



Entrenchment, governance, and the stock price reaction to sudden executive deaths

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ABSTRACT

To study managerial entrenchment, I use the stock price reaction to unexpected senior executive deaths. If a highly effective manager dies unexpectedly, the stock price reaction should be negative. If, however, death removes an entrenched manager when the board would or could not, the stock price reaction should be positive. While, individually, age and tenure only weakly correlate with the stock price reaction to a sudden death, the reaction is strongly positive (6.8%) if: (1) the executive's tenure exceeds 10 years, and (2) abnormal stock returns over the last three years are negative.

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1. Introduction

Research on managerial entrenchment is quickly gaining attention because of its implications for corporate governance. For example, Shleifer and Vishny (1989) point out that entrenched managers often extract higher wages and larger perquisites from shareholders, and obtain more latitude in determining corporate strategy. In addition, entrenched managers sometimes block takeovers because they know managers are often removed after a firm is taken over (Shivdasani (1993)). A deficit in the entrenchment literature is that it generally takes for granted the identification of entrenched managers. While, Berger et al. (1997), Yermack (2006) and Bebchuk et al. (2009) and others use executive age, tenure, and anti-takeover provisions to proxy for entrenchment, the literature does not show how well these measures identify entrenched managers. Furthermore, the literature has found weaknesses in the currently used entrenchment proxies. For example, Norburn and Birley (1988) argue that age and tenure can also proxy for valuable experience and Johnson et al. (2006) show that that firms with many anti-takeover provisions perform just as well as firms with few anti-takeover provisions after controlling for industry clustering.

To overcome the shortcomings in the entrenchment literature, I use the stock price reaction to 195 unexpected senior executive (CEO, chairman, and/or president) deaths over the 1972–2008 per-

iod to identify entrenched executives. The stock price reaction to the sudden death of an effective non-entrenched manager should be negative if she will be difficult to replace and zero if easily replaced. On the other hand, if death removes an entrenched manager when the board would or could not, the stock price reaction should be positive. Unexpected executive deaths, such as those due to heart attacks or accidents, are ideal experiments to measure entrenchment for several reasons. First, it is hard to imagine a clearer sign that the executive was entrenched than a positive stock market reaction to his or her death. A strong positive stock action reveals that stockholders are glad to see the executive removed, implying that the board should have removed the executive earlier. Second, since the removal of the executive is neither a choice of the executive nor the firm, the sample of sudden executive deaths is free of endogeneity, an all too common problem in corporate governance studies. Third, since I restrict the sample to unexpected deaths, it is very unlikely that news of the event leaked before the death.

Clearly, identifying entrenched executives after they die is not very useful. The next step in the study is to then find possible measures that can help identify entrenched managers among firms at large, i.e., not confined to firms that lost executives solely due to deaths. To the best of my knowledge, this study is the first to analyze whether entrenchment proxies used in the literature correlate with true entrenchment. I first find that the stock price reaction to the death is only weakly related to age and tenure. In fact, I show that older, more tenured managers perform better than their younger counterparts. The stock price reaction to sudden executive

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deaths is particularly strongly positive if the firm has performed poorly and the executive has a long tenure.¹ Among those firms with: (1) a negative three-year market model alpha, and (2) executive tenure greater than 10 years, the average stock market reaction is +6.8%. Hence, this paper proposes a combination of tenure and poor performance as a proxy for entrenchment. Outside the sudden executive deaths sample, I show that the negative of the interaction of tenure and past performance identifies firms with more executive power and worse corporate governance better than proxies currently used in the literature.

A second major goal of the study is to examine the extent to which proposed good governance practices are able to prevent managerial entrenchment. Throughout the paper, I use the proportion of outsiders in the board of directors, board size, and a dummy variable indicating that the board is staggered as proxies for corporate governance quality.² Here the results are mixed. Multivariate tests indicate that managers are more likely to be entrenched, as evidenced by a positive reaction to their death, if boards are populated with few outsiders. All else equal, increasing the percentage of outsiders on the board from 40% to 70% lowers the reaction to the death announcement by an estimated 270 basis points. Powerful boards tend to have good corporate governance, but board power does not directly seem to prevent executive entrenchment. I conclude that proposed good governance practices, particularly a high percentage of outside directors in the board, are helpful but not always effective in preventing managerial entrenchment.

A somewhat related issue is the relationship between founder-executives, entrenchment, and firm value. On the one hand, founder-executives tend to have knowledge that is valuable to the firm. On the other hand, they may be uniquely able to entrench themselves and unwilling to step down once their effectiveness deteriorates. Morck et al. (1988), Palia and Ravid (2008), Anderson and Reeb (2003), Adams et al. (2009), Fahlenbrach (2008) and Villalonga and Amit (2006) find that firms with founder-executives perform well. However, Adams et al. (2009) point out that studying the relationship between founders and performance is difficult because the relationship may be endogenous – a problem mitigated by my use of the stock price reaction to executive deaths. Findings in this paper support Schwert's (1985) view that some founders are often uniquely talented and hard to replace, while others often become entrenched. Results in this paper suggest that founder executives are either very valuable or very-entrenched.

Finally, the sample of sudden executive deaths enables me to study the relationship between takeover threats and corporate governance. Jensen (1988) and Scharfstein (1988) propose the takeover market as a form of external corporate governance. Alternatively, Shivdasani (1993) points out that executives with large ownership stakes may be able to prevent takeovers. In addition, Martin and McConnell (1991) and Denis and Serrano (1996) show that the likelihood of forced turnover increases after a firm is taken over. Thus, some managers may block takeovers in order to keep their jobs. Therefore, takeover prevention is another cost that accrues to shareholders as a result of entrenchment. My results show that the stock price reaction to sudden executive deaths is more positive for firms that the media identified as takeover targets before the executive death, which suggests that investors view executive death as the removal of a takeover obstacle.

This study complements the executive deaths literature. Etebari et al. (1987) find a negative average reaction to forty-eight sudden

executive deaths. Johnson et al. (1985) use fifty-three announcements of unexpected executive deaths to show that the stock price reaction to sudden deaths is a function of executive characteristics, including age, tenure, and expected replacement costs. Johnson et al. (1985) also find that the executive status of founders is a significant determinant of the positive abnormal returns surrounding turnover. Worrell et al. (1986) analyze 127 announcements of executive deaths and find that abnormal returns are significantly negative when the CEO dies but positive when the chairman of the board dies. More recently, Borokhovich et al. (2005) use a sample of 161 executive deaths³ to document a positive relationship between ownership and abnormal returns when managers own less than 20% of the stock.

The remainder of the paper is organized as follows: Section 2 summarizes the data used in this paper. I identify entrenched executives in Sections 3. In Section 4, I use the sample of executive deaths to study the takeover market as a form of external corporate governance. I study the effect of board power in Section 5. I present results from some robustness checks in Section 6 and conclude in Section 7.

2. Data

I start with a base sample of 55 executive (CEO's, Presidents, and/or Chairmen of the Board) deaths provided in Etebari et al. (1987) for the 1972–1982 period. I eliminate 3 deaths that follow periods of illness, leaving 52 observations. Between 1983 and 1987, I collect 112 executive deaths from the obituary section of the *Wall Street Journal Index*. I then check the cause of death in the *Wall Street Journal*, the *New York Times*, and the *Washington Post*. I eliminate 69 observations because they were not surprises (either because the executive died of cancer, or because the executive had gone to the hospital within weeks of his eventual death, etc.), leaving 43 observations. I drop 20 additional observations because of missing Center for Research in Security Prices (CRSP) data, yielding 28 observations in the 1983–1987 period. I then complement the sample with a Lexis–Nexis search for announcements of unexpected deaths of executives between 1988 and 2008.⁴ I limit the use Lexis–Nexis to 1988 or later because the content on Lexis–Nexis before 1988 is very sparse. I also limit the search to unexpected deaths by including the keyword search terms “heart attack,” “stroke,” “accident,” “sudden,” “unexpected,” and “suddenly,” along with “chief executive,” “CEO,” “president,” and “chairman.” The initial Lexis–Nexis search yields 154 observations. I drop 19 observations because the death was not a surprise and 20 because of missing CRSP data. Thus, the final sample for the 1972–2008 period totaled 195 observations. Table 1 presents the observation count by year. I collect more detailed data on the deceased and the board of directors from proxy statements.⁵ I obtain financial data from Compustat. Finally, I estimate α based on the market model for three years before deaths using CRSP data.

