CEO is replaced within two years, and zero otherwise.	ExecuComp
CEO remains during transition	Indicator equal to one if the departing CEO remains with the firm in another position after stepping down, and zero otherwise.	8-K and DEF-14A
SP discusses current CEO transition	Indicator equal to one if a succession plan provides specific details about the departure of the incumbent CEO, and zero otherwise.	8-K and DEF-14A

Other variables

Variable	Definition	Data source
CAR	Cumulative abnormal return calculated from day -1 to day +1 around the announcement of the CEO succession. Abnormal returns are calculated with respect to the Fama-French three-factor model where the factors are estimated from day -244 to day -6 before the announcement.	CRSP / Ken French's website
Realized return volatility	Standard deviation of stock returns, calculated over the fiscal year using daily returns (ret), for firm-years with more than 200 non-missing return days; annualized based on 250 trading days.	CRSP
Idiosyncratic return volatility	Standard deviation of residual returns from the Fama-French three-factor model, calculated over the fiscal year using daily returns (ret), for firm-years with more than 200 non-missing return days; annualized based on 250 trading days.	CRSP / Ken French's website
Market beta / SMB beta / HML beta	Coefficient estimate on the excess market return, the SMB factor, and the HML factor in the Fama-French three-factor model, estimated over the fiscal year using daily returns (ret), for firm-years with more than 200 trading days.	CRSP / Ken French's website
Stock returns	Stock returns, calculated over the current and prior fiscal years using monthly returns (ret), for firm-years with more than 10 non-missing return months, and adjusted by (Fama-French 10) industry-year means.	CRSP
ROA	Net income (ni) / total assets (at) in the previous fiscal year, winsorized at 1%.	Compustat
MTB	(Book value of assets (at) + market value of equity (csho×prcc_f) – book value of equity (ceq)) / book value of assets (at) in the previous fiscal year), winsorized at 1%.	Compustat
Log(total assets)	*ln* (total assets (at) + 1)	Compustat
Firm age	Number of years since the firm first appeared in CRSP.	CRSP
Leverage	(Total liabilities (lt) + total debt in current liabilities (dlc)) / total assets (at) in the previous fiscal year, winsorized at 1%.	Compustat
Dividend payer	Indicator equal to one if the firm pays dividends (dvt), and zero otherwise.	Compustat
Volatility of profitability (ROE)	Standard deviation of the residuals from an AR(1) process of ROE, as in Pastor and Veronesi (2003).	Compustat
ROE	Operating income before depreciation (oibdp) / book value of equity (seq) in the previous fiscal year, winsorized at 1%.	Compustat

% Institutional ownership	Total institutional ownership as a percentage of shares outstanding.	Thomson Reuters
# block owners	Number of institutional block owners holding more than 5% of shares outstanding.	Thomson Reuters
CEO of retirement age	Indicator equal to one if the CEO is between 63 and 66 years of age, and zero otherwise, as in Jenter and Kanaan (2015).	ExecuComp
Log(CEO tenure)	*ln* (number of years the current CEO has served as CEO)	ExecuComp

Appendix B. Examples of succession planning disclosures

Company	Description of succession plan	Document type / filing date	SP	SP discusses current CEO transition
Sysco Corp	On an ongoing basis, the board plans for succession to the position of CEO and other key management positions, and the corporate governance and nominating committee oversees this management development and succession planning process. To assist the board, the CEO periodically provides the board with an assessment of senior executives and their potential to succeed to the position of CEO, as well as perspective on potential candidates from outside the company. In addition, the CEO periodically provides the board with an assessment of potential successors to other key positions.	DEF-14A / Oct. 8, 2009	Yes	No
Citigroup Inc.	The nomination and governance committee, or a subcommittee thereof, shall make an annual report to the board on succession planning. The entire board shall work with the nomination and governance committee, or a subcommittee thereof, to nominate and evaluate potential successors to the CEO. The CEO shall meet periodically with the nomination and governance committee in order to make available his or her recommendations and evaluations of potential successors, along with a review of any development plans recommended for such individuals.	DEF-14A / Mar. 13, 2008	Yes	No
Hershey Co.	The board shall review management succession plans annually. This shall include review by the board of organization strength and management development and succession plans for each member of the company's executive team. The board shall also maintain and review annually, or more often if appropriate, a succession plan for the CEO. If the president, CEO, and/or chairman of the board is unable to perform for any reason, including death, incapacity, termination, or resignation before a replacement is elected, then: (1) if the company is without a chairman of the board, the vice chairman of the board, if any, shall serve as chairman until a replacement is elected or, in the case of temporary incapacity, until the board determines that the incapacity has ended, and in the absence of a vice chairman of the board, the chair of the governance committee or, in his or her absence, the chair of the compensation and executive organization committee, shall serve in such capacity; (2) if the company is without a president and CEO, the interim president and CEO shall be the officer of the company approved by the board, taking into consideration the annual recommendation of the CEO; (3) in the case of incapacity of the president, CEO and/or chairman, the board shall determine whether to search for a replacement; and (4) the chair of the compensation and executive organization committee shall lead any search for a replacement.	DEF-14A / Mar. 10, 2008	Yes	No
Brinker International Inc.	The board of directors of Brinker International, Inc. (NYSE: EAT) announced today that Ron McDougall advised the board that he has decided to relinquish his responsibilities as chief executive officer effective January 1, 2004. In accordance with the company's established succession plan, Ron will continue to serve as chairman of the board and Doug Brooks, currently president and chief operating officer, will become CEO on that date and will also continue as president.	8-K / June 6, 2003	Yes	Yes

Figure 1. Abnormal returns around revised SEC guidance on succession planning

This figure compares daily cumulative abnormal returns (CARs) between firms with and without succession plans (*SP* and *non-SP firms*), around the release of a revised SEC guidance regarding succession planning on October 27, 2009. *SP firms* (*non-SP firms*) are firms that have (have not) disclosed a formal succession plan as of the announcement. Abnormal returns are calculated with respect to the Fama-French 3-factor (5-factor) model in the above (below) panel.

