Internal Managerial Promotions: Insider Incentives and CEO Succession

Shawn Mobbs [a,*]
[a] Culverhouse College of Commerce and Business Administration
University of Alabama
200 Alston Hall
Box 870224
361 Stadium Drive
Tuscaloosa, AL 35487
United States

Charu G. Raheja [b,1]
[b] Babcock Graduate School of Management
Wake Forest University
Winston-Salem, NC 27106
United States

JEL classification: G30; G32; G34

[*] Corresponding author: Economics Finance and Legal Studies, Culverhouse College of Commerce and Business Administration, University of Alabama, Tuscaloosa, AL 35487, United States. Tel.: +1 205 348 6097; fax: +1 205 348 0590.
E-mail addresses: smobbs@cba.ua.edu (S. Mobbs), charu.raheja@triagelogic.com (C. Raheja)
[1] Charu G. Raheja has moved to TriageLogic Management, located in Jacksonville, FL 32217, United States. Tel.: +1 615 473 5036.

Abstract

We identify and compare firms that promote a single executive (successor-incentive) and companies that conduct tournaments (tournament-incentive) among inside managers to succeed the CEO. Successor-incentive firms give more pay-for-performance compensation to the designated successor, are more likely in firms or industries where firm-specific human capital is more important to the CEO position and where the supply of potential outside CEO replacements is limited. In addition, these firms are associated with lower CEO turnover sensitivity to firm performance. Restricting firms that are suited for a successor-incentive promotion to a tournament-incentive promotion is associated with lower firm valuation.

Keywords: CEO Succession, organization structure, tournament, compensation, firm performance.

1.0 Introduction

Promotion and incentives of internal managers and the selection of Chief Executive Officers (CEOs) have been topics of great interest and debate among academics and practitioners. Further, recent research points to the important role of senior executives in firm management and firm value (Adams et al. (2005), Acharya et al. (2011), Dyck et al. (2010), Masulis and Mobbs (2011) and Raheja (2005)). This paper studies internal senior executive promotions and succession planning. We show how different methods of promotion impact managerial incentives and how these methods depend on specific firm requirements.

Some shareholders advocate for competition among CEO candidates such as in the highly visible races at General Electric and, more recently, the revealed race at IBM[2], whereas others promote grooming a single successor such as Microsoft's selection of long time employee Steve Ballmer as Bill Gates' successor two years before he eventually became the CEO. As a result of the debate, in December 2009, the SEC enacted a new rule allowing shareholders to make proxy proposals on CEO succession planning, concluding that "CEO succession planning raises a significant policy issue regarding the governance of the corporation,"[3]

We follow the literature and identify two types of promotion methods used by firms: multiple candidates competing in a tournament for the CEO position or a single manager groomed for succession. Even though all firms start with some form of tournament for CEO succession (at least implicitly), some choose to end the tournaments early by appointing one leading candidate several years prior to a planned CEO retirement while others continue a tournament until CEO retirement. These two approaches to succession planning have different incentive effects because tournament promotions focus executive attention on performance and

[2] See Wall Street Journal article "IBM Crafts Succession Plan" June 12, 2011
[3] See Staff legal bulletin No. 14E (CF) at http://www.sec.gov/interps/legal/cfslb14e.htm

competition with other candidates, while single successor promotions focus executive attention on cooperation with the CEO and the transfer of knowledge from the CEO to the candidate.

The CEO removal decision and the corresponding selection of a replacement is one of the most important functions of the board of directors (e.g. Huson et al. (2001) and Huson et al. (2004)). Internal promotions are an important aspect of CEO succession management because they impact firms' ability to identify future CEOs and incentivize internal managers. First, the majority of CEOs who depart voluntarily are replaced by insiders, which means that internal candidates are an important source for future CEOs (Cremers and Grinstein (2009) and Parrino (1997)). Second, internal managerial promotion impacts the incentive for managers to invest in firm-specific skills, remain in the firm, and exert effort to maximize firm value (Prendergast (1993), Fama and Jensen (1983) and Acharya et al. (2011)).

Prior work on executive promotion has focused on either successor-incentive or tournament-incentive promotion without explicitly considering the other or why certain firms choose one over the other. Further, most studies do not identify and study the insiders being promoted because most companies do not announce their promotion method and the executives being considered. We contribute to the literature by developing a method that ranks managers based on their likelihood of being the internal candidate to succeed the CEO. These rankings are based on each executive's title, relative compensation, ownership in the firm, and board seat in the firm. We then use the rankings to classify firms as a tournament-incentive or successor-incentive firm based on whether they have multiple or only one executive with a high likelihood of becoming the next CEO, respectively. This approach allows for firm and executive level comparisons between successor and tournament incentive promotions.

Furthermore, our method of identifying tournament contenders or a chosen successor at the executive level makes a significant contribution to the existing empirical literature analyzing tournament incentives. A common measure for the degree of tournament incentives used in recent empirical literature is the pay gap between the CEO and the median compensation of the executive team (e.g. Kale et al. (2009), Kini and Williams (2012) and Burns et al. (2012)). This method correctly asserts that the larger the pay gap the greater the tournament incentives (ie. the larger the prize for winning (Lazear and Rosen (1981))). However, this measure is only effective when the firm is actually conducting a tournament. Specifically, if the firm has already appointed an heir apparent this measure of tournament incentives has less meaning. For example, in 2000 IBM promoted Sam Palmisano as the heir apparent to then CEO Lou Gerstner two years before Palmisano eventually became CEO, drastically reducing the tournament incentives for the executive team. However, the pay gap measure of tournament incentives for IBM actually increased from 1999 to 2000, incorrectly indicating an increase in tournament incentives. Conversely, our measure identified Palmisano as the single successor in 1999, thus capturing the reduced tournament incentives. Our method, therefore, creates opportunities for additional cross-sectional analysis of tournament incentives.

First, we study the tradeoff between implicit incentives from the promotion method and explicit incentives from compensation contracts. Consistent with the Gibbons and Murphy (1992) model that pay should be most sensitive to performance for managers facing less competition for promotion, we find that the single candidates in successor-incentive firms receive a higher proportion of their pay in equity than the competing candidates in tournament-incentive firms. The single executive also receives more total pay than the executives in tournament firms, which suggests that more authority is given to these executives in their firms.

Second, we examine the determinants of the promotion method selected by firms and find support for two hypotheses. First, the degree of firm-specific human capital required for the CEO position influences whether a firm conducts a tournament or selects an heir. Stable manufacturing firms are more likely to maintain tournament incentives whereas service oriented firms, where relational firm-specific human capital is important, or volatile firms are more likely to have a single successor. Second, we find the CEO labor market also influences a firm's promotion choice. Tournaments are more likely in more homogenous industries, where less effort is required to evaluate participants and there is a greater availability of outside substitutes (Parrino (1997)).

In contrast with prior research, we find that tournament-incentive firms are more likely to hire an outside CEO than are successor-incentive firms. Agrawal et al. (2006) find that outside successions are less likely in firms conducting tournaments, where they identify tournament firms based on organizational structure. Our method reveals that once they elevate a single executive firms are less likely to hire from the outside, regardless of the organizational structure. Conversely, as long as multiple executives are competing to be the CEO, outside candidates are possible, which essentially increases the number of contenders. Thus, important firm and industry characteristics are associated with a firm's promotion method.

Third, we examine CEO succession decisions and find that firms with a successor-incentive promotion are associated with CEO turnover that is less sensitive to performance, even though turnover is more likely to occur in these firms. This is consistent with the greater importance of human capital in these firms making it more difficult to replace the CEO before a successor is ready to take the reins. In addition, it is also consistent with greater difficulty in

monitoring and evaluating the performance of the firm's managers, making it less likely that the board will respond quickly to poor performance.

Fourth, we study firm valuation to gauge the importance of a firm's promotion method and to complement recent studies examining tournament incentives and firm performance. Prior research suggests firms with an individual successor may be detrimental to firm value because of a lack of a comparison group, reduced competition among senior managers and a greater likelihood of entrenchment by the CEO and the top executive (see arguments in Lazear and Rosen (1981), Raheja (2005), and Kale et al. (2009) among others). Indeed, in cross-sectional OLS regressions we find a 2.2% lower valuation in companies implementing a successor-incentive promotion. However, when we account for the endogenous choice by firms to self-select to have a successor-incentive structure, we find evidence of a negative selection effect. Once we account for the negative selection effective in a two-equation treatment model, we find a positive treatment effect for having a successor. In other words, firms that require a successor-incentive structure are also associated with lower valuations but having an heir is better than maintaining a tournament for these firms. This is consistent with companies selecting a succession method based on their own specific needs.

Even after accounting for the endogenous choice it is important to acknowledge that our evidence still does not necessarily imply causation and that a lower valuation and the presence of a single successor may both be related to other factors. For example, a common argument against tournament promotions is the difficulty in retaining talented managers willing to compete. Managers with good outside options may choose to leave the competition and join another firm if the utility from an expected CEO position in another firm is higher (we partially capture this possibility by controlling for industry homogeneity in our selection model). This can make it too

costly for some firms to retain multiple managers (Acharya, et al. (2011)). Thus, our goal in this paper is to show a relation, but not to imply causation.

Our results add to the understanding of internal corporate governance and management incentives. First, both tournaments and successor-incentive promotions are used to promote internal management. Second, companies trade-off promotion incentives with compensation incentives. Third, the promotion method implemented by firms is associated with their CEO turnover decisions and its responsiveness to firm performance. Fourth, companies select their promotion method based on their own firm and management characteristics. Although successor-incentive firms are associated with lower a valuation, having a successor in these firms is associated with a higher valuation than they would otherwise experience.

The remainder of the paper is organized as follows. The next section describes our data and our methods of identifying firms' promotion of internal executives. Section 3 examines senior management compensation and its relation to the promotion method. Section 4 studies the determinants of firms employing successor-incentives. Section 5 explores CEO turnover sensitivity to firm performance and internal versus external CEO selection. Section 6 examines relations with firm value. Section 7 discusses robustness tests. Section 8 concludes.