I use event study methodology to calculate abnormal returns. I estimate the market model for 250 days before the announcement (i.e. starting 270 trading days and ending 20 days before the

¹ This is consistent with evidence in Denis and Denis (1995) that investors' attitudes towards executives is a function of performance.

² Weisbach (1988) shows that more outsider representation is indicative of better corporate governance, Jensen (1993), Yermack (1996) and Bennedsen et al. (2008) show that bigger boards are less effective, and Faleye (2007) shows that staggered boards are less effective.

³ They state that their observations are unexpected. However, some of the executives in their sample passed away from cancer. Thus, some of their observations are at least partially expected.

⁴ I limited the search to PR Newswire and Business Wire. To make sure the first date of the announcement is identified, I also searched for articles about executive deaths in the *Wall Street Journal*. I used the first date of the announcement if the death was announced in both the *Wall Street Journal* and Lexis–Nexis.

⁵ I used Lexis–Nexis to collect proxy statements between 1988 and 2004. Between 1978 and 1988, I obtain the proxy statements in microfiche format from SEC disclosure. Because SEC disclosure only provides proxy statements back to 1978 and because I require information for the year before the executive death, I have no corporate governance data for firms between 1972 and 1978 (30 observations).

Table 1

Observation count by year. The table presents the count of unexpected deaths by year.

Year	Count	Year	Count
1972	8	1990	6
1973	3	1991	9
1974	6	1992	6
1975	1	1993	6
1976	4	1994	9
1977	6	1996	7
1978	5	1997	3
1979	6	1998	10
1980	5	1999	6
1981	3	2000	9
1982	5	2001	7
1983	11	2002	3
1984	5	2003	2
1985	3	2004	4
1986	5	2005	5
1987	4	2006	4
1988	4	2007	3
1989	9	2008	3
Total			195

announcement). I use the CRSP value weighted market index as a proxy for the market. Next, I subtract expected returns from actual returns to obtain abnormal returns for days surrounding the announcement date.

Table 2 includes abnormal returns by day from 10 days before the event until 20 days after the event. Following Sanders and Robins (1991), I test the null hypothesis that the abnormal return is equal to zero after controlling for cross-sectional heteroscedasticity and serial correlation. Abnormal returns on the day of the event and the day following the event are statistically significant. However, the reaction is negative on the day of the announcement and positive on the day following the announcement. Abnormal returns are insignificant before the event, which suggests that “leakage” of the death announcement is unlikely. Abnormal returns on days 4, 6, 8–9, and 12 are significant at the 10% level. This is in part because news that was secret while the executive was alive was released following the death. For example, 13 firms went bankrupt within 5 years of the executive death (one firm stopped trading after day 9 and one more after day 12). Also, 41 firms in the sample were subject to takeover/bid rumors soon after the executive death. Twenty-two of these firms generated takeover interest after the executive death even though there were no rumors of interested bidders before the deaths.

Table 3 includes averages of the variables used in this study. As in most other studies of sudden executive deaths sample, the majority of the deaths stem from heart attacks or accidents. Consistent with earlier literature, executives over 70 and under 50 do not dominate the sample (18.5 and 14.4% of the sample, respectively). Average executive age and tenure are 60.7 and 14.7 years at the time of death. Also, the correlation between age and tenure is 0.55.

There are several key characteristics of managers identified in the sample. For example, the majority of the executives are CEOs (56.5%) or board chairs (70.5%). Being both the chair and CEO is often a measure of leadership or a sign of executive power. In 60.9% of the sample, the CEO and chair roles are separated. Less than a quarter of the executives were corporate founders. Executives own on average 11.3% of the firm at the before their deaths.

I use two measures of firm performance in this paper: the *alpha* from the market model regression and return on assets. Negative *alphas* (and lower return on assets) are associated with worse-than-expected performance whereas positive *alphas* (and higher return on assets) are associated with better-than-expected performance based on the market model. I calculate both for the three

Table 2

Event study results. The following are the mean abnormal returns for all observations for each day from 10 days before the event until 20 days after the event. Day 0 represents the day the death announcement appeared in the newspapers. *N* represents the number of observations used to calculate the mean abnormal return. Abnormal returns are calculated using the market model procedure. Positive: negative represent the number of positive returns versus the number of negative returns. EGLS Z-stat is the GLS test statistic that is robust to cross-sectional and serial correlation.

Day	<i>N</i>	Mean abnormal return	Positive: negative	EGLS Z-Stat.
–10	195	–0.13	79:116	–1.024
–9	195	0.16	84:111	–0.382
–8	195	0.10	97:98	0.937
–7	195	–0.27	86:109	0.063
–6	195	0.22	90:105	–0.168
–5	195	0.18	94:101	0.679
–4	195	–0.45	83:112	–1.49
–3	195	–0.09	81:114	–0.644
–2	195	–0.05	94:101	0.221
–1	195	–0.83	85:110	–0.828
0	195	–0.16	83:112	1.381*
1	195	0.84	100:95	2.667**
2	195	–0.20	100:95	–0.65
3	195	0.02	95:100	0.743
4	195	0.33	104:91	1.855*
5	195	–0.57	89:106	–0.588
6	195	–0.38	82:113	–1.993
7	195	–0.37	82:113	–0.685
8	195	0.55	104:91	1.685*
9	195	–0.36	85:110	–1.850*
10	194	–0.11	80:114	–1.174
11	194	–0.22	93:101	–0.671
12	194	–0.64	78:116	–1.343
13	193	0.13	92:101	0.41
14	193	0.20	97:96	0.881
15	193	–0.53	88:105	–1.498
16	193	0.20	88:105	0.308
17	193	0.14	84:109	0.098
18	193	0.35	98:95	0.225
19	193	–0.30	91:102	–0.254
20	192	–0.12	87:106	–0.814

* Denote statistical significance at the 10% level, respectively, using a 2-tail test.

** Denote statistical significance at the 5% level, respectively, using a 2-tail test.

years before sudden executive deaths. I use *alpha* to better control for expected performance, since Farrell and Whidbee (2003) show that boards focus on deviation from expected performance in deciding executive turnover. A positive (or negative) *alpha* suggests that the firm performed better (or worse) than would be expected by the market model. The average *Alpha* in this sample is 0.0419%. Alternatively, Engel et al. (2003) argue that return on assets is a better measure of performance because ROA weighs more than market measures of performance during discussions of CEO dismissal. As recommended by Barber and Lyon (1996), return on assets is calculated as operating income (Compustat data item 13) divided by average assets (beginning of period assets plus end of period assets divided by two). Average return on assets in this sample is 47.3%.⁶

For the majority of the paper, the dependent variable is the stock price reaction to sudden executive deaths. Independent variables include those factors that can potentially explain the stock price reaction to sudden executive deaths, including ease of replacement and entrenchment. The average of CARs in the sample used in this paper for days *t* and *t* + 1 (where *t* is the day that the news of the death was published) is 0.69%. Succession plans are likely to make it less difficult to replace an executive that died unexpectedly while in office. To proxy for the likelihood that a firm

⁶ *Alphas* from the three-factor model three years before deaths and industry adjusted ROAs are used as performance measures with similar results.