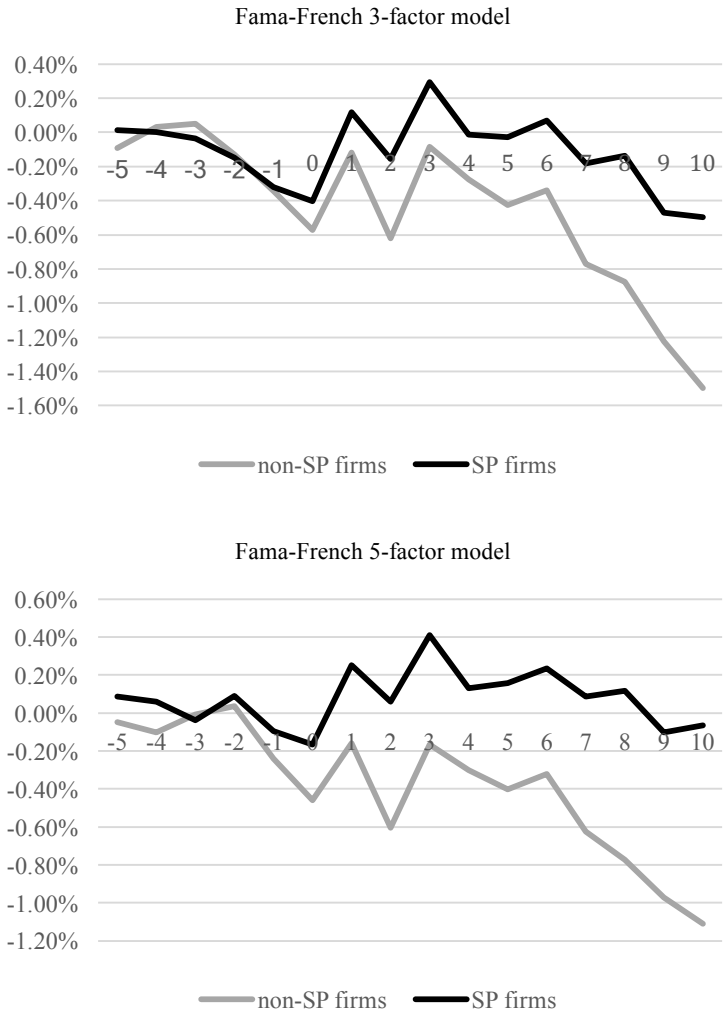
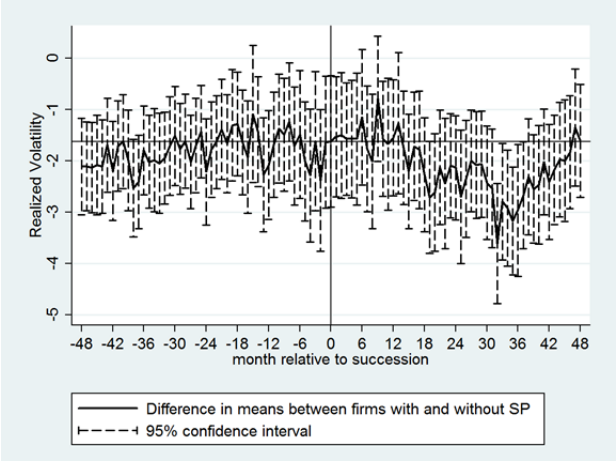


Figure 2. Changes in volatility around CEO turnover

This figure compares changes in stock return volatility between firms with and without succession plans in the 48 months before and after CEO turnover. The sample includes 3,280 CEO succession events over 1994-2010. The above (below) panel plots differences in the means of realized (idiosyncratic) return volatility between firms with and without succession planning. Volatility measures are calculated over each calendar month using daily CRSP stock returns.

Realized return volatility



Idiosyncratic return volatility

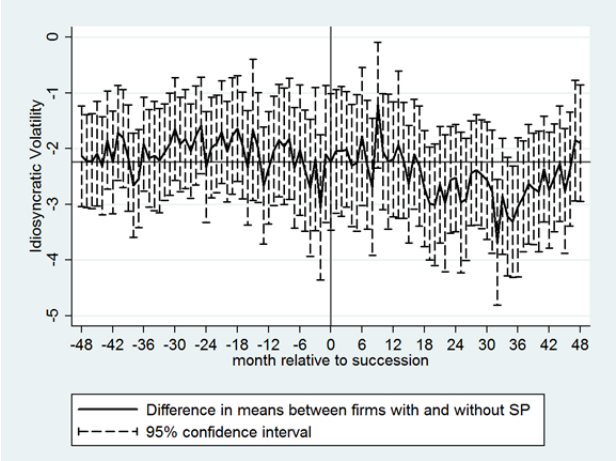


Table 1. Summary statistics of CEO turnover and succession planning

This table reports the number of CEO successions in column (1), the percentage of Compustat firms with CEO successions in column (2), the number and percentage of forced CEO successions in columns (3)-(4), and the number and percentage of planned CEO successions in columns (5)-(6) during 1994-2010. The last two rows report aggregates over 1994-2003 (pre-Sarbanes-Oxley (SOX) period) and 2004-2010 (post-SOX period).