2.0 Promotion Method Identification, Data and Summary Statistics

We identify and compare the internal promotion method used by firms. Lazear and Rosen (1981) describe a model where multiple senior managers compete to be promoted to CEO, thus creating competitive tournament incentives. We call this model, which is empirically studied in Kale et al. (2009), Agrawal et al. (2006), Cichello et al. (2009) and Bognanno (2001), a *tournament-incentive* model. Alternatively, Vancil (1987), Cannella and Shen (2001), Fee and

Hadlock (2003) and Naveen (2006) study a promotion model where a single candidate is promoted as the CEO successor several years prior to becoming CEO. This candidate receives higher pay, may hold a distinguishing title such as Chief Operating Officer (COO) or may be on the board. The heir has the position and incentive to work closely with the CEO and to prepare for succession. We call this promotion method a *successor-incentive* model.

We begin with the ExecuComp database for the years 1997 to 2008. We consider the top five highest paid executives in each firm and exclude executives who are chairpersons, CEOs, executives that held a CEO position during the past year, and executives over the age of 65 as they are not likely to be planned succession candidates and are thus less likely influenced by promotion incentives.[4] Finally, we require that executive tenure, ownership, and compensation data be available for each of these executives for two years following each observation (for example, 2010 data for observations in 2008). This leaves us with 87,924 qualifying executive-years for 16,801 firm-years. We add accounting, market and board data from the Compustat, CRSP and Risk Metrics databases, respectively.

2.1 MEASURE OF TEAM STRUCTURE BASED ON CEO PROMOTION LIKELIHOOD

Our first step for each qualifying executive within a firm is to identify their likelihood of being promoted to CEO. We estimate an ordered logit model where for each executive-firm-year the dependent variable takes the value of -1 if the executive is not identified as the next CEO, but another executive in the same firm is selected, 0 if no executive within the firm is identified to be the firm's next CEO and 1 if the executive is identified to be the firm's next CEO.[5] The

[4] In a few cases, only one of the top 5 executives qualifies for the sample. We classify those companies as successor-incentive firms. In unreported results, we exclude those cases and find results similar to those presented.

[5] We thank an anonymous referee for suggesting a refinement of the logit model.

independent variables are executive characteristics that can affect the likelihood of the executive succeeding the CEO. We then generate a propensity score for the likelihood of each executive becoming the firm's next CEO based on the coefficients from the regression. We rank the executives in each firm by their propensity score and all executives within 10% of the highest are considered tournament contenders. Firms with a single executive contender are classified as successor-incentive firms.

Several studies indicate that executive compensation within a firm rises with executive ranking in firm hierarchy (e.g. Murphy (1985), Leonard (1990), Baker et al. (1994), and Gibbs (1995), Wulf (2007)). Bognanno (2001) also finds that succeeding executives are the highest paid non-CEO executives in the firm for 80% of the cases in the year prior to succession. Therefore, relative compensation can be an important predictor of the future CEO. We capture this predictor with an indicator variable that equals 1 if the executive's total pay is within 10% of the highest paid executive. Total compensation (Execucomp data item tdc1) includes salary, bonus, the Black-Scholes value of option grants, restricted stock grants, LTIP and other annual compensation.[6] Next, to capture Hermalin and Weisbach (1988)'s finding that firms nominate executives to the board prior to a CEO succession, we create a dummy variable that equals 1 if the executive holds a seat on the board. Following Cremers and Grinstein (2009), Naveen (2006) and Vancil (1987) we create a COO indicator that equals one if the executive holds the title of COO. We also include the stock ownership held by the executive, since Boyer and Molina (2008) find executives can use ownership to signal their desire to be the CEO. Finally, we include an

[6] This amount includes severance payments, debt forgiveness, imputed interest, payouts for cancellation of stock options, payment for unused vacation, tax reimbursements, signing bonuses, 401K contributions and/or life insurance premiums.

indicator for whether or not the executive was hired within the last two years to control for executives hired to be the next CEO. We do not control for individual firm characteristics since we only use the results from the model to compare among insiders *within* each firm.

The ordered logit model results are presented in Table I. We use robust standard errors clustered by executive. The probabilities of an outcome for a given firm executive are reported near the bottom of Table I panel A. For a given executive-year there is an 86.5% chance that the tournament will continue, a 10.4% chance the executive will lose the tournament and another executive is appointed heir and a 3% chance an executive will win the tournament. All coefficient estimates for the independent variables are significant and have the expected signs. Panel B reports the predicted probabilities of the various outcomes for a given change in each of the dependent variables holding all other variables at their mean. Gaining a board seat has the greatest influence on becoming the successor as those with a board seat are about 2.5 times more likely to win the tournament. Being highly paid has the next most significant impact followed by holding the title of COO. Executive ownership and the recent hire indicator are also important, but their impact is small in comparison to the executive's title, board position and pay.

We use the coefficients from the model to generate a probability score of succeeding the CEO for each executive and then classify each firm as a successor-incentive firm or a tournament-incentive firm based on the methodology outlined above. Table II panel A shows the distribution of tournament-incentive and successor-incentive firms. Nineteen percent of the firm-year observations have tournament-incentive promotions. At the same time, the frequency of tournament-incentive promotions is increasing throughout the sample period. The fraction of firms with tournament-incentives in 2008 is significantly greater than that of 1997 (p-value<.01).

Table II panel B shows the number of contenders in tournament-incentive firms. Among tournament-incentive firms, 91% involve competition among two or three competitors.

Table II panel C shows the distribution of the main contender identifying factors from the ordered logit model. For the entire sample, 41% of the firms have a non-CEO executive on the board with this proportion decreasing over time from 61% in 1997 to 32% in 2008. This result is not surprising given the recent pressure on firms to increase outside director representation on the board (e.g. see Masulis and Mobbs (2011)). Table II also shows that about one-third of the firms have at least one contender with the title of COO.

Figure 1 illustrates the change in promotion type within firms. It shows the fraction of firms with successor-incentive promotion in the years prior to a CEO transition. More than five years before a CEO succession the fraction of firms with successor-incentives is around 80%, but in the four years leading up to a succession this fraction increases to over 90%. No sudden increase in any one year prior to a CEO succession reveals that firms elect to end their tournaments at different points prior to a CEO succession.

Table III examines actual internal CEO succession outcomes in our sample firms and the accuracy of our method in identifying the correct successor two years prior to a CEO turnover. We observe 1,436 cases of internal CEO successions and our method identifies the correct successor in 79% of the cases (1,130). Out of these correctly identified successors, 89% of the firms had a successor-incentive promotion and 11% were tournament-incentive promotions. As a comparison, we also identified executives with variations of COO in their title. To be conservative, we counted *all the executives* with COO anywhere in their title to account for cases where multiple executives in the firm had the title of COO. The COO title is able to identify the

correct candidate in 40% of the cases. Thus, our method was able to identify the potential successor in 96% more cases than the method of considering only COO titles ((1130-577)/577).

As a robustness check to our identification method above, we re-test our results reported below using an 8% and 12% cutoff for the executive propensity score differences. Additionally, we also use tighter cutoffs and leave firms unclassified when the tournament contenders or the successor are more difficult to discern. The results from these variations in measurement are qualitatively the same as those reported.

2.2 DESCRIPTIVE STATISTICS

Table IV presents summary statistics. The full sample statistics are in the first column and the next two columns present statistics for sub-samples of firms identified as tournament-incentive and successor-incentive, respectively. We report the differences between each variable mean and median in the last column. Significance levels reported for the difference in the medians are from Wilcoxon (1945) signed rank tests, which measures whether or not the distributions from the two sub-samples are the same.

Panel A shows firm and industry characteristics. The average firm has $13 billion of total assets, $5.2 billion in total sales, and it has been trading for 23 years. Tournament firms have more geographic segments, are less volatile, and are slightly older with less debt. The industry homogeneity index, calculated using the methodology outlined in Parrino (1997), has a mean (median) of .295 (.280) for our sample period and is similar to those found in Parrino (1997) and Naveen (2006).[7] Tournament-incentive firms have a significantly higher

[7] For each sample industry-year, we calculate an equally weighted return index using monthly returns for the prior twenty years. If there are more than 50 firms in an industry, we take a random sample of 50 firms to generate an industry index. We use the Fama-French 49 industry definitions. Next, the monthly return for each firm in the industry index is regressed on the monthly return of the index and the equally weighted market return. We use the

homogeneity index. There is no significant difference across succession firm types and the Herfindahl index.

CEO and board characteristics are reported in panel B. The average CEO in our sample is 56 years old, has seven years tenure as CEO, and is chairman of the board in 62% of the cases. The average CEO ownership is greater than earlier samples, 2.2% versus 1.02% in the Huson et al. (2004) sample. CEO ownership, age, tenure and chairperson frequency are all statistically greater in successor-incentive firms. Although the medians are the same for CEO Chairperson, the signed-rank test indicates that the two sub-samples do not have the same distribution.

Tournament-incentive firms have an average board independence of 71% versus 68% for successor-incentive firms. The significant difference in board independence may be due to successor-incentive companies having the CEO contender executive on the board more often than tournament-incentive companies. The average board size in our sample is 9.4 directors and only differs slightly across classifications.

We also observe differences in CEO compensation between tournament-incentive and successor-incentive firms. Mean total CEO compensation is higher in successor-incentive firms by about $500,000 (total compensation is measured as defined in Section 2.1). CEO pay gap, measured as CEO total compensation minus total compensation of the highest paid CEO contender divided by the total compensation of the highest paid CEO contender, is higher in tournament-incentive firms (consistent with Lazear and Rosen (1981)). The mean (median) CEO pay gap is 159% (128%) in tournament firms and it is 103% (68%) in successor-incentive firms. Kale et al. (2009) measure the gap between the CEO's compensation and the median of the

---

CRSP equally weighted return index to proxy for the market return. Finally, industry homogeneity is the average across all firms in each industry of the partial correlation coefficient on the industry return index.

entire management team's compensation as a proxy for tournament incentives among the executive team. As an additional check, we also measure this gap and find successor-incentive firms actually have a significantly higher "tournament incentive" gap using their measure. Thus, our measure captures a different dimension of the executive team's tournament incentives.

Panel C describes executive level information. The mean (median) total compensation for the contenders in all firms is $1.9 million ($1.1 million). The mean and median total compensation of the contender in successor-incentive firms is significantly larger than that for the average compensation of the competitors in tournament-incentive firms. Contenders in successor-incentive firms also receive about a 5% higher proportion of equity compensation than the contenders in tournament-incentive firms. Finally, considering contenders and other executives, we find a greater gap in total compensation between the contenders and the lowest paid executive in successor-incentive firms by a mean (median) of 28% (18%).