Table 3

Summary statistics. The following are descriptive statistics for various characteristics of the 195 sudden executive deaths for the 1972–2008 period. I measure size as the dollar value of the assets of the company. Insider ownership represents the number of shares owned by management and/or the board of directors over the number of shares outstanding for the firm. Institutional ownership is the sum of shares owned by financial institutions divided by the total number of outstanding shares. Board size is the number of members of the board of directors. Outsiders in board are the number of non-grads that are in the board of directors divided by the size of the board.

Panel A: Characteristics of the managers	
<i>Age at time of death:</i>	
Mean age	60.7 years
Executives 70 or older	18.5%
Executives 50 or younger	14.4%
Mean tenure in the firm at the time of death:	14.7 years
<i>Position in the firm:</i>	
Board Chairman (and possibly Chief Executive Officer)	70.5%
Chief Executive Officer (and possibly Board Chairman)	56.5%
Board Chairman & Chief Executive Officer	39.1%
Chief Executive Officer but not Chairman	39.4%
Corporate Founder	20.1%
<i>Proportion of the firm's outstanding common shares controlled by the executive:</i>	
Mean% controlled	11.3%
Executives controlling 5% or more	37.4%
Executives controlling 1% or less	33.8%
<i>Past performance</i>	
Intercept (alpha) from market model regression 3 years before death	0.0419%
Return on assets 3 years before death (compounded yearly)	47.3%
Industry adjusted return on assets 3 years before death (compounded yearly)	3.9%
Panel B: Characteristics of the events	
<i>Cause of death:</i>	
Death attributed to heart attack	49.7%
Death attributed to accidents or suicides	15.9%
Death attributed to natural causes	7.2%
Other/unknown	27.2%
Cumulative abnormal returns (days 0–1)	0.69%
Replacement by insider	79.1%
Panel C: Characteristics of the firms	
<i>Size of firm (in assets):</i>	
Average (in millions)	\$1687
Median (in millions)	\$240
<i>Ownership in firm:</i>	
Insider ownership	22.9%
Institutional Ownership	9.23%
<i>Board Composition:</i>	
Board size	8.8
Outsiders in board	37.6%
<i>Takeover targets:</i>	
Before death	10.88%
<i>Competitors</i>	
Number of firms in same 4-digit SIC code (competitors)	127.2
Number of firms in CRSP on event year	18,535

has a succession plan, I identify the origin (insider or outsider) of the replacement. The first replacement for an executive that dies unexpectedly is usually temporary and almost always immediate. Furthermore, the first replacement is always an insider. For that reason, I identify a replacement as an insider in this paper if no outsider is hired to replace the executive within a year following the death. Almost 80% of the executives in my sample are replaced by an insider. Another variable used in this paper to measure the ease of replacement is the number of competitors in the same industry. The argument is that there is a larger pool of possible replacements for deceased executives when there are more firms operating in the same industry. “Competitors” is the number of firms with the same 4-digit SIC code divided by the number of firms on the CRSP database for the year in which the executive passed away, and multiplying this amount by 100. Dividing the

number of competitors by the number of firms in CRSP allows for the comparison of the variables across time. The average value of the competitor index is 0.6862.⁷

In addition to ease of replacement and entrenchment, I control for firm characteristics that may also be related to the stock price reaction to sudden executive deaths. Panel C of Table 3 summarizes characteristics of the firms in which the executive was working until the time of death. The average (median) firm size (in millions), as measured by the value of the assets, is \$1687 (\$240). Insider ownership averages around 23%.⁸ On average, only 9.2% of the firm is owned by institution⁹ in my sample. The average number of members of the board of directors is 8.8. The average percentage of outsiders in the board of directors is 37.6%. Finally, about 36% of boards in my sample are staggered.

About 11% of the firms in my sample were rumored to be takeover targets before the sudden executive death. That is, the *Wall Street Journal* published at least one article, at most one year before the executive death about a takeover threat for 10.9% of the firms in my sample.

3. Identifying entrenched executives

3.1. Sudden executive deaths as the ideal proxy for entrenchment

In this paper, I argue that the stock price reaction to sudden executive deaths is a good measure of entrenchment. If a highly effective manager dies unexpectedly, the stock price reaction should be negative. If, however, death removes an entrenched manager when the board would or could not, the stock price reaction should be positive. Yet, here, too, we face complications. Identifying entrenched executives after they die is not very useful to investors. Thus, this paper's first goal is to identify entrenched managers with the sample of sudden executive deaths in order to propose proxies that can be used to identify entrenched managers before they die.

In Table 4, I compare summary statistics of observations with stock price reactions to sudden executive deaths above the 75th percentile (henceforth, the positive reactions) to those with reactions to sudden executive deaths below the 25th percentile of CARs (henceforth, the negative reactions).¹⁰ Results indicate that managers are significantly older and more tenured for observations with positive reactions than for observations with negative reactions.¹¹ In addition, firms with positive reactions have worse performance (as measured by *alpha* from the market model) than firms with negative reactions. This pattern is consistent with evidence in Johnson et al. (1985). In addition, boards of firms with positive reactions are significantly larger than boards of firms with negative reactions. Firms with positive reactions are more likely to have staggered

⁷ The number of days before a permanent replacement is announced is also obtained. However, this variable is very noisy because most of these announcements take place around the time of the annual meeting notice date.

⁸ Insider ownership is defined as the sum of stock ownership (as a percentage of the firm) by management or members of the board of directors. As a reference, average insider ownership in Linck et al., 2008 is 21.1%.

⁹ Cornet et al. (2007) and Parrino et al. (2003) document an important governance effect of institutions, but I do not find any significant effects of institutions and/or blockholders on the stock price reaction to sudden executive deaths in this sample.

¹⁰ The 25th and 75th percentiles of the stock price reaction to sudden executive deaths are −2.6% and 3.3%, respectively.

¹¹ One problem with this result is that older managers who are also more tenured are more likely to die. This means that older executives are more common in this dataset than in any broader sample of firms. For example, 17% of the executives in this sample are 70 years old or older, compared to 3% of the executives in the Investor Responsibility Research Center database for 2005. Thus, entrenchment is uncommonly pervasive in the sample used for this paper. Nonetheless, a later section of this paper confirms that the entrenchment proxy proposed in this paper seems to identify entrenched executives outside the sudden executive deaths sample.

Table 4

Identifying entrenched executives with stock price reaction to sudden executive deaths. This table summarizes different characteristics of boards of directors for entrenched and non-entrenched executives as identified with the stock price reaction to sudden executive deaths. The negative (positive) reactions group is composed of firms whose stock price reaction to sudden executive deaths is below the 25th (above the 75th) percentile of the sample. Age/tenure of executives is the age/tenure of executives at the time of their death. Alpha of firms is the intercept in the market model regression for three years before the death. Board size is the number of members on the board of directors. Executive stock ownership is the percentage of the firm owned by the deceased executive. "Board is staggered" is a dummy variable equal to one whenever the firm has a staggered board, and zero otherwise. Thus, the statistic represents the percent of the group that has a staggered board. Takeover targets before death is a dummy variable equal to one if the firm was a takeover target before the executive death, and zero otherwise. Thus, the statistic represents the percent of the group that was a takeover target before the executive death. *P*-value is the corresponding *P*-value for the difference in means test for a given firm/executive characteristic between the negative and positive reaction groups.