Year	(1) # CEO successions	(2) % Compustat firms with CEO successions	(3) # Forced CEO successions	(4) % Forced CEO successions ((3)/(1))	(5) # Planned CEO successions	(6) % Planned CEO successions ((5)/(1))
1994	118	1.6%	19	16.1%	3	2.5%
1995	183	2.4%	42	23.0%	4	2.2%
1996	168	2.0%	30	17.9%	5	3.0%
1997	187	2.3%	49	26.2%	11	5.9%
1998	222	2.8%	51	23.0%	11	5.0%
1999	217	2.8%	51	23.5%	11	5.1%
2000	253	3.4%	75	29.6%	17	6.7%
2001	263	3.9%	59	22.4%	16	6.1%
2002	179	2.8%	64	35.8%	19	10.6%
2003	166	2.8%	62	37.3%	27	16.3%
2004	172	2.9%	57	33.1%	35	20.3%
2005	200	3.4%	73	36.5%	38	19.0%
2006	189	3.3%	70	37.0%	27	14.3%
2007	190	3.4%	77	40.5%	39	20.5%
2008	245	4.6%	60	24.5%	57	23.3%
2009	191	3.8%	41	21.5%	35	18.3%
2010	137	2.8%	26	19.0%	51	37.2%
Total	3280	2.9%	906	27.6%	406	12.4%
1994-2003 (pre-SOX)	1956	2.7%	502	25.7%	124	6.3%
2004-2010 (post-SOX)	1324	3.4%	404	30.5%	282	21.3%

Table 2. Summary statistics

Panel A reports summary statistics of firm, CEO, and board characteristics in the CEO turnover sample and CRSP-Compustat sample of public firms. Panel B compares average values of these characteristics between firms with and without succession planning. The sample period is 1994-2010. All variables are defined in Appendix A.

Panel A.

Variables	N	Mean	25th	50th	75th	S.D.	Min	Max
CEO turnover sample								
SP	2839	0.13	0.00	0.00	0.00	0.34	0.00	1.00
Forced CEO succession	2834	0.27	0.00	0.00	1.00	0.44	0.00	1.00
Insider successor	2839	0.79	1.00	1.00	1.00	0.41	0.00	1.00
Interim successor	2839	0.28	0.00	0.00	1.00	0.45	0.00	1.00
CEO remains during transition	2838	0.59	0.00	1.00	1.00	0.49	0.00	1.00
SP discusses current CEO transition	2838	0.93	1.00	1.00	1.00	0.25	0.00	1.00
CAR	2784	0.04	0.01	0.05	0.08	0.09	-0.84	0.67
CRSP-Compustat firm sample								
Realized return volatility	28828	0.46	0.29	0.39	0.55	0.27	0.00	2.58
Idiosyncratic return volatility	28629	0.41	0.26	0.35	0.50	0.23	0.10	3.17
Market beta	29933	1.07	0.77	1.03	1.33	0.49	-8.40	13.14
SMB beta	29933	0.60	0.11	0.54	1.02	0.70	-7.12	5.17
HML beta	29933	0.25	-0.21	0.26	0.73	0.95	-8.73	29.74
Stock returns	27453	0.00	-0.35	-0.06	0.26	0.64	-2.72	5.52
ROA	29559	0.04	0.01	0.05	0.09	0.13	-1.20	0.39
MTB	29557	2.29	1.19	1.60	2.49	2.15	0.15	17.04
Log(total assets)	29947	7.48	6.20	7.32	8.60	1.76	1.49	14.63
Firm age	29947	21.70	9.00	17.00	32.00	15.13	0.00	61.00
Leverage	29448	0.26	0.07	0.23	0.37	0.24	0.00	1.43
Dividend payer	29862	0.59	0.00	1.00	1.00	0.49	0.00	1.00
Volatility of profitability (ROE)	29947	0.55	0.53	0.55	0.57	0.03	0.50	0.61
ROE	29559	0.08	0.04	0.12	0.19	0.41	-3.60	2.14
% institutional ownership	22767	0.67	0.52	0.69	0.84	0.22	0.00	1.00
# block owners	22776	2.16	1.00	2.00	3.00	1.59	0.00	20.00
CEO of retirement age	29947	0.09	0.00	0.00	0.00	0.29	0.00	1.00
Log(CEO tenure)	29947	1.51	1.10	1.39	1.95	0.56	0.69	3.00

Panel B.

Variables	SP firms N	SP firms Mean	Non-SP firms N	Non-SP firms Mean	Difference in means	t-stat
CEO turnover sample						
SP	403	0.95	2436	0.00	0.95	
Forced CEO succession	402	0.19	2432	0.28	-0.09***	-4.10
Insider successor	403	0.83	2436	0.79	0.04*	1.94
Interim successor	403	0.19	2436	0.29	-0.10***	-4.66
CEO remains during transition	403	0.67	2435	0.57	0.10***	3.93
SP discusses current CEO transition	403	0.60	2435	0.99	-0.39***	-15.93
CAR	392	0.04	2392	0.05	-0.01**	-2.51
CRSP-Compustat firm sample						
Realized return volatility	392	0.43	2393	0.50	-0.07***	-5.05
Idiosyncratic return volatility	393	0.38	2389	0.46	-0.08***	-6.50
Market beta	403	1.08	2435	1.10	-0.02	-0.86
SMB beta	403	0.42	2435	0.66	-0.24***	-6.51
HML beta	403	0.32	2435	0.28	0.04	0.87
Stock returns	391	-0.09	2308	-0.16	0.07**	2.43
ROA	403	0.04	2413	0.01	0.03***	5.04
MTB	403	2.05	2412	2.17	-0.12	-1.22
Log(total assets)	403	8.21	2436	7.31	0.90***	9.39
Firm age	403	27.61	2436	22.24	5.37***	6.18
Leverage	401	0.28	2402	0.25	0.03**	2.53
Dividend payer	403	0.68	2429	0.57	0.11***	4.31
Volatility of profitability (ROE)	403	0.56	2436	0.55	0.01***	6.20
ROE	403	0.09	2413	0.01	0.08***	3.66
% institutional ownership	311	0.72	1741	0.65	0.07***	6.09
# block owners	312	2.28	1742	2.15	0.13	1.27
CEO of retirement age	403	0.26	2436	0.15	0.11***	4.76
Log(CEO tenure)	403	1.88	2436	1.59	0.29***	10.15