All presented regression results incorporate heteroskedasticity-consistent standard errors using the White (1980) estimator. Furthermore, since our data are panel data, we also use standard errors clustered by firm to account for possible serial correlation within our panel. We separately capture the time-effect with year dummies in each regression (Petersen (2009)).

3.0 Promotion and Pay Incentives

Prendergast (1999) argues that firms should adjust manager's incentive compensation based on the promotion method since different methods have different incentive effects. Additionally, Lazear and Rosen (1981) show that the competition created in tournament-incentive firms increases the incentive for executives to exert effort and maximize firm value and that successor-incentive firms need to use compensation incentive to offset their lack of

competition. Similarly, Gibbons and Murphy (1992) argue that pay should be most sensitive to performance for workers facing less competition for promotion. In related work, Walker (2007) presents surprising evidence that firms do not adjust for varying promotion incentives and give the same proportion of incentive pay to all firm managers. We explore this further by testing whether equity acts as a substitute for the lack of internal competition in successor-incentive firms. Under this hypothesis, successor-incentive firms use more equity compensation than tournament-incentive firms to motivate their top executives.

Table V reports results from a test of this hypothesis. The dependent variable in model 1 is the percentage equity compensation of the contenders. The controls follow similar studies on compensation (e.g. Bebchuk et al. (2011), Bebchuk and Grinstein (2005), Becker (2006), Rose and Shepard (1997) and Mehran (1995)). For tournament-incentive firms, we calculate the average percentage of equity compensation of the contenders by adding their total equity and dividing it by the total compensation of the contenders. The successor-incentive promotion coefficient is 3.05 and is significant at less than the 1% level. These results support the hypothesis that successor-incentive firms compensate for the lack of competition among managers by giving a higher proportion of equity compensation to their top executive.[8]

It is possible that companies with tournament incentives provide similar pay-for-performance incentives as successor-incentive firms but use alternative measures that would better capture the contributions of each manager to the firm. In unreported results, we separately test this possibility by examining the average bonus and long-term incentive compensation as a

[8] We note that the higher percentage of equity compensation may also signal that the manager is being groomed for the CEO position. While this is an additional reason for higher equity to the single-designated insider, it is still consistent with the executive receiving more equity incentive when there is less promotion competition.

percentage of the total income of the CEO contenders using the same independent variables as in Table V. We find no relation between the promotion method implemented and the bonus or long-term incentive payments. Thus, successor-incentive firms use a higher proportion of equity compensation but do not differ in their use of bonuses or long-term-incentive payments.

Model 2 reports results of analysis of the pay gap between the highest paid CEO contender and the lowest paid manager in the executive team divided by the compensation of the highest paid contender. We find a higher compensation gap in successor-incentive firms.[9] Thus, the single CEO contender in successor-incentive firms has more pay relative to the rest of the management team than contenders in tournament-incentive firms. One possible explanation for the result is that companies promote the single executive more actively once they designate a candidate, but it also suggests a higher isolation and potential for entrenchment of the single candidate in successor-incentive firms. This result is similar to Wulf (2007).

In summary, the evidence in Table V shows that firms give a higher proportion of equity compensation to substitute for less promotion related competition in successor-incentive firms. In addition, the pay gap between the contender and the rest of the management team is higher in successor-incentive firms by about 17%.

4.0 Determinants of Executive Promotion

We examine determinants of a firm's choice of successor or tournament-incentive promotion by considering two different, though not mutually exclusive, hypotheses. The first is based on the importance of firm-specific human capital in the CEO position and the second on

[9] To ensure this result is not driven by firms with fewer qualifying candidates, we excluded all firms with less than 4 qualifying executives. Although we have fewer observations, the results remain similar to those reported.

the CEO labor market. The hypotheses are tested using logit regressions. The dependent variable is one if the firm has a successor-incentive promotion and zero if it has a tournament-incentive promotion. Year dummies account for the time trends observed in Table II and the decline in importance of firm-specific knowledge required by the CEO position noted by Bertrand (2009).

The *Human Capital* hypothesis predicts that in firms where the knowledge required of the CEO is unique to the firm it is beneficial for the potential successor to spend more time with the incumbent CEO prior to the transition to acquire the unique firm-specific knowledge. First, executives of large, complex or older firms can be familiar with their division of the company, but have limited knowledge of other important aspects of the firm. We control for firm size, complexity and age with total assets, the number of business segments and the number of years the firm has been listed in CRSP, respectively. We take the natural logarithm of each to reduce skewness. Second, firms in service oriented industries require substantial firm-specific human capital that is relationship based, which can only be acquired by spending time with the current CEO (Vancil (1987)). In contrast, leadership in manufacturing firms requires more general skills and less firm-specific knowledge. Thus, it is less important for the successor and the incumbent CEO to spend time together prior to transitioning, reducing the need for a successor-incentive structure. Likewise, stable firms are more transparent making it easier for agents, internal and external, to observe the necessary firm-specific human capital required to lead the firm and is more conducive to maintaining tournament incentives. We measure service and manufacturing

oriented firms with an indicator if they are in the respective Fama-French (1997) defined industries[10] and firm stability with firm monthly stock return volatility.

The second hypothesis, referred to as the *CEO Market* hypothesis, focuses on a firm's demand for a new CEO and the supply of potential CEOs. First, the characteristics of the incumbent CEO can affect the firm's demand for a new CEO. Young CEOs are less likely to select a potential successor since they are not ready for retirement. We measure this possibility with an indicator variable that equals one if the current CEO is under the age of 60. On the other hand, CEOs with longer tenure are likely thinking of retirement and selecting a successor. In addition to CEO tenure we also control for CEO ownership and whether the CEO is the chairman of the board to account for CEO influence. Industry conditions can also affect a firm's succession promotion choice. First, the supply of potential external CEOs is greater in more homogeneous industries (Parrino (1997)), and this greater supply decreases the need for companies to select a single potential successor. Further, firm executives are more likely to be willing to take part in a tournament competition when their abilities are more easily transferable to other firms in the industry should they not win their firm's tournament. This makes it less costly for firms to conduct tournaments. Moreover, executives in homogeneous industries likely have similar skills, which is more conducive to tournaments (Baker et al. (1988)). Second, the industry concentration can also affect the promotion choice. In more concentrated industries there are fewer firms, but these firms can be larger and more complex so the supply of potential CEOs from other firms within the industry is limited. We measure industry homogeneity

[10] Fama-French defined Service Industries are Entertainment (7), Personal Services (33), Business Services (34), Restaurants Hotels Motels (44) and Healthcare (11) and Manufacturing Industries are Fama-French codes 2 to 5, 8 to 10, 12 to 17, 19 to 26, 35, 37 and 40.

following Parrino (1997) and industry concentration with the Herfindalh index for each Fama-French defined industry group.

Table VI model 1 includes determinants based on the *Human Capital* hypothesis. We find no evidence that larger, older or firms with multiple segments are associated with the managerial promotion incentive structure. We do find evidence that the nature of the firm's business matters. Specifically, the coefficients for the service industry indicator and firm volatility are positive and significant. Conversely, the coefficient for the manufacturing industry indicator is negative and significant. Thus, there is evidence that firms are more likely to promote a single executive when firm-specific human capital is vital for the firm's CEO position.

Model 2 incorporates determinants associated with the *CEO Market* hypothesis. As expected, young CEOs are associated with a lower likelihood of a successor-incentive promotion, while greater CEO tenure is associated with a higher likelihood. CEO ownership and chairmanship are not significant. Firms in more homogeneous industries are less likely to employ a successor-incentive structure, consistent with Parrino (1997)'s argument that firms in these industries have access to a larger pool of qualified candidates, making finding and training a successor less critical in managing CEO succession. The Herfindahl index is positive but not significant. Finally, in model 3 we control for all factors and find similar results including a positive and significant coefficient estimate for the Herfindahl index. Thus, the limited supply of outside CEO candidates available to firms in more concentrated industries can increase the importance of training an internal replacement through a successor-incentive structure.

In summary, the Table VI results reveal two important insights into firm CEO succession planning. First, when firm-specific human capital is of greater importance for the CEO, such as in service industries, firms opt for a prolonged grooming period to allow the potential successor

time to work with the incumbent CEO. Second, when there is greater availability of qualified external candidates, firms maintain tournament-incentive promotions rather than grooming one executive. Thus, the optimal executive promotion structure varies across firms and industries based on the importance of firm-specific human capital and the supply of qualified CEOs.

5.0 CEO Succession

5.1 CEO TURNOVER SENSITIVTY TO PERFORMANCE

To gain further insight into the firm succession promotion choice, we examine the sensitivity of CEO turnover to firm performance. Here the *Human Capital* hypothesis and the *CEO Market* hypothesis each have different predictions based on the availability of a CEO replacement and the importance of firm-specific human capital in the selection of a new CEO.

The *Human Capital* hypothesis recognizes that it takes time for a chosen successor to acquire the firm-specific human capital required for the CEO position. The time constraint required for the successor to be ready to assume the CEO title can deter boards from initiating a CEO succession, even if performance suffers, until this transfer of knowledge is complete. Moreover, the uniqueness of the firm can also make it more difficult for outside directors to monitor the CEO and to initiate CEO turnover events. The greater time required to transfer firm-specific knowledge and the difficulty in monitoring management can result in delayed CEO turnover decisions, making such decisions less sensitive to firm performance. Thus, the *Human Capital* hypothesis predicts that a successor-incentive structure is associated with CEO turnover that is *less* sensitive to performance.

The *CEO Market* hypothesis takes into account the availability of a qualified CEO replacement. Prior research has found that access to qualified external or internal candidates

improves CEO turnover sensitivity to performance (e.g. Weisbach (1988) and Mobbs (2012)). A successor-incentive promotion signals a firm's preference for a particular executive as a qualified candidate who can potentially replace the CEO if performance decreases. Conversely, tournament-incentive firms have not yet determined a single successor, making it more difficult for the board to quickly replace a poor performing CEO. This delay can result in CEO turnover that is less sensitive to performance. Therefore, the *CEO Market* hypothesis predicts that CEO turnover is *more* sensitive to performance in successor-incentive firms.