	Negative reactions	<i>P</i> -value	Positive reactions
Age of executives	56.8	(<0.001)	64.6
Tenure of executives	12.2	(0.004)	19.1
Alpha of firms	0.115%	(0.001)	−0.031%
Outsiders in board	41.7%	(0.209)	38.1%
Board size	7.6	(0.027)	8.7
Board is staggered	24.4%	(0.091)	38.1%
Executive stock ownership	12.8%	(0.256)	15.2%
Takeover targets before death	6.38%	(0.013)	22.4%
Market to book ratio	3.73	(0.071)	1.92

boards than firms with negative reactions. Firms with positive reactions are also more likely to be takeover targets before the death than firms with negative reactions. Finally, firms with positive reactions have significantly lower market-to-book ratios than firms with negative reactions. Preliminary evidence therefore suggests that the interaction of tenure and poor past performance are appropriate proxies for entrenchment.

It is possible that age and tenure also proxy for valuable firm experience. Indeed, for the sample of sudden executive deaths, old managers and managers with long tenure perform better than young managers and managers with short tenure. Specifically, the stock returns for the five years before the death, the return on assets for the three years before the death, and the intercept from the market model three years before the death are all significantly higher for executives older than 65 than for executives younger than 65.¹² Results, therefore, suggest that although entrenched managers tend to be older and more tenured, tenured managers are on average not entrenched. I propose that the interaction of tenure (or age) with the negative of performance is a better proxy for entrenchment than tenure or age alone.

3.2. Univariate analysis of the proposed entrenchment proxy

Table 5 presents results from univariate analysis of the entrenchment proxy proposed in Section 3 using the sample of sudden executive deaths. For this univariate analysis alone, a bivariate definition of entrenchment is necessary. I identify executives as entrenched if they have worked for the firm for more than 10 years and have a negative three-year *alpha*. Otherwise, executives are not entrenched. First, consistent with tenure and negative three-year *alpha* as a proxy for entrenchment, abnormal returns (accumulated on days 0 and 1) to sudden executive deaths are sig-

Table 5

Entrenchment and sudden executive deaths. This table summarizes characteristics of boards of directors by entrenchment. The entrenched group includes executives that have worked in the firm for more than 10 years and have performed badly. The non-entrenched group includes all managers that are not identified as entrenched (either because they worked in the firm for less than 10 years or because they have performed relatively well). Performance is measured as the intercept in the market model regression for three years before the death. Executives performed badly when performance is less than zero. Board size is the number of members on the board of directors. Executive ownership is the percentage of the firm owned by the deceased executive. Founder status is equal to one if the deceased was a founder of the firm. *P*-value is the corresponding *P*-value for the difference in means test for a given firm/executive characteristic between the entrenched and non-entrenched groups. For the "Abnormal return" statistic, I also present *P*-values below the statistics in parenthesis for the null hypothesis that the abnormal return is equal to zero.

	Firms with entrenched executives	<i>P</i> -value	Firms with non-entrenched executives
Abnormal reaction	6.76% (<0.001)	(0.004)	−1.80% (0.098)
Outsiders in board	32.81%	(0.100)	38.7%
Board size	10.25	(0.018)	8.57
Executive stock ownership	20.04%	(0.006)	7.62%
Founders in group	51.85%	(0.004)	25%
Market to book ratio	1.34	(0.069)	3.85

nificantly positive for deaths of entrenched managers (+6.8%) and significantly negative for deaths of non-entrenched managers (−1.8%). In addition, boards of firms with entrenched executives have lower outsider representation than those in firms with non-entrenched executives (32.8% vs 38.7% for the two groups, respectively). Finally, boards are significantly larger for firms with entrenched managers than for firms with non-entrenched managers (9.6 vs 7.3 members in the board for the two groups, respectively). Thus, results support the view that corporate governance quality is inversely related to managerial entrenchment. In other related results, entrenched executives own a significantly larger percentage of the stock in the firm than non-entrenched executives (20% vs 7.6% for the two groups respectively). Fifty-two percent of entrenched executives are also founders, compared to about 25% of non-entrenched managers. This supports the fact that entrenched executives are often founders (it does not necessarily mean that founders are always entrenched). Finally, the market-to-book ratio is significantly larger for firms with non-entrenched executives than for entrenched executives (3.85 vs 1.34 for the two groups respectively). This result suggests that firms with entrenched managers trade at a significant discount.

3.3. Multivariate analysis of the proposed entrenchment proxy

To this point I have not controlled for factors not related to entrenchment (for example, ease of replacement) in the analysis. I now use regression analysis to control for these non-entrenchment explanations of the stock price reaction to sudden executive deaths and to obtain better estimates of factors that explain entrenchment. Table 6 presents results of multivariate analysis of different proxies for entrenchment. In all regressions, the dependent variable is the stock price reaction to sudden executive deaths. I predict a negative coefficient on performance (as measured by three-year *alpha* or return on assets) because investors should be more upset when a good executive passes away. In addition, there should be a negative relationship between the stock price reaction to sudden executive deaths and quality of corporate governance. In other words, the reaction to deaths of executives in firms with good corporate governance should be *less positive* than the reaction to deaths of executives in firms with bad corporate governance. Thus, I predict a negative coefficient on the proportion of outsiders in the board, a positive coefficient for board size, and a

¹² Returns five years before the deaths are 27% for old managers compared to 0.3% for young managers. Return on assets is 0.269 for old managers and 0.177 for young managers. Finally, the intercept from the market model is 0.0005 for old managers and 0.0003 for young managers. This evidence is also confirmed in a larger out-of-sample set of observations in a later section of this paper.

Table 6

Regression analysis of entrenchment and the stock price reaction to executive deaths. Results from regression analysis of the stock price reaction to sudden executive deaths appear below. The dependent variable for all regressions is the cumulative abnormal return (not in percentage terms) for days t and $t + 1$, where t represents the day the executive passed away. Entrenched executive is equal to one if the deceased executive is entrenched. The proposed entrenchment dummy is equal to one for executives with at least 10 years of tenure at the time of death and negative intercept from the market model (alpha) estimated three years before executive deaths. Executive replaced by insider is a dummy variable that is equal to one if the deceased executive was replaced with an insider, and zero otherwise. Executive ownership is the percentage of the firm's stock owned by the deceased executive at the time of death. Takeover interest is one when there are rumors that the firm will be taken over, and zero otherwise. Outsiders in board is the percentage of outside directors on the board of directors. Board size is the size of the board of directors in the firm. Competitors is the number of firms with the same four-digit SIC code, divided by the number of firms on CRSP. Tech industry is a dummy variable equal to one if the firm operates in the pharmaceutical, computer, or electronics industry. Firm size is the logarithm of assets in 1982 dollars. P -values are presented in parenthesis below the coefficients.