Table 3. Abnormal returns around revised SEC guidance on succession planning

This table reports estimates of ordinary least squares (OLS) regressions of daily cumulative abnormal returns (CARs) on an indicator (*SP*) for whether a firm has a formal succession plan disclosed prior to the revised SEC guidance regarding succession planning on October 27, 2009. Columns (1) and (3) (columns (2) and (4)) present announcement CARs from day -1 to day +1 (day -5 to day +5). Abnormal returns are calculated with respect to the Fama-French 3-factor (5-factor) model in columns (1)-(2) (columns (3)-(4)). Firm controls are as of the latest fiscal year-end prior to the succession. All variables are defined in Appendix A. *t*-statistics, reported in parentheses, are calculated with standard errors clustered at the FF 10 industry level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Risk model	Fama-French 3-factor model		Fama-French 5-factor model	
	CAR[-1,+1]	CAR[-5,+5]	CAR[-1,+1]	CAR[-5,+5]
SP	0.0033**	0.0060***	0.0034**	0.0062***
	(2.34)	(3.61)	(2.29)	(3.39)
Log(total assets)	0.0016	0.0031	0.0017	0.0032
	(0.73)	(0.90)	(0.81)	(1.07)
ROA	0.0295	0.0709*	0.0290	0.0626
	(1.39)	(1.71)	(1.40)	(1.62)
MTB	-0.0054**	-0.0053*	-0.0054**	-0.0055**
	(-2.06)	(-1.87)	(-2.10)	(-2.02)
Stock return	0.0331**	0.0468***	0.0364**	0.0548***
	(1.96)	(2.93)	(2.05)	(3.02)
% institutional ownership	-0.0224	0.0015	-0.0240	-0.0058
	(-1.07)	(0.06)	(-1.13)	(-0.25)
# block owners	0.0029	0.0007	0.0032*	0.0013
	(1.64)	(0.48)	(1.76)	(0.85)
Constant	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	1,467	1,467	1,467	1,467
Adjusted R^2	0.0769	0.0683	0.0845	0.0732

Table 4. Succession planning and leadership stability

This table reports estimates of regressions of succession outcomes on an indicator (*SP*) for whether a firm has disclosed a formal succession plan prior to the CEO turnover. Panel A reports ordinary least squares (OLS) estimates and Panel B reports instrumental variables (IV) estimates over 1994-2010. The IV is the percentage of the twenty closest rivals that have SP, where rivals are identified by the text-based network industry classifications (TNIC) of Hoberg and Phillips (2010, 2016). In Panel B, *SP-I* is the predicted value of SP from the first-stage regression reported in column (1). The succession outcome variables include an indicator for a forced succession in Panel A columns (1)-(2) and Panel B column (2), indicator for an insider successor in Panel A columns (3)-(4) and Panel B column (3), and indicator for an interim successor in Panel A columns (5)-(6) and Panel B column (4). Firm controls are as of the latest fiscal year-end prior to the succession. All variables are defined in Appendix A. *t*-statistics, reported in parentheses, are calculated with standard errors clustered at the FF 10 industry level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. OLS estimates

	(1)	(2)	(3)	(4)	(5)	(6)
	Forced succession		Insider successor		Interim successor	
SP	-0.0903***	-0.0772***	0.0601	0.0652	-0.0971***	-0.0864***
	(-4.13)	(-3.88)	(1.44)	(1.53)	(-3.26)	(-3.14)
Log(total assets)	-0.0228***	-0.0180***	-0.0039	-0.0007	-0.0286***	-0.0199***
	(-3.76)	(-2.90)	(-0.57)	(-0.12)	(-5.55)	(-3.68)
ROA	-0.4886***	-0.4429***	0.1510***	0.1740***	-0.2238***	-0.1877**
	(-4.73)	(-4.55)	(2.72)	(2.94)	(-3.33)	(-2.23)
MTB	-0.0007	-0.0061***	0.0205***	0.0166***	0.0074	0.0030
	(-0.29)	(-3.91)	(4.04)	(4.68)	(1.47)	(0.61)
SP discusses current CEO transition	-0.1251***	-0.1209***	0.0362	0.0400	-0.1036***	-0.0948***
	(-3.60)	(-3.83)	(0.97)	(1.06)	(-3.68)	(-3.25)
CEO remains during transition	-0.2783***	-0.2796***	0.0525***	0.0534***	-0.0727***	-0.0738***
	(-7.55)	(-7.39)	(3.47)	(3.53)	(-4.11)	(-4.24)
% institutional ownership	0.0312	0.0178	0.0183	0.0018	0.0618	0.0192
	(0.45)	(0.30)	(0.31)	(0.03)	(0.71)	(0.27)
# block owners	0.0032	0.0050	-0.0057	-0.0041	0.0052	0.0077
	(0.72)	(1.25)	(-1.16)	(-0.86)	(0.52)	(0.77)
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	No	Yes	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,975	1,975	1,978	1,978	1,978	1,978
Adjusted R^2	0.186	0.198	0.0210	0.0240	0.0360	0.0454