We test these hypotheses with logit regressions where the dependent variable equals one if the CEO was replaced in the given year. The key independent variables are an indicator if the firm employs a successor-incentive promotion and the change in firm return on assets (ROA) (see e.g. Weisbach (1988), Fich and Shivdasani (2006), and Hermalin and Weisbach (1998)) and their interaction, which measures the promotion method's effect on CEO turnover sensitivity to performance. We also control for firm size, CEO ownership, CEO age, outside director ownership and the percentage of independent directors on the board. We also compute the unconditional probability of CEO turnover by evaluating all continuous variables at their means and dichotomous variables at their mode. The results are presented in Table VII.

First, a single CEO contender in the firm is associated with greater overall likelihood of CEO turnover. This result is consistent with the availability of a qualified replacement increasing the threat of turnover in the *CEO Market* hypothesis, but this estimate alone does not consider the CEO turnover sensitivity to performance. We find a negative association between CEO turnover and changes in ROA, as expected. More interestingly, however, the coefficient on the interaction between changes in ROA and the successor-incentive indicator is positive and significant. The interaction variable shows that a successor-incentive promotion *reduces* CEO

turnover sensitivity to changes in operating performance, which is consistent with the *Human Capital* hypothesis. The results of an F-test at the end of the table show that the net impact of a successor-incentive promotion is to weaken CEO turnover sensitivity to firm performance.

To estimate the economic impact of the lower CEO turnover sensitivity to changes in firm performance in successor-incentive firms, we measure the difference in the probability of CEO turnover between the mean change in operating performance and the 10th percentile change in operating performance.[11] The average change in operating performance in tournament-incentive firms is associated with a conditional probability of CEO turnover of 0.0407. The likelihood of CEO turnover increases to 0.0455 (by 11.8%) if the company experiences a large drop in performance (10th percentile change in ROA). Conversely, the average change in performance in successor-incentive firms is associated with a probability of CEO turnover of 0.0922. But when a large drop in performance occurs, we observe a CEO turnover probability of only 0.0917 or a slight *decrease* (-.5%) in the likelihood of CEO turnover. Thus, while overall CEO replacement is more likely in firms with a single successor, these firms have negligible CEO turnover sensitivity to performance. This finding provides evidence consistent with the *Human Capital* hypothesis that human capital considerations have a stronger influence than CEO availability in a firm's choice to replace the CEO when performance suffers. This result also reveals that weaker CEO turnover sensitivity to performance can be due to the human capital requirements of the CEO position in some firms rather than to poor governance.

5.2 INTERNAL SUCCESSIONS

[11] Because logit models are non-linear and the interaction term involves a binary variable, the marginal effects of the interactive variable is estimated by taking discrete differences (Powers (2005), Ai and Norton (2003)) as:

$$\frac{\partial E[y|ROA,S.E.]}{\partial_{ROA}}\Big|_{S.E.=1} - \frac{\partial E[y|ROA,S.E.]}{\partial_{ROA}}\Big|_{S.E.=0} \quad \text{where} \quad \frac{\partial E[y|ROA,S.E.]}{\partial_{ROA}} = \frac{e^{X\beta}}{(1+e^{X\beta})^2}[\beta_{ROA} + \beta_{S.E.}\text{Single Exec}]$$

The internal promotion structure can also reveal the board's propensity toward hiring an internal or external CEO. Agrawal et al. (2006) find evidence that firms conducting tournaments are less likely to hire outside CEOs due to the need to maintain strong incentives for the tournament competitors. In contrast, Becker (1964) argues that investing in the development of a single executive to be the next CEO increases the cost of forgoing that executive to hire an outside CEO. According to Becker (1964), tournament-incentive firms have yet to commit to a particular executive making it less costly to hire an external CEO. Thus, whether tournament or successor-incentive firms are more likely to hire an internal CEO is an empirical issue.

In unreported univariate t-tests of the difference in the sample means we find that tournament-incentive firms select an insider 71% of the time, whereas successor-incentive firms select an insider 85% of the time. The differences are statistically significant at the less than 1% level. To control for other factors that can influence whether a firm selects an inside or outside CEO successor we use logit regression models where the dependent variable is one if the firm hired an internal CEO and zero otherwise. In addition to the promotion method employed, the independent variables are lagged stock performance, the natural log of sales, CEO ownership, CEO age, outside director ownership, the percentage of independent directors, the homogeneity index and the Herfindahl index. All models have robust standard errors clustered by firm.

Table VIII model 1 reports results for the full sample. The coefficient estimate for the successor-incentive indicator is negative and significant, suggesting that successor-incentive firms are more likely to hire an internal CEO, presumably the chosen successor. We also find evidence consistent with other studies. Firms in more homogeneous industries and those with more independent directors are more likely to hire external CEOs (Parrino (1997) and Hermalin and Weisbach (1988)). Older CEOs are associated with a greater likelihood of an internal

succession, whereas greater CEO ownership is associated with a greater likelihood of an external succession. In model 2 we only consider firms that experience a CEO transition within our sample period and find similar results in this subsample. Better past performance is associated with a higher likelihood of an internal CEO replacement in firms experiencing a CEO transition.

We note that our results may be driven from the fact that all firms select a successor at some point, and a majority of new CEOs are internal (Cremers and Grinstein (2009)). To account for this possibility, in model 3 we exclude firm-year observations on the year of a CEO transition and the prior year. The dependent variable is one if the firm experiences an internal CEO succession in the subsequent two years. A successor-incentive structure remains associated with a greater likelihood that the firm will select an inside CEO.

In summary, firms' promotion incentives are associated with the likelihood of an internal or external CEO hire. Successor-incentive firms are more likely to hire internally and tournament-incentive firms are more likely to hire externally. Thus, tournament competitors can be viewed as effectively competing with external candidates as well.

6.0 Executive Promotions and Firm Value

Prior research suggests that tournament incentives are positively related to firm performance (e.g. Rose and Shepard (1997) and Kale et al. (2009)). We extend this literature using our classification method and study the relation between the selected managerial promotion method and Tobins'Q.[12] We use the industry adjusted natural logarithm of Tobin's Q as the dependent variable to reduce the effects of skewness and industry differences. The key

[12] Tobin's Q is the market value of equity plus the book value of assets minus the book value of equity, all divided by total assets.

independent variable is a binary variable that equals one for successor-incentive firms and zero for tournament-incentive firms. We use control variables based on the vast literature on the "determinants" of Q to isolate the effect of the promotion incentive (e.g. see Hermalin and Weisbach (2003) survey). The control variables are the natural logarithm of firm assets, the natural logarithm of firm age, the number of business segments in the firm, firm leverage, operating performance (ROA), the level of research and development, capital expenditures, intangible assets, and the percentage of outside directors. In addition, we also control for the percent equity compensation of the contenders to account for the different compensation incentives in the alternative promotion methods as presented in Table V. We also include the young CEO indicator variable. We exclude finance and utility firms because of the likelihood of regulations influencing governance and performance, though the results are qualitatively the same when including these firms. We use robust standard errors clustered by firms and include year and industry dummies in all regressions.

Table IX shows the results of this analysis. The successor-incentive coefficient is negative and significant in model 1, indicating that the industry adjusted Tobin's Q ratio for firms with a single CEO contender is about 2.2% lower than those with tournament incentives. However, these initial results do not necessarily imply that a successor-incentive structure causes lower firm valuation.

The results in Table VI clearly indicate that firm and industry characteristics are associated with the choice of insider promotion method. If these characteristics are also associated with firm value, then this will bias the results in Model 1. To account for this endogenous self-selection, we estimate a two-equation treatment model using Maximum Likelihood Estimation (MLE). The first equation is the selection equation from Table VI model

3. The second equation is the outcome equation estimated in model 1 of Table IX. The self-selection is accounted for with the correlation, ρ, between the error terms of the two equations. If the correlation coefficient estimate is significantly different from zero, then endogenous self-selection exists between the two equations and we must consider both selection and treatment effects. We use industry homogeneity to instrument for the likelihood of a firm having a successor-incentive structure. Table VI shows that industry homogeneity is significantly related to a firm's choice of successor-incentive structure, yet, since our outcome variable is industry adjusted, the homogeneity index for a given industry is not likely related to the industry-adjusted valuation other than through the promotion method choice. The outcome equation estimates and the estimate of ρ are reported in model 2 of Table IX.

The first interesting finding is that the coefficient estimate for ρ is negative and a Wald test of the exogeneity is rejected, implying a negative selection effect. In other words, firms that are likely to employ a successor-incentive structure are associated with a lower valuation, which creates a downward bias on the indicator for successor-incentive firms in the OLS regression, and is consistent with these firms being more unique, volatile and complex. The second interesting finding in model 2 is the positive and significant coefficient estimate for successor-incentive firms reflecting a positive treatment effect. Without controlling for the firm decision to have a successor-incentive structure, the observed relation between a successor-incentive promotion and firm value reveals the total effect due to selection and treatment. Here, the net effect of treatment and selection results in a net negative association between successor-incentive firms and value in the OLS regression. However, the positive treatment effect of a successor-incentive promotion in model 2, after controlling for selection, reveals that having a successor is

better than maintaining a tournament for firms that are prone to having a successor-incentive structure. This can be due to the greater human capital required to develop a CEO replacement.

In model 3 we report results from a two-stage least squares model as an alternative method of accounting for endogenous relations, although it does not account for self-selection. Model 3 of Table VI is used to predict the likelihood of a firm having a successor-incentive structure and the predicted values are then used to instrument for successor-incentive firms. The estimated coefficient for successor-incentive firms, which contains both the selection effect and the treatment effect, is not significant. This result underscores the importance of accounting for a firm's promotion method choice, as in model 2.

In summary, the results in Table IX reveal the importance of controlling for promotion method self-selection in firm value analysis and that one promotion method is not optimal for all firms. For example, forcing a firm with greater firm-specific human capital requirements for the CEO position to maintain tournament incentives and not select an heir early can result in an inefficient succession and consequently have a negative effect on firm value.

7. Robustness Tests

We perform a number of unreported tests to check the robustness of our results, which are available upon request. While the two methods of insider promotion studied in our paper may suggest two alternative organizational structures in the promotion processes, it is important to note that they also represent two different points in the succession timeline. Companies implementing tournament incentives, for example, will appoint a single successor as the CEO nears retirement. Our methodology ranks managers in each year of the sample and thus adjusts for changes in the promotion method used by firms. However, re-estimating the promotion

method each year may introduce noise. To account for this possible noise, we re-run the tests excluding the years in which companies switch from a tournament-incentive to a successor-incentive and vice-versa and the results are qualitatively the same.