Variable	Predicted sign	Model I	Model II	Model III	Model IV
Proposed entrenchment proxy	(+)		0.071 (0.010)	0.061 (0.040)	
Age of executive	(+)	0.002 (0.018)		0.001 (0.300)	0.002 (0.005)
Tenure of executive	(+)		0.001 (0.563)		
Executive replaced by insider	(?)	0.036 (0.131)	0.042 (0.074)	0.037 (0.111)	0.040 (0.126)
Executive founder	(?)	−0.021 (0.265)	−0.027 (0.190)	−0.023 (0.223)	−0.019 (0.320)
Alpha	(−)	−10.546 (0.025)	−13.079 (0.008)	−10.508 (0.023)	
Return on assets	(−)				−0.049 (0.082)
Takeover interest	(+)	0.087 (0.001)	0.076 (0.005)	0.077 (0.004)	0.090 (0.001)
Executive ownership	(+)/(−)	0.114 (0.040)	0.100 (0.069)	0.102 (0.063)	0.139 (0.020)
Outsiders in board	(−)	−0.101 (0.007)	−0.086 (0.020)	−0.093 (0.011)	−0.104 (0.006)
Size of board	(+)	−0.002 (0.475)	−0.001 (0.680)	−0.002 (0.455)	−0.004 (0.260)
Board is staggered	(+)	0.015 (0.336)	0.010 (0.515)	0.012 (0.438)	0.013 (0.412)
Competitors	(−)	0.435 (0.554)	0.223 (0.761)	0.315 (0.664)	−1.603 (0.120)
Tech firm	(−)	−0.013 (0.543)	−0.014 (0.496)	−0.013 (0.529)	−0.014 (0.521)
Firm size	(?)	0.006 (0.190)	0.004 (0.419)	0.006 (0.176)	0.011 (0.009)
Intercept		−0.127 (0.021)	−0.020 (0.621)	−0.072 (0.224)	−0.163 (0.006)
Observations		117	116	117	106
Adj. R-squared		0.278	0.302	0.301	0.327

positive coefficient on the staggered boards dummy (the dummy variable is equal to one if the firm has a staggered board and zero otherwise). Finally, I control for firm size with the natural logarithm of assets in 1982 dollars. I use the number of firms in the same industry and a dummy variable that is equal to one when the firm operates in the pharmaceutical, computer, or electronics industry to control for ease of replacement. We should find a positive relationship between the stock price reaction to sudden executive deaths and ease of replacement. Subsequently, I should find a negative coefficient on the number of firms in the same industry and the dummy variable indicating that the firm operates in a technical industry. Because replacement by insiders can either suggest good succession programs or willingness to change,¹³ I do not predict a specific sign on the coefficient on the insider/outsider replacement choice. Finally, I do not predict the direction of the coefficient on the founder dummy because theory and evidence on the effects of executive-founders is mixed.

The coefficients on the control variables are either as predicted or insignificant. For example, coefficient on the proportion of outsiders in the board of directors is negative.¹⁴ Results suggests that a 30% increase in the proportion of outsiders (from 20% to 50%, for example) leads to 270 basis point lower stock price reaction to sudden executive deaths (mean coefficient of -0.09 times 0.30 increase in proportion of outsiders in the board).¹⁵ The lack of significance on the board size variable is consistent with recent evidence in De Andres and Vallelado (2008).

¹³ Regarding the origin of the successor after turnover, theory predicts that hiring an insider could increase entrenchment, or confirm that a firm's investment in developing and maintaining a pool of managers is successful. Thus, while Huson et al. (2004) and Warner et al. (1988) find a negative relationship between outsider succession and stock returns in the current year, Furtado and Rozeff (1987) document positive abnormal stock reactions to announcements of internal promotions.

¹⁴ Results on the analysis of corporate governance and entrenchment are not exogenous. Conclusions based on relationships between the stock price reaction to sudden executive deaths and governance are only associative and not causal.

¹⁵ I have also analyzed executive role (CEO, CEO and Chairman duality, Chairman role, or president role) following Florou (2005) but results are insignificant for these variables.

I use a number of proxies for entrenchment in the multivariate analysis. In model I, I use executive age at the time of death. Consistent with Johnson et al. (1985), the coefficient on age of executive is positive and significant.¹⁶ However, after adding the interaction of tenure and negative performance in model III, the coefficient on age of executive becomes insignificant and the coefficient on tenure and negative performance is now positive and significant. The coefficient on the interaction between tenure and negative performance is significant even though past performance and tenure are included as control variables (model II). Results do not change if I measure performance with return on assets instead of alpha (model IV). Thus, regardless of how performance is measured, tenure interacted with negative performance is a better proxy for entrenchment than executive age and/or tenure separately.

3.4. Out-of-sample analysis of the proposed proxy for entrenchment

Up to this point, all entrenchment proxy analysis has been based on the relatively small sample of sudden executive deaths. As an alternative, but possibly less efficient test, I could compare corporate governance quality for entrenched and non-entrenched executives. Firms with entrenched executives should have worse corporate governance and more anti-takeover provisions than firms without entrenched executives. In addition, entrenched executives should have more power and worse performance measures than non-entrenched executives. Table 7 presents results of out-of-sample analysis of entrenchment proxies for the universe of IRRC firms for 2006. Three different definitions of entrenchment plausibly allow identification of CEOs as entrenched or non-entrenched. Note that this paper does not define entrenchment as a binary relationship. However, I split the sample into two subsets (likely very-entrenched vs likely not-very-entrenched) to highlight differences. For this analysis, the entrenched group is much smaller than the non-entrenched group – the entrenched group represents 3.5% of

¹⁶ Because of data constraints, this paper does not include either the GIM or the E-index as a possible entrenchment variable in the regression analysis.

Table 7

Out of sample analysis of entrenchment proxies. This table summarizes differences in means of various corporate governance, executive characteristics, and performance measures for entrenched and non-entrenched executives for 2006. Three proxies for entrenchment are used: tenure combined with past performance (entrenched executives with 10 years or more in office and return on assets less than 10% in the past 3 years), tenure alone (entrenched executives with more than 10 and/or 25 years in office, alternatively), and the E-index of Bebchuk et al. (2009) (entrenched executives with an E-index of at least 5). Corporate governance data is obtained from IRRC (Investor Responsibility Research Center). Accounting data is obtained from Compustat.

	Entrenched executives (70 obs.)	Non-entrenched executives (1918 obs.)	P-value for difference in means
<i>Panel A: Entrenchment as measured by tenure and past performance (entrenched executives have been in office for more than 10 years. In addition, firms with entrenched executives must have return on assets of less than 10% in the past 3 years)</i>			
Proportion of firms with staggered boards	77.61%	58.29%	<0.001
Average e-index	2.9833	2.626	0.0277
Average GIM-index	10.2089	9.5865	0.0491
Average percentage of voting shares owned by executive	4.91%	1.58%	<0.001
Average board size	11.0428	9.6444	<0.001
Average percentage of independents in board of directors	69.25%	73.19%	0.0233
Proportion of firms in which CEO is also chairman of board	77.14%	61.81%	0.009
	Entrenched executives (78 obs.)	Non-entrenched executives (2258 obs.)	P-value for difference in means
<i>Panel B: Entrenchment as measured by tenure alone (entrenched executives have been in office for more than 25 years)</i>			
Proportion of firms with staggered boards	53.84%	57.84%	0.483
Average e-index	2.064	2.607	<0.001
Average GIM-index	8.564	9.544	<0.001
Average percentage of voting shares owned by executive	12.99%	1.37%	<0.001
Average board size	8.939	9.5929	0.0204
Average percentage of independents in board of directors	60.75%	72.93%	<0.001
Proportion of firms in which CEO is also chairman of board	80.72%	60.09%	0.0002
	Entrenched executives (95 obs.)	Non-entrenched executives (1621 obs.)	P-value for difference in means
<i>Panel C: Entrenchment as measured by E-index (firms with entrenched executives have an index of 5 or 6)</i>			
Proportion of firms with staggered boards	96.29%	47.65%	<0.001
Average GIM-index	12.991	8.658	<0.001
Average percentage of voting shares owned by executive	0.64%	1.36%	0.0817
Average board size	10.494	9.491	<0.001
Average percentage of independents in board of directors	73.90%	73.70%	0.889
Proportion of firms in which CEO is also chairman of board	69.47%	61.75%	0.1316
Average return on assets in past 3 years	34.44%	51.11%	<0.001

the sample.¹⁷ This is not to say that only extreme entrenchment is costly to firms. Entrenchment exists in many degrees and it is always costly to shareholders, but differences in corporate governance quality are easier to identify in extreme cases of entrenchment. Moreover, it is likely that entrenchment is more common outside the IRRC sample of relatively large publicly traded firms, the reason being that managers can gain power more easily in small firms than in large firms simply because it is cheaper to buy power in small firms. Also, the media and analysts typically follow and point out governance problems in large firms more closely than in small firms.