Panel B. IV estimates

	(1) First stage	(2) Forced succession	(3) Insider successor	(4) Interim successor
% rival firms with SP	0.0168***			
	(4.86)			
SP-I		-1.8422**	-1.0565	-1.3662**
		(-2.31)	(-1.02)	(-2.00)
Log(total assets)	0.0203**	0.0175	0.0238	0.0002
	(3.19)	(0.88)	(1.07)	(0.02)
ROA	0.0058	-0.4937***	0.1115**	-0.1873*
	(0.11)	(-3.76)	(2.23)	(-1.75)
MTB	0.0006	-0.0020	0.0200***	0.0071*
	(0.22)	(-0.34)	(3.07)	(1.91)
SP discusses current CEO transition	-0.7337***	-1.4092**	-0.7733	-1.0234**
	(-17.40)	(-2.31)	(-1.06)	(-2.09)
CEO remains during transition	0.0658***	-0.1728***	0.1321*	-0.0003
	(5.92)	(-3.20)	(1.81)	(-0.01)
% institutional ownership	-0.0203	0.0011	0.0189	0.0251
	(-0.39)	(0.01)	(0.26)	(0.30)
# block owners	0.0047	0.0075	-0.0000	0.0102
	(0.69)	(0.76)	(-0.01)	(1.35)
Constant	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	1,799	1,796	1,799	1,799
R^2	0.367	-1.162	-0.455	-0.669
Shea's partial R^2	0.0023			
First-stage F-statistic (p-value)	23.61 (0.0009)			

Table 5. Succession planning and turnover-performance sensitivity

This table reports estimates of ordinary least squares (OLS) regressions of *Forced CEO succession* on prior firm performance and its interaction with *Post*. The sample period is 1994-2010. *CEO succession* is an indicator that equals one in the year the CEO departs and zero otherwise. *Post* is an indicator that equals one for the four years after the 2006 SEC-mandated change in performance evaluation disclosures and zero for the four years before 2006. Performance is measured by stock returns in columns (1)-(4) and the change in return on assets (ROA) in columns (5)-(8). Both stock returns and ROA are calculated over the current and prior fiscal years and adjusted for market or FF 10 industry performance. The sample is restricted to *SP-I firms* in odd-numbered columns and *Non-SP-I firms* in even-numbered columns. *SP-I firms* (*Non-SP-I firms*) are firms whose predicted probability of having a succession plan is above (below) the mean fraction of their twenty closest rivals with succession plans. Rivals are identified based on the text-based network industry classifications (TNIC) of Hoberg and Phillips (2010, 2016). Regressors, other than *Post*, are lagged by one year. All variables are defined in Appendix A. *t*-statistics, reported in parentheses, are calculated with standard errors clustered at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent variable = CEO succession							
	SP-I firms	Non-SP-I firms	SP-I firms	Non-SP-I firms	SP-I firms	Non-SP-I firms	SP-I firms	Non-SP-I firms
	Performance = Stock return				Performance = ΔROA			
Performance adjusted by	Market performance		Industry performance		Market performance		Industry performance	
Post	0.0328	0.0056	0.0316	0.0042	0.0301	0.0016	0.0307	0.0015
	(1.01)	(0.17)	(0.97)	(0.13)	(0.92)	(0.05)	(0.94)	(0.04)
Performance	-0.0299**	-0.0123	-0.0321**	-0.0141*	-0.2206**	-0.0459	-0.2104**	-0.0389
	(-1.98)	(-1.49)	(-2.05)	(-1.65)	(-2.19)	(-1.17)	(-2.36)	(-1.01)
Post x Performance	0.0039	-0.0473***	0.0098	-0.0476***	0.1970	-0.1518**	0.1872	-0.1662**
	(0.18)	(-3.33)	(0.43)	(-3.36)	(1.51)	(-2.16)	(1.48)	(-2.36)
Log(total assets)	0.0142	-0.0099	0.0146	-0.0107	0.0123	-0.0159	0.0132	-0.0149
	(0.70)	(-0.55)	(0.72)	(-0.60)	(0.60)	(-0.88)	(0.65)	(-0.83)
Stock return volatility	2.1931***	1.5014***	2.2019***	1.5323***	2.1913***	1.3758**	2.2196***	1.4197**
	(4.09)	(2.74)	(4.09)	(2.79)	(3.97)	(2.49)	(4.01)	(2.57)
CEO of retirement age	0.0413*	0.0558**	0.0420**	0.0557**	0.0341	0.0550**	0.0341	0.0547**
	(1.96)	(2.51)	(2.00)	(2.50)	(1.62)	(2.43)	(1.62)	(2.41)
CEO tenure	0.2039***	0.1958***	0.2038***	0.1959***	0.2067***	0.1984***	0.2068***	0.1983***
	(21.66)	(19.60)	(21.62)	(19.60)	(21.56)	(19.71)	(21.51)	(19.70)
% institutional ownership	0.0886	-0.0719	0.0856	-0.0683	0.0770	-0.1085*	0.0755	-0.1082*
	(1.14)	(-1.18)	(1.10)	(-1.12)	(0.97)	(-1.78)	(0.95)	(-1.78)
# block owners	0.0039	0.0040	0.0041	0.0039	0.0054	0.0063	0.0054	0.0063
	(0.73)	(0.89)	(0.78)	(0.87)	(1.03)	(1.38)	(1.03)	(1.38)
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,338	5,511	4,338	5,511	4,284	5,438	4,284	5,438
No. of firms	513	701	513	701	511	700	511	700
Within R^2	0.123	0.102	0.122	0.102	0.123	0.103	0.123	0.103