One of the benefits to our method is that it does not rely on firms identifying whether they have a tournament or a single-successor promotion plan. This is important because most companies only announce their winning candidate and they do not disclose other contestant names. However, companies may need to adjust their promotion plan in the years following a CEO transition. Thus, applying our method during CEO transition years could increase measurement noise and potentially bias the results if these years are associated with lower firm value. We address this concern by re-examining the results while excluding CEO turnover years, which represent 11.6% of the sample firm-years. Eliminating these firm-year observations produces similar results and in some cases actually leads to slightly stronger results.

Finally, we also classified firms using an alternative method that abstracts from executive titles and identifies the insider promotion method by focusing only on insiders' board presence and their relative total pay.[13] The results, which were reported in earlier drafts but are excluded here for brevity, are qualitatively similar to those using our primary identification method.

8. Conclusion

[13] We start with all the eligible executives with a seat on the board. All of these executives within 10% of the highest compensated executive on the board are considered tournament competitors. Next, if no eligible executive is on the board then the highest compensated eligible executive and others within 10% of the highest paid are tournament competitors. Therefore, a successor-incentive firm is one where 1) only one executive other than the CEO sits on the board or, 2) multiple executives sit on the board, but one is much higher paid than the rest or 3) no executives other than the CEO have a board set and one executive receives significantly higher pay than all other executives.

Current managerial promotion studies do not compare different promotion plans. Instead, they focus on one promotion type and rely on broad measures of incentives across firms, which can result in measurement error. We develop a method for implicitly determining the internal promotion of senior managers to the CEO position and study the effects of the promotion method on senior management incentive pay, CEO succession and firm valuation. We classify firm promotion methods as either a successor-incentive promotion (single designated senior manager) or a tournament-incentive promotion (multiple managers competing for the CEO position).

Consistent with tournament theory, we find the gap in compensation between the CEO and the CEO contenders is higher in tournament-incentive firms. In addition, successor-incentive firms compensate for the lack of competition incentives among managers with a higher portion of equity pay to the CEO contender.

We find that a majority of firms have a successor-incentive promotion structure, which suggests tournament incentives may not be as prevalent as once thought and makes distinguishing between the promotion structures employed by firms an important first step to incentive analysis. CEO succession planning and the promotion of managers is an important firm choice, and is affected by the demand for CEOs and the supply of qualified CEOs, which hinges on the degree of firm-specific human capital required to lead the firm. Our findings also reveal insights into the CEO succession process. Specifically, firms selecting a successor-incentive promotion structure due to their firm-specific requirements are associated with CEO turnover that is less sensitive to performance. This result suggests that weaker performance sensitivity in CEO turnover may not always reflect weaker governance, but may instead reflect the greater time required to successfully transfer firm-specific knowledge from the incumbent to the successor. Relatedly, firms for which a successor incentive structure is optimal are more likely to

hire an insider CEO rather than an outsider due to the greater investment by the firm into developing the successor.

Finally, controlling for the selection of a promotion method is important when studying firm value. We find that firms that are more likely to select a successor-incentive structure are associated with lower firm value, perhaps due to their complexity and the greater importance of firm-specific human capital required of their CEO. However, after controlling for selection, we find that having a successor-incentive promotion structure in place is associated with higher firm value. For these firms, having extensive time for the CEO to transfer critical firm-specific human capital to the successor is important. However, for other firms, where firm-specific human capital is not as critical, maintaining tournament incentives is more valuable.

These results provide important guidelines for future research on promotion incentives. Specifically, the finding that not all firms are always conducting a tournament will help future research to more precisely use measures of tournament incentives only on those firms actively maintaining a tournament. This distinction has important implications for analysis of several governance mechanisms and internal management incentives. Overall, we conclude that CEO promotion decisions are specific to each firm and industry and they impact internal government mechanisms such as managerial pay and CEO replacement decisions.

Acknowledgements:

We thank an anonymous referee, Randy Beavers, Audra Boone, Sylvain Bourjade (discussant), John Easterwood, Mara Faccio, Daniel Ferreira (discussant), Laura Field, Paolo Fulghieri, Kose John, Jonathan Karpoff, Simi Kedia, Charles Knoeber, Ronald Masulis, Rob Nash, Lalitha Naveen (discussant), Jeffry Netter (the editor), NR Prabhala, Raymond da Silva Rosa, Ya-wen Yang, Xuejing Xing (discussant), David Yermack and seminar participants at Vanderbilt University, Virginia Tech, Wake Forest University, the University of North Carolina, North Carolina State University, New University of Lisbon, the American Law and Economics Association Meeting, Financial Management Association Meeting, European Finance Association Meeting, Toulouse Business School meeting on corporate governance, and New York University meeting on issues in executive compensation for helpful comments.

References:

Acharya, V., Myers, S., Rajan, R., 2011. The internal governance of firms. J. Finance 66, 689-720.

Adams, R., Almeida, H., Ferreira, D., 2005. Powerful CEOs and their impact on corporate performance. Rev. Financ. Stud. 18, 1403-1432.

Agrawal, A., Knoeber, C., Tsoulouhas, T., 2006. Are outsiders handicapped in CEO successions? J. Corp. Finance 12, 619-644.

Ai, C., Norton, E.C., 2003. Interaction terms in logit and probit models. Econ. Lett. 80, 123-129.

Baker, G., Gibbs, M., Holmström, B., 1994. The internal economics of the firm: Evidence from panel data. Q. J. Econ. 109, 881-919.

Baker, G. P., Jensen, M., Murphy, K., 1988. Compensation and incentive: practice vs. theory. J. Finance 43 (3), July 1988, 593-616.

Bebchuk, L., Grinstein, Y., 2005. The growth of executive pay. Oxf. Rev. Econ. Policy. 21, 283-303.

Bebchuk, L, Cremers, M., Peyer, U., 2011. The CEO pay slice. J. Financ. Econ. 102, 199-221.

Becker, B., 2006. Wealth and executive compensation. J. Finance 61, 379-397.

Becker, G., 1964. Human Capital. Univ. of Chic. Press. Chicago.

Bertrand, M., 2009. CEOs. *Annu. Rev. Econ.* 1, 1-29.

Bognanno, M., 2001. Corporate tournaments. J. Labor Econ. 19, 290-315.

Boyer, M. M., Ortiz-Molina, H., 2008. Career concerns of top executives, managerial ownership and CEO succession. Corp. Gov.: An Int.Rev. 16, 178-193.

Burns, N., Minnick, K., Starks, L., 2012. CEO Tournaments: A Cross-Country Analysis of Causes, Cultural Influences and Consequences. Unpublished University of Texas Working Paper.

Cannella, A. A., Shen, W., 2001. So close and yet so far: promotion incentives versus exit for CEO heirs apparent. Acad. Manag. J., 44, 252-270.

Cichello, M., Fee, C. E., Hadlock, C.J., Sonti, R., 2009. Promotions, turnover, and performance evaluation: evidence from the careers of division managers. Account. Rev. 84, 1119-1143.

Cremers, M., Grinstein, Y., 2009. The market for CEO talent: implications for CEO compensation. Unpublished Working Paper. Yale School of Management.

Dyck, Alexander, Adair Morse, and Luigi Zingales, 2010. Who blows the whistle on corporate fraud? J. Finance 65, 2213-2253.

Fama, E., French, K., 1997. Industry costs of equity. J. Financ. Econ. 43, 153-193.

Fama, E., Jensen, M., 1983. Separation of ownership and control. J. Law Econ. 26, 301-325.

Fee, C., Hadlock, C., 2003. Raids, rewards, and reputations in the market for managerial talent. Rev. Financ. Stud., Vol. 16, 1315-1357.

Fich, E. M., Shivdasani, A., 2006. Are busy boards effective monitors? J. Finance, 61, 689-724.

Gibbons, R., Murphy, K.,1992. Optimal incentives contracts in the presence of career concerns: theory and evidence. J. Pol. Econ. Vol. 100, 469-505.

Gibbs, M., 1995. Incentive compensation in a corporate hierarchy. J. Account. Econ. 19, 247-277.

Hermalin, B., Weisbach, M., 1988. The determinants of board composition. RAND J. Econ. 19, 589-606.

Hermalin, B., Weisbach, M., 1998. Endogenously chosen board of directors and their monitoring of the CEO. Am. Econ. Rev. 88, 96-118.

Hermalin, B., Weisbach, M., 2003. Boards of directors as an endogenously determined institution: a survey of the economic literature. Federal Reserv. Bank N. Y. Econ. Pol. Rev. Issue Apr,7-26.

Huson, M., Malatesta, P., Parrino R., 2004. Managerial succession and firm performance. J. Financ. Econ. 74, 237-275.

Huson, M., Parrino, R. Starks, L., 2001. Internal monitoring mechanisms and CEO turnover: a long-term perspective. J. Finance, 56, 2265-2297.

Kale, J., Reis, E., Venkateswaran, A., 2009. Rank order tournaments and incentive alignment: the effect on firm performance. J. Finance, 64, 1479-1512.

Kini, O., Williams, R., 2012. Tournament incentives, firm risk, and corporate policies. J. Financ. Econ. 103, 350-376.

Lazear, E., Rosen, S., 1981. Rank-order tournaments as optimum labor contracts. J. Pol. Econ. 89, 841-864.

Leonard, J., Executive pay and firm performance, Ind. Labor Relat. Rev. 43, Special Issue February 1990. 13S-29S.

Masulis, R.W., Mobbs, H.S., 2011. Are all inside directors the same? Evidence from the external directorship market. J. Finance, 66, 823-872.

Mehran, H., 1995. Executive compensation structure, ownership, and firm performance. J. Financ. Econ. 38, 163-184.

Mobbs, H.S., 2012., forthcoming. CEOs under Fire: The effects of competition on CEO turnover and compensation. J. Financ. Quant Anal.

Murphy, K. J., 1985. Corporate performance and managerial remuneration: An empirical analysis. J. Account. Econ. 7, 11-42.

Naveen, L., 2006. Organizational complexity and succession planning. J. Financ. Quant Anal. 41, 661-683.

Parrino, R., 1997. CEO turnover and outside succession: A cross-sectional analysis. J. Financ. Econ. 46, 165-197.

Petersen, M., 2009. Estimating standard errors in finance panel data sets: Comparing approaches. Rev. Financ. Stud., 22, 435-480.