I first identify managers as entrenched if they have worked in the firm for a long time and have poor performance. Otherwise, managers are not entrenched. I present results in which return on assets is the measure of performance even though results with *alpha* as measure of performance are similar and available upon request. I then identify entrenched executives with tenure alone. Entrenched executives are those who have worked in the firm for more than 25 years. Otherwise, they are not entrenched. Finally, I identify managers as entrenched if the Bebchuk et al. (2009) E-index is 5 or 6. Managers in firms with higher indexes have more anti-takeover provisions and, therefore, are more entrenched. Managers in firms with E-index between 1 and 4 are not entrenched. Results of the analysis are summarized in Table 7.

Note first (panel A) that firms with entrenched executives according to the first definition (tenure and poor past performance) are more likely to have staggered boards; more indepen-

dent boards; higher GIM-indexes (Gompers et al., 2003); higher E-index and shared chairman and CEO roles than non-entrenched executives. In addition, entrenched executives have higher voting power. Thus, firms with entrenched managers, according to the first proxy, also have bad corporate governance.

Alternatively, corporate governance quality does not seem to be worse for entrenched executives according to the second definition of entrenchment, i.e., tenure alone (see panel B.). For example, tenured executives manage firms with lower E-indexes, lower GIM-indexes (Gompers et al., 2003), and better performance than less tenured counterparts. Alternatively, tenured executives seem to have higher voting power, and they seem to work for firms with smaller and less independent boards than less tenured executives. Tenured CEOs are also more likely to be chairs. Nonetheless, tenure combined with poor past performance seems to be a better way of identifying entrenched executives.

Executives in firms with high E-indexes (panel C) are more likely to have staggered boards, high GIM-indexes (Gompers et al., 2003), executive voting power, larger boards, and poorer past performance than firm with low E-indexes. However, boards of firms with high E-indexes are just as independent as boards of firms with low E-indexes. Further, tenure of executives in firms with high E-indexes is similar to that of executives in firms with low E-indexes. This evidence confirms that the E-index is better than tenure alone in identifying entrenched executives but worse than the combination of tenure and poor past performance.

3.5. Executive founders and entrenchment

Table 8 presents results multivariate analysis of founder status. The first result is that the stock price reaction to sudden deaths is

¹⁷ Throughout this section, samples of entrenched vs non-entrenched of similar size are created in order to make sure that results are not due to sample selection. The limits on parameters determining entrenchment is chosen so that the size of the entrenched manager sample is similar across different entrenchment proxies.

Table 8

Regression analysis of founder status and the stock price reaction to sudden executive deaths. Results from regression analysis of the stock price reaction to sudden executive deaths and founder status appear below. The dependent variable for all regressions is the cumulative abnormal return (not in percentage terms) for days t and $t + 1$, where t represents the day the executive passed away. Entrenched is equal to one if the deceased executive is entrenched. Entrenched managers are those with at least 10 years of tenure and intercept from the market model (three-year alpha) less than zero. Insider replacement is a dummy variable that is equal to one if the deceased executive was replaced with an insider and zero otherwise. Executive ownership is the percentage of the firm's stock owned by the deceased executive at the time of death. Takeover interest is 1 when there are rumors that the firm will be taken over, and zero otherwise. Outsiders in board is the percentage of outside directors in the board of directors. Board size is the size of the board of directors in the firm. Competitors is the number of firms with the same four-digit SIC code, divided by the number of firms on CRSP. Tech industry is a dummy variable that is equal to one if the firm operates in the pharmaceutical, computer, or electronics industry. Firm size is the logarithm of assets in 1982 dollars. P -values are presented in parenthesis below the coefficients.

Variable	Predicted sign	Model I	Model II	Model III
Founder	?(–)	0.006 (0.670)	–0.017 (0.386)	–0.033 (0.092)
Founder \times entrenched	(+)			0.099 (0.002)
Executive ownership	?(–)		0.141 (0.012)	0.118 (0.029)
Executive replaced by insider	(+)/(–)		0.049 (0.041)	0.041 (0.075)
Takeover interest	(+)		0.089 (0.001)	0.064 (0.015)
Outsiders in board	(–)		–0.087 (0.022)	–0.083 (0.024)
Board size	(+)		0.002 (0.568)	0.001 (0.836)
Alpha	(–)		–11.500 (0.018)	–9.765 (0.038)
Tech industry	(–)		–0.003 (0.906)	–0.003 (0.897)
Competitors	(+)		0.518 (0.492)	0.559 (0.442)
Firm size	(?)		0.004 (0.330)	0.005 (0.233)
Intercept		0.006 (0.427)	–0.055 (0.175)	–0.042 (0.281)
# Observations		187	121	121
Adj. R -squared		0.001	0.218	0.275

Table 9

Sudden executive deaths and takeover threats. Table 11 presents the firms that were targets of takeover before and after the executive death. Before death is equal to one if a firm was a takeover target before the death of the executive. After death is equal to one if the firm became a takeover target after the executive death. I also present the average stock price reaction to sudden executive deaths for firms that were takeover targets before the sudden executive death and for firms that were not takeover targets before the sudden executive death.

Before death	After death			
	Not	Yes	Total	Average reaction to sudden deaths
Not	150	22	172	0.19%
Yes	2	19	21	4.94%
Total	152	41	193	

not significantly different for founder status alone. This contrasts the result in Johnson et al. (1985) that the reaction to sudden executive deaths is more positive for deaths of founders. An explanation for the result in this paper is that some founders may be entrenched, while others may be key assets to the firm (Schwert, 1985). To test this possible explanation, I interact the founder status dummy variable with the proposed entrenchment proxy. If some founders are invaluable to the firm and others are entrenched, we should find a positive coefficient for entrenched founders and negative for non-entrenched founders. Results in model III of Table 9 confirm these predictions.

Note that the analysis first shows that the stock price reaction to sudden executive deaths is more positive for older and poorly performing executives than for younger and/or well performing executives. It is therefore no surprise that the stock price reaction to deaths of old and poorly performing founders is also positive. To clearly show that the reaction to sudden founder executive deaths is either extremely positive or extremely negative, I sort the sample of sudden executive deaths by CARs and then classified them into decile bins. In untabulated results, I show that the majority of sudden founder deaths are in the extremely negative or extremely positive CAR decile bins. Thus, founders tend to be either extremely valuable or extremely entrenched.

4. Takeovers and corporate governance

Another aspect of sudden executive deaths that has never been formally tested in research is the impact of executive deaths on the

likelihood that the firm will become a takeover target. The media often mentions cases like Campbell's Soup and Gerber as cases in which takeover rumors increased significantly after sudden deaths of executives. As Prince (2001) points out, "the death of a CEO can easily catapult an otherwise stable firm to the front of the takeover line." This sample helps confirm that the likelihood of takeover is extremely high following sudden executive deaths. Out of 195 possible observations, almost 20% of the firms in my sample (36 observations) were taken over within five years of the sudden executive death. Compared to 2.6% in Palepu (1986) and 3% in Comment and Schwert (1995), the unconditional takeover probability in this sample seems much higher. Thus, sudden executive deaths seem to increase the likelihood of a takeover.