Table 6. Succession planning and volatility

This table reports estimates of instrumental variables (IV) regressions of cumulative abnormal returns (CARs) and volatility measures on succession planning. The IV is the percentage of the twenty closest rivals that have SP, where rivals are identified by the text-based network industry classifications (TNIC) of Hoberg and Phillips (2010, 2016). *SP-I* is the predicted value of SP from the first-stage regression. The sample period is 1994-2010. Panel A reports announcement *CARs* from day -1 to day +1 around the CEO succession (*Log of CAR squared*) in columns (1)-(3) (columns (4)-(6)). Panel B reports *Realized return volatility* (*Idiosyncratic return volatility*) in columns (1)-(3) (columns (4)-(6)). All variables are defined in Appendix A. In each panel, full-sample results are in columns (1) and (4), subsample results for voluntary successions are in columns (2) and (5), and subsample results for forced successions are in columns (3) and (6). Firm controls are as of the latest fiscal year-end prior to the succession. In Panel B, additional controls include the coefficient estimates on the excess market return, the SMB factor, and the HML factor in the Fama and French (1993) 3-factor model, estimated yearly using daily stock returns. *t*-statistics, reported in parentheses, are calculated with standard errors clustered at the FF 10 industry level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Cumulative abnormal returns and returns squared (short-term volatility)

	(1) All successions	(2) Voluntary successions	(3) Forced successions	(4) All successions	(5) Voluntary successions	(6) Forced successions
	CAR			Log of CAR squared		
SP-I	0.1040	-0.0093	2.4191	-0.0633***	-0.0833***	1.0537
	(1.16)	(-0.09)	(0.44)	(-2.98)	(-5.50)	(0.30)
Log(total assets)	-0.0026	-0.0017	-0.0246	0.0014*	0.0022**	-0.0139
	(-0.80)	(-0.42)	(-0.31)	(1.84)	(2.34)	(-0.29)
ROA	-0.0302*	0.0019	-0.1151	-0.0168**	-0.0205	-0.0336
	(-1.65)	(0.07)	(-1.38)	(-2.13)	(-1.40)	(-0.64)
MTB	-0.0008	-0.0012	-0.0124	0.0002	0.0003	-0.0051
	(-1.30)	(-1.02)	(-0.46)	(0.97)	(1.45)	(-0.31)
SP discusses current CEO transition	0.0765	-0.0110	2.3069	-0.0494***	-0.0559***	0.9926
	(1.19)	(-0.15)	(0.44)	(-2.83)	(-4.78)	(0.30)
CEO remains during transition	0.0080	0.0087	-0.1044	0.0013	0.0022	-0.0610
	(0.88)	(1.25)	(-0.32)	(0.53)	(1.07)	(-0.29)
% institutional ownership	0.0006	0.0062	-0.0819	-0.0081**	-0.0121***	-0.0306
	(0.05)	(0.51)	(-0.39)	(-2.29)	(-4.08)	(-0.23)
# block owners	-0.0020	-0.0010	-0.0002	0.0004	0.0010*	0.0004
	(-1.32)	(-0.66)	(-0.02)	(1.01)	(1.73)	(0.06)
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,768	1,317	448	1,768	1,317	448

Panel B. Long-term return volatility

	(1) All successions	(2) Voluntary successions	(3) Forced successions	(4) All successions	(5) Voluntary successions	(6) Forced successions
	Realized return volatility			Idiosyncratic return volatility		
SP-I	-2.3955***	-1.7150***	-29.7381	-2.0286***	-1.4423***	-16.9928
	(-3.86)	(-4.39)	(-0.22)	(-4.44)	(-3.18)	(-0.34)
Market beta	0.1882***	0.1847***	0.0217			
	(4.26)	(4.20)	(0.03)			
SMB beta	0.0549	0.0646*	-0.0278			
	(1.04)	(1.86)	(-0.08)			
HML beta	0.0115	0.0024	0.0785			
	(0.43)	(0.11)	(0.19)			
Log(total assets)	0.0301	0.0215	0.3238	0.0166	0.0039	0.1824
	(1.29)	(1.29)	(0.18)	(1.02)	(0.34)	(0.26)
ROA	-0.3656***	-0.4677***	0.2179	-0.4297***	-0.5606***	-0.0025
	(-2.66)	(-3.32)	(0.11)	(-3.55)	(-5.37)	(-0.00)
MTB	0.0177**	0.0197***	0.1276	0.0145*	0.0196**	0.0665
	(2.14)	(2.79)	(0.19)	(1.77)	(2.39)	(0.28)
SP discusses current CEO transition	-1.7610***	-1.1140***	-28.2165	-1.5030***	-0.9480***	-16.1399
	(-3.83)	(-4.31)	(-0.22)	(-3.97)	(-3.02)	(-0.34)
CEO remains during transition	0.1128**	0.0503*	1.7562	0.0962***	0.0460*	1.0008
	(2.17)	(1.85)	(0.21)	(3.20)	(1.89)	(0.33)
% institutional ownership	-0.3204**	-0.2723***	0.4609	-0.2410**	-0.2088**	0.1195
	(-2.36)	(-2.73)	(0.09)	(-2.26)	(-2.54)	(0.06)
# block owners	0.0250*	0.0212*	-0.0034	0.0231**	0.0189*	0.0068
	(1.87)	(1.81)	(-0.02)	(2.04)	(1.71)	(0.07)
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,766	1,315	448	1,769	1,317	449