Powers, E. A., 2005. Interpreting logit regressions with interactive terms: An application to the management turnover literature. J. Corp. Finance, 11, 504-522.

Prendergast, C., 1999. The provision of incentive contracts. J. Econ. Lit. 37, 7-63.

Prendergast, C., 1993. The role of promotion in inducing specific human capital acquisition. Q. J. Econ. 108, 523-534.

Raheja, C., 2005. Determinants of board size and composition: A theory of corporate boards. J. Financ. Quant Anal. Vol. 40, 283-305.

Rose, N., Shepard, A., 1997. Firm diversification and CEO compensation: Managerial ability or executive entrenchment? RAND J. Econ. 28, 489-514.

Vancil, R., 1987. Passing the baton: Managing the process of CEO succession. Havard Bus. Sch. Press, Boston.

White, H., 1980. A heteroskedasticity-consistent covariance matrix estimator and a direct test of heteroskedasticity. Econom. 48, 817-838.

Wilcoxon, F., 1945. Individual comparisons by ranking methods. Biom. 1, 80-83.

Wulf, J., 2007. Authority, risk, and performance incentives: Evidence from division manager positions inside firms. J. Ind. Econ. 55, 19-196.

Figure 1. Succession-Incentive Firms in the Years Prior to a CEO Turnover

This figure presents the fraction of sample firms that are classified as Successor-Incentive in the years prior to a CEO transition. Internal Succession represents the fraction of sample firms that are classified as Successor-Incentive in the firm years prior to an internal CEO transition, where an internal transition is defined to be by an executive who was employed by the firm in the year prior to the transition. Internal Succession (2 Years) represents the fraction of sample firms that are classified as Successor-Incentive in the firm years prior to an internal CEO transition, where an internal transition is defined to be by an executive who has been employed by the firm for at least 2 years.

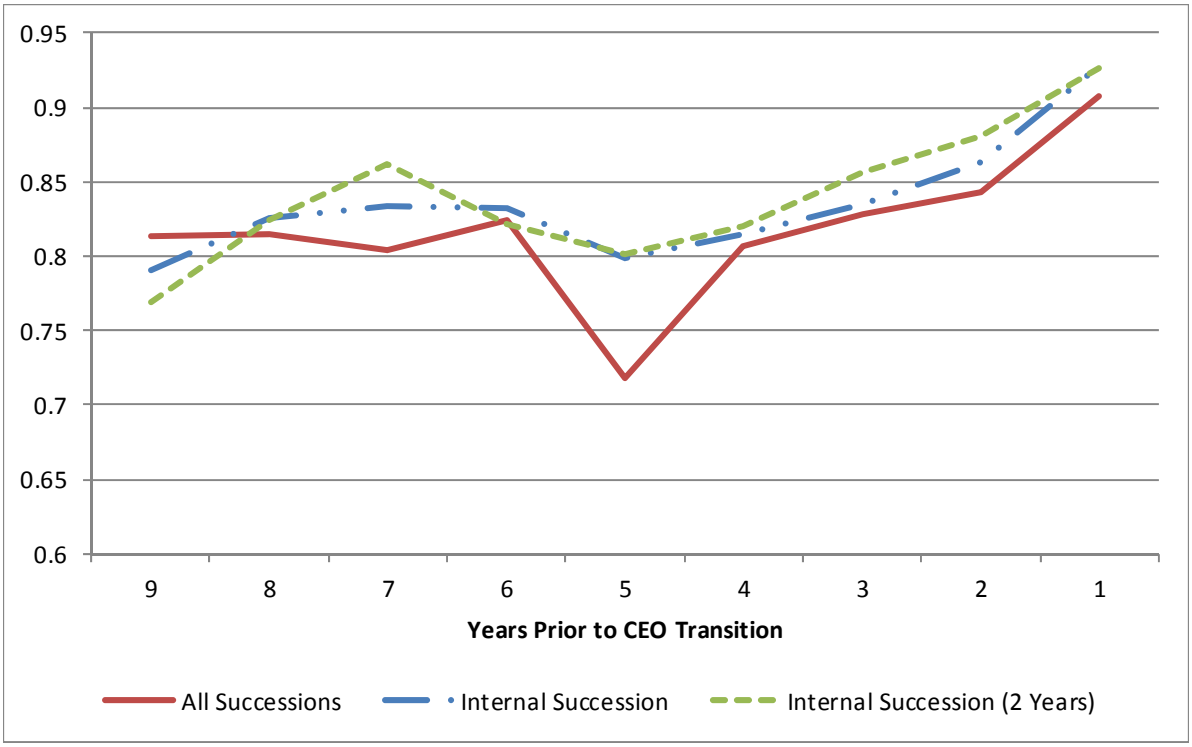

Table I. Ordered Logit Regressions on CEO Successors

This table presents the results of an ordered logit analysis on executives between 1997 and 2008 who become CEO two years later. The dependent variable is one if the executive becomes the CEO, minus one if there is a new CEO, other than the executive, selected from within the firm and zero if there is no CEO selected. *Compensation Qualified* is one if the executive is within 10% of the highest paid non-CEO executive in the firm. *Board Qualified* is one if the executive is a director of their firm. *COO* equals one if the executive has a reference of Chief Operating Officer in their title. *Ownership* is the percentage of shares owned by the executive. *Recent Hire* equals one if the executive was hired within the past two years. The standard errors are robust and clustered by executive. Year dummies are included. Panel B reports the predicted probabilities for the three outcomes for changes in the key explanatory variables. *, **, *** indicate significance at the 10%, 5%, and 1% levels respectively.

Panel A: Ordered Logit Regression with Dependent Variable: -1 if another executive is to become the CEO 0 if no executive is selected to be the CEO 1 if the executive is selected to be the CEO	Coefficient *(p-values)*
Compensation Qualified	1.208*** *(0)*
Board Qualified	1.351*** *(0)*
COO Title	0.505*** *(0)*
Ownership	0.045*** *(0.001)*
Recent Hire	0.126*** *(0)*
Prob(CEO Tournament Loser | X):	*0.1041*
Prob(CEO Tournament Continued Competitor | X):	*0.8653*
Prob(CEO Tournament Winner | X):	*0.0305*
Number of Observations	87924
Prob $>\chi^2$	0.0000
Psuedo-R^2	8.46%

Table I. (continued)

Panel B: Change in Predicted Probabilities

		No	Yes	Change	95% Confidence Interval for Change
Compensation Qualified					
	Prob(Lose)	0.1553	0.0521	-0.1033 (-66%)	[-0.1074, -0.0992]
	Prob(Continue)	0.8252	0.8854	0.0603 (7%)	[0.0572, 0.0633]
	Prob(Win)	0.0195	0.0625	0.043 (221%)	[0.0405, 0.0455]
Board Qualified					
	Prob(Lose)	0.1238	0.0353	-0.0885 (-71%)	[-0.0928, -0.0843]
	Prob(Continue)	0.8509	0.8737	0.0228 (3%)	[0.0181, 0.0275]
	Prob(Win)	0.0253	0.0909	0.0657 (259%)	[0.0578, 0.0736]
COO Title					
	Prob(Lose)	0.1087	0.0686	-0.0402 (-37%)	[-0.0462, -0.0342]
	Prob(Continue)	0.8621	0.8841	0.0219 (3%)	[0.0195, 0.0243]
	Prob(Win)	0.0291	0.0474	0.0183 (63%)	[0.0144, 0.0221]
Ownership (0% to 1%)					
	Prob(Lose)	0.1049	0.1007	-0.0042 (-4%)	[-0.0066, -0.0018]
	Prob(Continue)	0.8648	0.8676	0.0028 (0%)	[0.0012, 0.0044]
	Prob(Win)	0.0303	0.0317	0.0014 (5%)	[0.0006, 0.0022]
Recent Hire					
	Prob(Lose)	0.1054	0.0941	-0.0113 (-11%)	[-0.0171, -0.0056]
	Prob(Continue)	0.8644	0.8718	0.0074 (1%)	[0.0038, 0.0110]
	Prob(Win)	0.0301	0.0340	0.0039 (13%)	[0.0018, 0.0061]

Table II. Classification of Sample Firms as Tournament-Incentive or Successor-Incentive

The sample consists of 16,801 firm-years for fiscal years 1997 through 2008. Firms are classified as either tournament-incentive or successor-incentive firms based on the relative ranking of the top four non-CEO executives. Each non-CEO executive receives a score (called a propensity score based on the coefficients in Table I on the likelihood of the executive succeeding the CEO). Non-CEO executives are considered to be contenders to be the next CEO if their propensity score is within 10% of the highest score in their firm. If a firm only has one contender the firm is classified as successor-incentive. If the firm has multiple contenders the firm is classified as a tournament-incentive firm.

Panel A: Successor-Incentive versus Tournament-Incentive firms

	1997		1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		Total	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Successor-Incentive Firms	1210	82%	1237	84%	1221	85%	1189	81%	1113	80%	1151	82%	1143	82%	1147	82%	1069	78%	901	74%	1057	78%	1097	77%	13535	81%
Tournament-Incentive Firms	265	18%	229	16%	215	15%	279	19%	278	20%	255	18%	259	18%	250	18%	297	22%	314	26%	292	22%	333	23%	3266	19%
	1475		1466		1436		1468		1391		1406		1402		1397		1366		1215		1349		1430		16801	

Panel B: Number of Competitors for Tournament Firms

	1997		1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		Total	
# Competitors	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
2	188	71%	168	73%	167	78%	208	75%	204	73%	178	70%	179	69%	182	73%	212	71%	189	60%	187	64%	218	65%	2280	70%
3	63	24%	47	21%	35	16%	60	22%	52	19%	58	23%	64	25%	43	17%	56	19%	71	23%	65	22%	80	24%	694	21%
4	14	5%	14	6%	13	6%	11	4%	22	8%	19	7%	16	6%	25	10%	29	10%	54	17%	40	14%	35	11%	292	9%

Panel C: Contender Identifying Factors

	1997		1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		Total	
Firms with:	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Non-CEO Executive(s) on the Board	897	61%	869	59%	829	58%	665	45%	536	39%	531	38%	477	34%	435	31%	366	27%	293	24%	515	38%	457	32%	6870	41%
No non-CEO Executive on the Board	578	39%	597	41%	607	42%	803	55%	855	61%	875	62%	925	66%	962	69%	1000	73%	922	76%	834	62%	973	68%	9931	59%
At least one COO	537	36%	551	38%	547	38%	524	36%	497	36%	495	35%	511	36%	502	36%	486	36%	434	36%	505	37%	522	37%	6111	36%

Table III. Non-CEO Executive Promotions to CEO from 1999 to 2008

We identify internal successions within our sample firms by first searching for and identifying CEO promotions between 1999 and 2010 within the ExecuComp sample of firms. We then identify internal successions when the new CEO was also listed in the pool of eligible executives in ExecuComp 2 years prior to becoming CEO. We include all eligible executives as those not chairpersons and younger than 65 years old. If the successor came from the subset of eligible executives we identified as either a single top executive or tournament competitor we categorize them as a Successor Identified by Propensity Score Method. There are 1,436 cases of internal successions. These successors are identified two years prior to becoming the CEO and range from fiscal year 1997 to 2008. *Single-Executive* is one if the firm only has one executive identified by our method. *Tournament Competitor* is one if the chosen successor came from the pool of tournament competitors in firms classified as having tournaments by our method. *Chief Operating Officers* is one if the executive has a reference of COO in their title.