This consequence of sudden executive deaths is interesting because of its implications for corporate governance. Jensen (1988) and Scharfstein (1988) suggest that threats of takeovers provide an external incentive for the firm to improve corporate governance. In fact, Jensen (1993) states that takeovers are widely interpreted as the critical corporate governance mechanism without which management discretion cannot be controlled.¹⁸ The results in this paper suggest that the takeover market is not always an effective form of corporate governance. The idea that executives want to block takeovers against the interest of shareholders is not surprising because there is significant evidence that top managers are often removed after a firm is taken over (Martin and McConnell (1991) and Huson et al. (2001)). Further, because executive ownership is higher in this sample than in an otherwise random sample, managers are more able to block a takeover (Shivdasani (1993)).¹⁹ In this paper, a positive relationship between the stock price reaction to sudden executive deaths and previous takeover interest gathered from the *Wall Street Journal* likely indicates that the removal of the executives through sudden deaths increases the likelihood that the firm will be taken over.

Table 9 tabulates the firms that were targets of takeover before and after the executive death. As shown, 21 firms were takeover targets before the executive deaths. In addition, 19 of 21 firms that

¹⁸ In related research, Lehn and Zhao (2006) also find that managers of firms that make bad acquisitions also have a higher likelihood of being fired.

¹⁹ Consistent with this idea, Slovin and Sushka (1993) document that when insider ownership falls as a consequence of deaths of inside blockholders, the probability increases that the firm will be taken over.

Table 10

Board power, entrenchment, and corporate governance. This table summarizes characteristics of the sudden executive deaths sample across levels of board power. Board power is measured as the ratio of (board ownership excluding that of deceased executive) and executive ownership. The group with powerful (weak) boards is the group of firms in the upper (lower) quartile of board power. Alpha is measured as the intercept in the market model regression for three years before the death. Board size is the number of members in the board of directors. Founder status is equal to one if the deceased was a founder of the firm. Family firms is equal to one if a firm is a family firm and zero otherwise. Outsiders in board is the percentage of outsiders in the board of directors. Executive replaced by insider is equal to one if the deceased executive was replaced by an insider and zero otherwise. *P*-value is the corresponding *P*-value for the difference in means test for a given firm/executive characteristic between the entrenched and non-entrenched groups.

	Firms with powerful boards	<i>P</i> -value	Firms with weak boards
Abnormal reaction	−0.64%	0.011	3.84%
Outsiders in board	43.47%	0.0348	35.17%
Board size	9.56	0.0065	7.81
Executive age	59.53	0.002	65.91
Founders	2.98%	<0.001	62.79%
Executive replaced by insider	81.35%	0.006	100%
Family firms	4.91%	<0.001	41.46%

were takeover targets before the executive death remain as takeover targets after the executive death. The stock price reaction to deaths of executives that worked in firms that were (were not) takeover targets before the death is 4.94% (0.19%). The difference in the stock price reactions is significant at the five percent level. Also note that the coefficient on the pre-death takeover rumors dummy variable is positive and significant in all regressions in Tables 6 and 8. Thus, results suggest that part of the reason for the positive stock reaction to sudden executive deaths is apparently because in the stockholders' view, an obstacle to a takeover has been removed. One concern with these results is that the measure used to indicate takeover threat does not necessarily imply that an executive blocked the takeover. The positive relationship between the stock price reaction to deaths and takeover threat (based on the measure used in this paper to identify takeover threat) is not necessarily a consequence of executives blocking takeovers. Therefore, it is possible that the takeover results are not a consequence of entrenchment. Still, the reaction is an indication that the takeover is more likely after the executive is removed.

5. Board power and corporate governance

Up to this point, I focus only on the ownership level of the executive, ignoring the possible power struggles between executives and the board of directors. What if the board of directors has more ownership power than the executive?²⁰ Pathan (2009) finds that strong boards positively affect bank risk-taking, whereas powerful CEOs take fewer risks. Perhaps CEO power is positively correlated to entrenchment. I use the ratio of board ownership (excluding the executive ownership) and executive ownership to explore this power struggle.²¹ A ratio greater than one (less than one) indicates that the board is more (less) powerful than the executive. First, I compare statistics of firms with powerful boards to those with weak boards in the sudden executive deaths sample. Specifically, I compare executive and corporate governance characteristics for firms in the top quartile of board power (powerful boards) to the firms in the bottom quartile of board power (weak boards). Table 10 shows that the stock price reaction to sudden executive deaths is significantly more posi-

tive for firms with weak boards compared to those with powerful boards (3.84% for firms with weak boards compared to −0.64% for firms with powerful boards). This is consistent with the idea that executives in firms with weak boards are more able to entrench themselves. In addition, weak boards are smaller and have fewer outsiders than powerful boards. This result confirms that weak boards are composed mainly of close friends of the executive. Firms with weak boards are more likely to be family firms and firms with founder executives than firms with powerful boards. Finally, firms with weak boards tend to replace the executive with an outsider less frequently than firms with powerful boards. In aggregate, this indicates that firms with powerful boards tend to have better corporate governance than firms with weak boards.

The stock price reaction to sudden executive deaths is also regressed against board power (in addition to most of the controls used earlier in the paper) but the results are not strong (Table 11, model I) likely because (as already documented) board power is strongly correlated with other corporate governance measures.

6. Additional robustness checks

In this section, I test whether the results in the paper are affected by changes in firm risk profiles following deaths and/or possible noise in the estimation of abnormal reactions to sudden executive deaths.²²

6.1. Firm risk profile change following executive deaths

While investors may have predicted a change in the risk profile of the firm following sudden executive death, earlier literature has neither tested whether this is the case nor has it explored the implications of such possibility. To analyze the effect of anticipated changes in the risk profile of the firm, I estimate beta before and after the deaths. The findings suggest that firms actually become less risky after sudden executive deaths (firms had an average beta of 0.84 before the death and 0.74 after the death. This difference is significant at the 5% level). The next question is whether this change in risk affects the results in the rest of the paper. I address this possibility in two ways. First, I include the change in beta as an independent variable in the regression of the stock price reaction on the variables tested earlier in the paper (Table 11, model II). Results are consistent with those in the earlier sections. Alternatively (results for this analysis are not tabulated), I calculate abnormal returns by estimating the market model during the year following the executive death but results. Again, results are not significantly different from those in the earlier analysis. Finally (these results are also not tabulated), I estimate abnormal returns using the post-event market model and I include the change in beta variable, but results are still unchanged.

6.2. Event study methodology issues

I avoid one of the most significant problems in the corporate governance literature, endogeneity, because I use event study analysis in this paper. However, event studies have their own weaknesses. As Peterson (1989) points out, even the selection of the event period is somewhat subjective. Many studies (such as this one) use a window that includes the day after the event because the news may have been released after trading hours are closed. However, uncertainty may remain even after the first two days about the information revealed at announcement date. Of course,

²⁰ I thank the referee for suggesting this fruitful extension of the research.

²¹ If executive ownership is zero but board ownership is not zero, board power to 10, which is the 1%ile of this measure without these observations. If executive ownership and board ownership is zero, then board power to 1, as the board and executive have equal power.

²² A recent literature has looked at different corporate finance issues for family firms (see for example, Basu, 2009 and Bennedsen et al. 2007). In unreported results, I test whether the stock price reaction to sudden executive deaths is different for deaths in family firms but obtain no significant results.

Table 11

Additional robustness checks of the stock price reaction to sudden executive deaths. Results from robustness checks of the regression analysis of the stock price reaction to sudden executive deaths and founder status appear below. The dependent variable for all regressions is the cumulative abnormal return (not in percentage terms) on days 0 and 1 such that the executive passed away on day 0. Model IV is estimated only for non-family firms. Insider replacement is a dummy variable that is equal to one if the deceased executive was replaced with an insider and zero otherwise. Takeover interest is 1 when there are rumors that the firm will be taken over, and zero otherwise. Outside directors is the percentage of outside directors in the board of directors. Board size is the size of the board of directors in the firm. Competitors is the number of firms with the same four-digit SIC code, divided by the number of firms on CRSP. Tech is a dummy variable that is equal to one if the firm operates in the pharmaceutical, computer, or electronics industry. Firm size is the logarithm of assets in 1982 dollars. The sample in model III includes those in which the firm of the deceased executive is not a family firm. *P*-values are presented in parenthesis below the coefficients.