Table 7. Succession planning and learning about CEO ability

This table reports the nonlinear trend in volatility from the time the CEO takes office to three years after, using (piecewise linear) spline specifications in Panel A and polynomial specifications in Panel B, as in Pan, Wang, and Weisbach (2015). The sample period is 1994-2010. Full-sample results are in columns (1) and (4), subsample results for firms without succession planning (*Non-SP-I firms*) are in columns (2) and (5), and subsample results for firms with succession planning (*SP-I firms*) are in columns (3) and (6). *SP-I firms* (*Non-SP-I firms*) are firms whose predicted probability of having a succession plan is above (below) the mean fraction of their twenty closest rivals with succession plans. Rivals are identified based on the text-based network industry classifications (TNIC) of Hoberg and Phillips (2010, 2016). In each panel, the outcome variables are *Realized return volatility* in columns (1)-(3) and *Idiosyncratic return volatility* in columns (4)-(6), calculated over each calendar month using daily CRSP stock returns. Market, SMB, and HML betas are also calculated monthly; other control variables are calculated yearly. All variables are defined in Appendix A. *CEO tenure* (year *i*) is the spline for the twelve months in the *i*-th year after turnover. For the 1st to 12th month since the new CEO takes office, *CEO tenure (year 1)* takes the value of 1/12 to 1, while the other two splines take the value of 0. For the 13th to 24th month, *CEO tenure (year 1)* takes the value of 1, *CEO tenure (year 2)* takes the value of 1/12 to 1, and *CEO tenure (year 3)* takes the value of 0. *t*-statistics, reported in parentheses, are calculated with standard errors clustered at the firm-CEO level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Spline specification

	(1)	(2)	(3)	(4)	(5)	(6)
	All firms	Non-SP-I firms	SP-I firms	All firms	Non-SP-I firms	SP-I firms
	Realized return volatility			Idiosyncratic return volatility		
CEO tenure (year 1)	-1.3007***	-1.4958***	-0.5708**	-1.4299***	-1.6142***	-0.6171**
	(-6.82)	(-5.39)	(-2.30)	(-7.34)	(-5.72)	(-2.42)
CEO tenure (year 2)	-0.2834**	-0.3123*	0.3140	-0.3918***	-0.3881**	0.2945
	(-1.96)	(-1.65)	(1.39)	(-2.68)	(-2.00)	(1.23)
CEO tenure (year 3)	-0.4027***	-0.4594***	0.1452	-0.4960***	-0.5029***	0.0956
	(-3.08)	(-2.74)	(0.65)	(-3.67)	(-2.98)	(0.42)
Market beta (monthly)	0.8075***	0.6705***	1.1463***			
	(9.14)	(8.15)	(5.80)			
SMB beta (monthly)	0.1902***	0.2432***	0.1281			
	(2.94)	(4.80)	(0.84)			
HML beta (monthly)	-0.1573***	-0.2026***	-0.0658			
	(-4.44)	(-4.26)	(-1.39)			
Log(total assets)	0.1245	0.1827	0.0449	0.1688	0.2848	0.0906
	(0.23)	(0.25)	(0.06)	(0.31)	(0.40)	(0.12)
MTB	-0.0266	-0.0368	0.0760	-0.0239	-0.0313	0.0687
	(-0.44)	(-0.52)	(0.87)	(-0.37)	(-0.41)	(0.73)
Leverage	-0.5026	0.1226	-1.4743	-0.5078	0.1103	-1.5394
	(-0.78)	(0.15)	(-1.61)	(-0.77)	(0.13)	(-1.58)
Dividend payer	-0.6268	0.1707	-2.4966**	-0.7548	0.1025	-2.7568**
	(-1.32)	(0.42)	(-2.17)	(-1.52)	(0.24)	(-2.25)
Volatility of profitability (ROE)	0.5878	1.9892	-2.8680	-0.2808	1.0693	-2.9546
	(0.17)	(0.44)	(-0.53)	(-0.08)	(0.23)	(-0.53)
ROE	-0.3341	-0.3005	-0.3552	-0.3340	-0.3233	-0.3115
	(-1.52)	(-1.29)	(-1.00)	(-1.48)	(-1.38)	(-0.83)
% institutional ownership	-7.0883***	-6.9150***	-6.9036***	-6.3805***	-6.7378***	-5.4777**
	(-5.34)	(-4.55)	(-2.97)	(-4.39)	(-4.36)	(-2.03)
# block owners	0.1408**	0.0844	0.2078**	0.1317**	0.0830	0.1932**
	(2.34)	(1.08)	(2.40)	(2.10)	(1.02)	(2.07)
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Firm-CEO FE	Yes	Yes	Yes	Yes	Yes	Yes
Calendar year-month FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	49,839	28,760	21,079	49,850	28,760	21,090
Within R^2	0.377	0.361	0.421	0.353	0.340	0.388