	Successors	% of Total Successions	% of Identified Successions
Internal CEO Successions	1436		
Successor Identified by Propensity Score Method	1130	79%	
Successor Identified as the top single executive	1008		89%
Successor Identified as tournament competitor	122		11%
Successor listed as Chief Operating Officer	577	40%	

Table IV. Descriptive Statistics

This table reports descriptive statistics for the 16,801 sample firm-years from 1997-2008. Firms are classified as either Tournament or Successor-Incentive firms based on the propensity score of the top four non-CEO executives. Each executive receives a score (called propensity score) based on the coefficients in Table I on the likelihood of the executive succeeding the CEO. Executives are considered to be contenders to be the next CEO if their propensity score is within 10% of the highest score in their firm. If a firm only has one contender the firm is classified as a successor-incentive firm. If the firm has multiple contenders the firm is classified as a tournament-incentive firm. *Assets* and *Sales* are from the annual database of Computstat and the number of *Employees* is from ExecuComp. *Business Segments* and *Geographic Segments* are the number of the respective type of segments for the firm. *Volatility* is the standard deviation of 3-year monthly stock returns. *Firm age* is the current year less the first year the firm appears in the CRSP database. *RD/Assets* is the maximum of Compustat data36 or zero scaled by total assets. *Leverage* is long-term debt plus debt in current liabilities all scaled by total assets. *Q* is approximated by summing total assets and market value of equity less the book value of equity all scaled by total assets. *Homogeneity Index* is the mean partial correlation proxy for industry similarity determined following the Parrino (1997) methodology with the Fama-French 49 industry definitions. *Herfindahl Index* is the sum of the squared percentage of industry sales of all industry firms. *CEO age* is from ExecuComp. *CEO tenure* is the number of years the CEO has served as CEO. *CEO % ownership* is the percentage of shares outstanding held by the CEO, including options. Board data are from Risk Metrics. *CEO is Chairperson* is an indicator if the CEO is also listed as the Chairperson. *Board size* is the total number of directors on the board. *Percent Independent Directors* is the percentage of independent outside directors on the board. *Outside Board % Ownership* is the percentage of shares, including options, held by all non-employee board members. *CEO total compensation* consists of salary, bonus, the Black-Scholes value of option grants, restricted stock grants, LTIP, and other annual compensation (Execucomp data item tdc1). *CEO % compensation gap* is the percentage difference from the highest paid non-CEO eligible executive compensation to that of the CEO. *Total Compensation* is the average compensation of the tournament competitors in those firms or the compensation of the top candidate in successor-incentive firms. *% Equity Compensation* is the percentage of total compensation that is equity based for the top candidate in successor-incentive firms and it is the average percentage of equity-based compensation of the tournament competitors in tournament firms. *% Gap Contenders – Mean Executives* is the percentage difference between the average compensation of the contenders and the average compensation of the remaining executive team. *% Gap Contenders – Min Executive* is the difference between the average compensation of the contenders and the minimum compensation of the remaining executive team. *% Gap 1-2(2-3)* is the percentage difference between the (second) highest paid and second (third) highest paid non-CEO executives in the firm. *, **, *** indicate significance at the 10%, 5%, and 1% levels respectively.

Table IV. Descriptive Statistics (continued)

Panel A	All Firm-Years		Tournament		Successor		T-S	
Observations	16,801		3266		13535			
Firm / Industry Characteristics	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Assets ($ millions)	13012	1745	13989	1773	12776	1735	1213	38
Sales ($ millions)	5228	1329	5352	1330	5198	1329	154	1
Business Segments	2.8	2.0	2.8	2.0	2.8	2.0	0	0
Geographic Segments	2.7	2.0	2.84	2.0	2.73	2.0	0.11***	0***
Volatility	0.116	0.102	0.111	0.098	0.117	0.103	-0.006***	-0.005***
Firm Age	23.2	17	24.7	20	22.8	17	1.9***	3***
RD / Assets	0.03	0.00	0.03	0.00	0.03	0.00	0	0***
Leverage	0.23	0.22	0.22	0.21	0.23	0.2	-0.01**	-0.01**
Tobin's Q	2.02	1.49	2.01	1.50	2.03	1.49	-0.02	0.01
Homogeneity Index	0.295	0.280	0.297	0.280	0.294	0.280	0.003**	0
Herfindahl Index	560	443	549	435	563	443	-14	-8

Panel B	All Firms		Tournament		Successor		T-S	
Manager / Board Characteristics	Mean	Median	Mean	Median	Mean	Median	Mean	Median
CEO Age	56	56	55	55	56	56	-0.39***	-1***
CEO Tenure as CEO	6.9	5.0	6.2	4	7.0	5	-0.89***	-1***
CEO % Ownership	2.2	0.0	1.9	0.0	2.3	0.0	-0.37***	0***
CEO is Chairperson	0.62	1.0	0.60	1	0.62	1	-0.02**	0**
Board Size	9.37	9	9.29	9	9.39	9	-0.1*	0
Percent Board Independence	68.3	71.4	71.24	75.00	67.63	70.00	3.61***	5***
Outside Directors % Ownership	3.8	0.63	3.1	0.60	3.9	0.64	-0.8**	-0.04
CEO Total Compensation ($1,000)	5375	2751	4967	2748.2	5474	2751	-508**	-3
CEO % Compensation Gap	114	79	159	128	103	68	56***	60***

Table IV. Descriptive Statistics (continued)

Panel C	All Firms		Tournament		Successor		T-S	
Tournament Contenders / SE	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Total Compensation ($1,000)	1920	1123	1727	1034	1966	1146	-239***	-112***
% Equity Compensation	34.13	32.46	29.90	27.24	35.15	33.79	-5.24***	-6.6***
% Gap Contenders - Mean Executives	31.3	17.2	35.4	18.3	30.5	17.0	4.9***	1.2***
% Gap Contenders - Min Executive	70.0	41.2	46.9	26.8	74.9	44.8	-28***	-18***
% Gap 1-2	26.1	21.4	6.6	4.3	30.9	27.2	-24***	-23***
% Gap 2-3	17.6	12.4	15.5	10.3	18.2	12.9	-2.6***	-3***

Table V. OLS Regressions of Executive Team Pay Structure

This table presents the results of regression analysis for measures of non-CEO executive compensation across the sample firms. *Successor-Incentive Firm* is an indicator variable that equals one if the firm is classified as having successor incentives and zero if it is classified as having tournament incentives. The dependent variable in model 1 is the average % Equity Compensation for the executives competing in the tournament or the top executive for each firm. The dependent variable in model 2 is the pay gap within the executive team measured as the highest total compensation among the executives minus the minimum total compensation of the executives, scaled by the highest compensation. *Market-to-Book* is the current year market value of equity plus the book value of assets less the book value of equity all over yearend total assets. *ROA* is net income before depreciation and amortization, interest and taxes over beginning year total assets. *Stock Return* is the monthly compounded annual stock return for the fiscal year. All other variables are as described earlier. We use robust standard errors to account for cross-sectional heterskedasticity (White (1980)) and cluster by firm to account for serial correlation. *, **, *** indicate significance at the 10%, 5%, and 1% levels respectively.

Table V. *(continued)*

Contender Compensation Structure	Model 1 % Equity Comp	Model 2 Highest-Min Exec Team
Successor Incentive Firm (Altnerative Method)	3.046*** *(0)*	17.87*** *(0)*
Controls		
CEO Tenure	0.14 *(0.198)*	-0.01 *(0.912)*
CEO Tenure^2	-0.006* *(0.082)*	0.002 *(0.634)*
CEO Chair	0.8 *(0.224)*	-1.9*** *(0.002)*
CEO % Ownership	-0.286*** *(0)*	0.13** *(0.034)*
Percentage Independent Directors	0.051** *(0.031)*	-0.08*** *(0)*
Ln(Board Size)	-3.12** *(0.026)*	-0.65 *(0.646)*
Outside Director % Ownership	-0.001 *(0.965)*	-0.003 *(0.745)*
Ln(Sales)	3.307*** *(0)*	1.553*** *(0)*
Market-to-Book$_{(t-1)}$	1.4*** *(0)*	0.6*** *(0.009)*
ROA	-17.325*** *(0)*	-3.555 *(0.329)*
ROA$_{(t-1)}$	18.765*** *(0)*	-2.093 *(0.519)*
Stock Return	1.76*** *(0.002)*	-0.36 *(0.415)*
Stock Return$_{(t-1)}$	0.793 *(0.14)*	-0.346 *(0.401)*
Volatility	73.659*** *(0)*	34.922*** *(0)*
Ln(Firm Age)	-1.844*** *(0)*	-1.072** *(0.016)*
Number of Business Segments	-0.375** *(0.011)*	0.11 *(0.428)*
R&D/Assets	28.369*** *(0.001)*	-1.19 *(0.857)*
Constant	16.854*** *(0.007)*	35.922*** *(0)*
Industry/Year Controls	yes	yes
Number of Observations	9339	8154
Adjusted-R^2	53.76%	20.73%

Table VI. Determinants of Successor Incentive Firms

This table presents the results of logit regression analysis of firms selecting to have successor-incentives. The dependent variable is one if the firm is classified as a Successor-Incentive firm and zero otherwise. Marginal effects are listed to the right of each coefficient estimate. *Service Industry* is an indicator variable that equals one for Fama-French Industry codes 7, 11, 33, 34 and 44 and zero otherwise. *Manufacturing* is an indicator variable that equals one for industries with Fama-French Industry codes 2-5, 8-10, 12-17, 19-26, 35, or 37-40 and zero otherwise. *Young CEO* is an indicator variable that equals one if the current CEO is younger than 60. All other variables are as described previously. All models include year dummies. Standard errors are robust to account for cross-sectional heterskedasticity (White (1980)) and clustered by firm to account for serial correlation. *, **, *** indicate significance at the 10%, 5%, and 1% levels respectively.

	Model 1		Model 2		Model 3	
	Successor-Incentive		Successor-Incentive		Successor-Incentive	
	Coefficient *(p-values)*	dy/dx	Coefficient *(p-values)*	dy/dx	Coefficient *(p-values)*	dy/dx
Ln(Assets)	0.016 *(0.433)*	*0.003*	0.018 *(0.347)*	*0.003*	0.030 *(0.161)*	*0.005*
Ln(Number of Business Segments)	0.022 *(0.574)*	*0.003*			0.001 *(0.985)*	*0.000*
Ln(Firm Age +1)	-0.052 *(0.167)*	*-0.008*			-0.036 *(0.356)*	*-0.006*
Service Indusry	0.325*** *(0.002)*	*0.046*			0.272** *(0.013)*	*0.039*
Volatility	1.472** *(0.012)*	*0.228*			1.25** *(0.032)*	*0.192*
Manufacturing	-0.187*** *(0.003)*	*-0.029*			-0.277*** *(0)*	*-0.043*
Young CEO			-0.19*** *(0.002)*	*-0.029*	-0.223*** *(0)*	*-0.033*
CEO Tenure			0.017* *(0.056)*	*0.003*	0.017* *(0.05)*	*0.003*
CEO Tenure^2			-0.0002 *(0.604)*	*0.000*	-0.0002 *(0.53)*	*0.000*
CEO Ownership (%)			0.008 *(0.236)*	*0.001*	0.005 *(0.447)*	*0.001*
CEO Chair			-0.020 *(0.727)*	*-0.003*	-0.006 *(0.923)*	*-0.001*
Homogeneity Index			-0.897** *(0.048)*	*-0.139*	-1.207** *(0.014)*	*-0.186*
Herfindahl Index			0.00005 *(0.276)*	*0.000*	0.0001** *(0.049)*	*0.00001*
Number of Observations	16768		15829		15806	
Pseudo R^2	1.04%		0.95%		1.51%	
Probability(Successor-Incentive Firm)		0.8089		0.8084		0.8101

Table VII. Logit Regressions on CEO Turnover

This table presents the results from logit regressions on CEO turnover for the sample firm-year observations. There are 1,878 observations of new CEOs within our sample. The dependent variable equals one if CEO turnover occurs during the year. *Successor-Incentive Firm* is an indicator variable that equals one if the firm is classified as having successor incentives and zero if it is classified as having tournament incentives. Executives are considered to be contenders to be the next CEO if their propensity score is within 10% of the highest score in their firm. *CEO Age* is age of the prior CEO. All other variables are as described earlier. Standard errors are robust to heteroskedasticity (White (1980)). *, **, *** indicate significance at the 10%, 5%, and 1% levels respectively.

	CEO Turnover
	Coefficient *(p-values)*
Successor-Incentive Firm $_{(t-1)}$	0.879***
	(0)
Change in ROA $_{(t-2 \text{ to } t-1)}$	-1.352*
	(0.081)
Single-Exec Firm$_{(t-1)}$ X Change in ROA$_{(t-2 \text{ to } t-1)}$	1.426*
	(0.066)
Controls	
Ln(Sales)$_{(t-1)}$	-0.036
	(0.183)
CEO Ownership$_{(t-1)}$	-0.031***
	(0)
CEO Age$_{(t-1)}$	0.0788***
	(0)
Outside Director Ownership$_{(t-1)}$	0.003
	(0.187)
Percent Independent Directors$_{(t-1)}$	-0.0043*
	(0.058)
F-Test: Change ROA X (1+ Single-Exec) = 0	0.074***
	(0)
Prob(CEO Turnover)	*0.079*
Number of Observations	9357
Pseudo R^2 / Prob>χ^2	6.1%

Table VIII. Internal CEO Successions

This table presents the results from logit regressions on Internal CEO succession for the sample firm-year observations. The dependent variable in models 1 and 2 equals one if a new CEO was appointed during the year and the CEO is from within the firm. Model 1 uses the full sample and model 2 uses only the sub-sample of firms experiencing a CEO turnover. The dependent variable in model 3 is one if the firm has a new CEO in the subsequent two years and firm years prior to and of a new CEO are excluded. *Successor-Incentive Firm* is an indicator variable that equals one if the firm is classified as having successor incentives and zero if it is classified as having tournament incentives. All other variables are as described earlier. Standard errors are robust to heteroskedasticity (White (1980)) and clustered by firm. *, **, *** indicate significance at the 10%, 5%, and 1% levels respectively.

	Model 1 Internal CEO Turnover	Model 2 Internal CEO Turnover	Model 3 Internal CEO Turnover
	Coefficient *(p-values)*	Coefficient *(p-values)*	Coefficient *(p-values)*
Successor-Incentive Firm $_{(t-1)}$	1.044*** *(0)*	0.633** *(0.029)*	0.343*** *(0.006)*
Controls			
Stock Return $_{(t-1)}$	0.031 *(0.692)*	0.901*** *(0)*	-0.093 *(0.35)*
Ln(Sales)$_{(t-1)}$	0.027 *(0.372)*	0.228*** *(0.003)*	0.071** *(0.049)*
CEO Ownership$_{(t-1)}$	-0.032*** *(0.001)*	-0.005 *(0.783)*	-0.024** *(0.036)*
CEO Age$_{(t-1)}$	0.084*** *(0)*	0.03** *(0.021)*	0.079*** *(0)*
Outside Director Ownership$_{(t-1)}$	0.0037 *(0.159)*	0.0079 *(0.497)*	0.0001 *(0.992)*
Percent Independent Directors$_{(t-1)}$	-0.007*** *(0.003)*	-0.027*** *(0)*	0.007** *(0.02)*
Homogeneity Index$_{(t-1)}$	-1.4937** *(0.034)*	1.5642 *(0.378)*	-0.1209 *(0.865)*
Herfindahl Index$_{(t-1)}$	0.0001 *(0.28)*	0.0001 *(0.245)*	0.00015** *(0.011)*
Prob(Internal CEO Succession)	*0.061*	*0.868*	*0.095*
Number of Observations	9347	866	5296
Pseudo R^2 / Prob>χ^2	7.8%	9.5%	5.6%

Table IX. Tobin's Q

This table presents the results from performance regressions. The dependent variable is the industry adjusted natural logarithm of Tobin's Q, which is measured by total assets plus the difference in the market value of equity and the book value of equity all normalized by the total assets at the end of the year. *Successor-Incentive Firm* is an indicator variable that equals one if the firm is classified as having successor incentives and zero if it is classified as having tournament incentives. *Capital Expenditure/Sales* is capital expenditure scaled by total sales ($ millions). *R&D Missing Dummy* equals 1 if R&D is missing. *Intangibles* equals one minus PPE scaled by total assets. All other variables are as described earlier. Finance and utility firms are excluded. Model 1 reports results from an OLS regression. Model 2 reports the outcome equation of a two-equation treatment model. The self-selection equation is the specification in Model 3 of Table VI, where the dependent variable is one for firms selecting to have a Successor-Incentive. ρ is the correlation coefficient between for the error terms of the two equations and represents the selection effect. The Wald test for endogeneity ($\rho \neq 0$) is reported at the bottom of the table. Model 3 reports results from a 2 SLS estimation where the first stage equation is that of Model 3 in Table VI and the predicted likelihood of a firm being Successor-Incentive is used as an instrument in the performance equation. We use robust standard errors to account for cross-sectional heteroskedasticity (White (1980)) and cluster by firm to account for serial correlation. All models include year and industry fixed-effects. *, **, *** indicate significance at the 10%, 5%, and 1% levels respectively.

Table IX. (continued)

	Model 1 Ln(Tobin's Q)	Model 2 Ln(Tobin's Q)	Model 3 Ln(Tobin's Q)
	Coefficient *(p-values)*	Coefficient *(p-values)*	Coefficient *(p-values)*
Successor-Incentive Firm	-0.022** *(0.029)*	0.226** *(0.011)*	0.01 *(0.977)*
Controls			
Young CEO	0.021** *(0.045)*	0.026** *(0.031)*	0.018 *(0.252)*
% Equity Compensation of Contenders	0.002*** *(0)*	0.002*** *(0)*	0.002*** *(0)*
Percent Outside Directors	-0.002** *(0.017)*	-0.001* *(0.071)*	-0.001 *(0.357)*
Ln(Assets)	0.008 *(0.171)*	0.011* *(0.078)*	0.012* *(0.075)*
Ln(Firm Age)	-0.0146 *(0.113)*	-0.0051 *(0.623)*	-0.0091 *(0.378)*
Number of Business Segments	-0.017*** *(0)*	-0.012*** *(0)*	-0.013*** *(0)*
Leverage	-0.338*** *(0)*	-0.267*** *(0)*	-0.272*** *(0)*
ROA	2.001*** *(0)*	1.919*** *(0)*	1.913*** *(0)*
$ROA_{(t-1)}$	-0.408*** *(0)*	-0.393*** *(0)*	-0.39*** *(0)*
Capital Expenditure / Sales	0.007*** *(0)*	0.006*** *(0)*	0.006*** *(0)*
R&D / Assets	2.086*** *(0)*	1.282*** *(0)*	1.264*** *(0)*
R&D Missing Dummy	-0.05*** *(0.006)*	0.005 *(0.755)*	0.008 *(0.675)*
Intangibles / Assets	0.277*** *(0)*	0.086** *(0.016)*	0.083** *(0.042)*
ρ *p* -value for Wald Test of ρ=0		-0.345*** *(0.007)*	
Industry/year controls	yes	yes	yes
Number of Observations	13137	12491	12491
Adjusted-R^2 \ Prob>χ^2	31.76%	0.00%	27.25%