Panel B. Polynomial specification

	(1) All firms	(2) Non-SP-I firms	(3) SP-I firms	(4) All firms	(5) Non-SP-I firms	(6) SP-I firms
	Realized return volatility			Idiosyncratic return volatility		
CEO tenure	-1.5447***	-1.7772***	-0.7834**	-1.7038***	-1.9636***	-0.8803**
	(-5.56)	(-4.43)	(-2.12)	(-6.34)	(-5.06)	(-2.42)
CEO tenure^2	0.4897***	0.5714**	0.4312	0.4848***	0.6006**	0.3762
	(2.65)	(2.22)	(1.64)	(2.67)	(2.38)	(1.44)
CEO tenure^3	-0.0663	-0.0784	-0.0627	-0.0610	-0.0774	-0.0481
	(-1.55)	(-1.35)	(-0.98)	(-1.44)	(-1.36)	(-0.75)
Market beta (monthly)	0.8079***	0.6709***	1.1466***			
	(9.14)	(8.16)	(5.79)			
SMB beta (monthly)	0.1901***	0.2432***	0.1277			
	(2.94)	(4.80)	(0.84)			
HML beta (monthly)	-0.1575***	-0.2029***	-0.0658			
	(-4.44)	(-4.26)	(-1.39)			
Log(total assets)	0.1271	0.1859	0.0456	0.0578	0.1055	0.1889
	(0.23)	(0.26)	(0.06)	(0.11)	(0.15)	(0.25)
MTB	-0.0267	-0.0379	0.0776	0.0030	-0.0091	0.0888
	(-0.44)	(-0.53)	(0.88)	(0.05)	(-0.12)	(1.04)
Leverage	-0.5016	0.1283	-1.4822	-0.5049	0.1388	-1.7194*
	(-0.78)	(0.15)	(-1.62)	(-0.79)	(0.17)	(-1.80)
Dividend payer	-0.6223	0.1748	-2.4892**	-0.6166	0.2207	-2.5625**
	(-1.31)	(0.43)	(-2.16)	(-1.27)	(0.53)	(-2.16)
Volatility of profitability (ROE)	0.6035	2.1003	-2.9959	-0.5925	0.9631	-3.7033
	(0.17)	(0.47)	(-0.55)	(-0.18)	(0.22)	(-0.69)
ROE	-0.3381	-0.3052	-0.3586	-0.3405	-0.3516	-0.2945
	(-1.54)	(-1.31)	(-1.01)	(-1.61)	(-1.60)	(-0.86)
% institutional ownership	-7.0868***	-6.9042***	-6.9238***	-7.2407***	-6.9841***	-7.4065***
	(-5.33)	(-4.54)	(-2.97)	(-5.44)	(-4.56)	(-3.17)
# block owners	0.1415**	0.0843	0.2100**	0.1187**	0.0666	0.1790**
	(2.36)	(1.07)	(2.44)	(1.99)	(0.86)	(2.02)
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Firm-CEO FE	Yes	Yes	Yes	Yes	Yes	Yes
Calendar year-month FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	49,839	28,760	21,079	49,837	28,759	21,078
Within R^2	0.377	0.360	0.421	0.253	0.245	0.278

Table 8. Succession planning and CEO dismissal decisions

This table reports estimates of ordinary least squares (OLS) regressions of *Forced CEO succession* in year *t* on idiosyncratic and industry-induced returns in years *t*-1 and *t*-2 (Panel A). The sample period is 1994-2010. Idiosyncratic and industry-induced returns are the residuals and predicted values, respectively, from a first-stage regression predicting firm stock returns by using equally-weighted or value-weighted contemporaneous (Fama-French 48) industry returns (Panel B), as in Jenter and Kanaan (2015). In Panel A, columns (1) and (4) report full-sample results, columns (2) and (5) report subsample results for firms without succession planning (*Non-SP firms*), and columns (3) and (6) report subsample results for firms with succession planning (*SP firms*). *SP firms* (*Non-SP firms*) are firms whose predicted probability of having a succession plan is above (below) the mean fraction of their twenty closest rivals with succession plans. Rivals are identified based on the text-based network industry classifications (TNIC) of Hoberg and Phillips (2010, 2016). *t*-statistics, reported in parentheses, are calculated with White-Huber standard errors in Panel A and standard errors clustered at the industry level in Panel B. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Second-stage regressions

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable = Forced CEO succession					
	All firms	Non-SP-I firms	SP-I firms	All firms	Non-SP-I firms	SP-I firms
	Industry return - EW			Industry return - VW		
Idiosyncratic return $_{t-1}$	-0.1412***	-0.1249***	-0.1528***	-0.1386***	-0.1236***	-0.1468***
	(-8.26)	(-5.44)	(-5.26)	(-8.13)	(-5.38)	(-5.16)
Industry-induced return $_{t-1}$	-0.0974**	-0.1520**	-0.0521	-0.1294***	-0.1825***	-0.1017
	(-1.97)	(-2.32)	(-0.61)	(-2.64)	(-2.76)	(-1.24)
Idiosyncratic return $_{t-2}$	-0.0579***	-0.0649***	-0.0976***	-0.0573***	-0.0626***	-0.1009***
	(-3.43)	(-3.07)	(-3.03)	(-3.40)	(-2.97)	(-3.10)
Industry-induced return $_{t-2}$	-0.0009	0.0109	-0.0650	-0.0091	-0.0268	-0.0330
	(-0.02)	(0.15)	(-0.77)	(-0.18)	(-0.39)	(-0.40)
CEO of retirement age	-0.2073***	-0.2521***	-0.1790***	-0.2070***	-0.2520***	-0.1785***
	(-15.95)	(-12.29)	(-8.38)	(-15.96)	(-12.34)	(-8.37)
CEO tenure	-0.0248***	-0.0238***	-0.0238***	-0.0247***	-0.0235***	-0.0238***
	(-9.53)	(-6.55)	(-5.86)	(-9.47)	(-6.45)	(-5.83)
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,037	1,462	1,170	3,033	1,460	1,168
Pseudo R^2	0.138	0.134	0.131	0.137	0.132	0.130

Panel B. First-stage regressions

	(1)	(2)	(3)	(4)
	Firm return $_{t-1}$	Firm return $_{t-1}$	Firm return $_{t-2}$	Firm return $_{t-2}$
EW industry return $_{t-1}$	0.6759***			
	(24.32)			
VW industry return $_{t-1}$		0.7577***		
		(22.96)		
EW industry return $_{t-2}$			0.7019***	
			(24.81)	
VW industry return $_{t-2}$				0.7700***
				(22.08)
Constant	Yes	Yes	Yes	Yes
Observations	47,733	47,653	46,576	46,482
Adjusted R^2	0.144	0.127	0.142	0.130