Variable	Predicted sign	Model I	Model II	Model III	Model IV
Age	(+)	0.002 (0.004)	0.002 (0.003)	0.003 (0.003)	0.004 (0.000)
Board power	(+)	0.000 (0.910)			
Change in beta	(?)		0.013 (0.264)		
Family firm				−0.029 (0.154)	
Executive replaced by insider	(?)	0.035 (0.143)	0.035 (0.192)	0.033 (0.169)	0.037 (0.175)
Takeover interest	(+)	0.082 (0.002)	0.108 (0.000)	0.079 (0.005)	0.085 (0.005)
Percentage outsiders in board	(−)	−0.110 (0.003)	−0.101 (0.009)	−0.112 (0.004)	−0.104 (0.018)
Board size	(+)	−0.004 (0.177)	−0.004 (0.198)	−0.005 (0.111)	−0.009 (0.011)
Board is staggered	(+)	0.012 (0.460)	0.002 (0.879)	0.011 (0.506)	0.015 (0.411)
Alpha	(−)	−11.082 (0.017)	−10.403 (0.033)	−9.622 (0.041)	−11.157 (0.045)
Tech industry	(−)	−0.024 (0.245)	−0.031 (0.188)	−0.024 (0.270)	−0.044 (0.083)
Competitors	(−)	0.475 (0.520)	0.561 (0.460)	0.473 (0.521)	0.917 (0.272)
Firm size	(?)	0.006 (0.184)	0.006 (0.201)	0.006 (0.212)	0.005 (0.266)
Intercept		−0.117 (0.032)	−0.126 (0.031)	−0.114 (0.041)	−0.143 (0.033)
# Observations		119	107	117	94
Adj. R-squared		0.256	0.299	0.267	0.324

expanding the event window has its own problems because it opens the possibility that other news, possibly not related to the event, add noise to the estimation of the abnormal reaction. In this sense, the sample of sudden executive deaths is very problematic because the firm goes through significant change following sudden executive deaths. When I expand the event window forward 10 days, executive characteristics correlate only very weakly with the abnormal return estimation.

Event studies rely on the estimation of expected returns. Issues such as non-synchronous trading and noise plague event studies. Further, [Peterson \(1989\)](#) surveys the literature and finds that proposed adjustments to non-synchronous trading do not improve the power of tests for abnormal performance. I explore the possibility of using the Fama and French 3 factor model (with momentum) to calculate expected returns in order to reduce some noise in the estimation of expected returns. The weakness of this methodology of course is that there is still some debate whether these 4 factors are appropriate risk factors. Results of this analysis (not tabulated) are essentially the same if I use the 3-factor model with momentum instead of the simple market model to estimate predicted returns.

In event studies that try to model abnormal returns as a function of event/firm characteristics (such as the event study in this paper), [Peterson \(1989\)](#) also discusses the problem of non-constant variance of the abnormal returns that can lead to bias on the coefficients of the independent variables. Following the suggestion in [Peterson \(1989\)](#), I estimate all regressions using standardized cumulative abnormal returns (standardized by the standard deviation of the residuals from the regression in the estimation period) to alleviate this problem. The main results (untabulated) are unchanged.

In the end, it seems that the results in this paper are robust to some of the issues in event studies. The problem, as [Peterson \(1989\)](#) points out, is that more complicated procedures “do not provide a clear-cut benefit over OLS procedures.” That is, even complicated procedures cannot solve the inherent problems of event studies.

7. Conclusions

Entrenchment has been an important subject in the corporate governance literature for some time. However, identifying en-

trenched executives has been mostly taken for granted. In this paper, I use the stock price reaction to sudden executive deaths to measure entrenchment. In addition, I compare the effectiveness of entrenchment proxies used in the past. Results suggest that entrenched managers tend to be older, and more tenured. However, old executives on average perform better young executives. Thus, this paper suggests that the interaction of tenure with bad performance is a better proxy for entrenchment. The dynamic of tenure and bad performance correlates better with entrenchment than age or tenure alone. In out-of-sample analysis, the entrenchment proxy proposed in this paper (tenure interacted with poor past performance) identifies executives in firms with poor corporate governance. Results also show that executive tenure, the most popular entrenchment proxy in the literature, is arguably the worst proxy for entrenchment in out-of-sample analysis. I also use the new proposed entrenchment proxy to distinguish “good” founders from entrenched founders.

I also find that the stock price reaction to executive deaths for firms that were takeover targets before the death of executives is significantly positive. Consistent with media accounts, my results suggest that in the shareholders' view, executive deaths sometimes remove a takeover block. Thus, I argue that the takeover market is not always an efficient form of corporate governance, since entrenched managers can often prevent the takeover from taking place. It seems that sudden executive deaths increase the likelihood that a firm will be taken over. However, a more thorough analysis of a broader sample of firms is needed to correctly test this hypothesis. Future research should address how managers become entrenched. In addition, research needs to address whether managers sometimes become less entrenched with time. Can we observe time series trends in managerial entrenchment? In this sense, this line of research relates somewhat to the managerial styles literature (see [Bertrand and Schoar, 2003](#)).

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References

- Adams, R., Almeida, H., Ferreira, D., 2009. Understanding the relationship between founder-CEOs and firm performance. *Journal of Empirical Finance*, forthcoming.
- Anderson, R., Reeb, D., 2003. Founding-family ownership and firm performance. Evidence from the S&P 500. *Journal of Finance* 58, 1301–1328.
- Barber, B.M., Lyon, J.D., 1996. Detecting abnormal operating performance. The empirical power and specification of test statistics. *Journal of Financial Economics* 41, 359–399.
- Basu, N., Dimitrova, L., Paeglis, I., 2009. Family control and dilution in mergers. *Journal of Banking and Finance* 33, 829–841.
- Bebchuk, L., Cohen, A., Ferrell, A., 2009. What matters in corporate governance? *Review of Financial Studies* 22, 783–827.
- Bennedsen, M., Nielsen, K.M., Perez-Gonzalez, F., Wolfenzon, D., 2007. Inside the family firm: The role of families in succession decisions and performance. *Quarterly Journal of Economics* 122, 647–691.
- Bennedsen, M., Kongsted, H.C., Nielsen, K.M., 2008. The causal effect of board size in the performance of small and medium sized firms. *Journal of Banking and Finance* 32, 1098–1109.
- Berger, P.G., Ofek, E., Yermack, D.L., 1997. Managerial entrenchment and capital structure decisions. *Journal of Finance* 52, 1411–1438.
- Bertrand, M., Schoar, A., 2003. Managing with style: The effect of managers on corporate policy. *The Quarterly Journal of Economics* 118, 1169–1208.
- Borokhovich, K.A., Brunarski, K.R., Harman, Y., 2005. Firm value and inside ownership: Evidence from the unexpected deaths of senior executives. Working Paper, Miami of Ohio University.
- Comment, R., Schwert, W.G., 1995. Poison or placebo? Evidence on the deterrence and wealth effects of modern antitakeover measures. *Journal of Financial Economics* 39, 3–43.
- Cornett, M.M., Marcus, A.J., Saunders, A., Tehranian, H., 2007. The impact of institutional ownership on corporate operating performance. *Journal of Banking and Finance* 31, 1771–1794.
- De Andres, P., Vallelado, E., 2008. Corporate governance in banking: The role of the board of directors. *Journal of Banking and Finance* 32, 2570–2580.
- Denis, D.J., Denis, D.K., 1995. Performance changes following top management dismissals. *Journal of Finance* 50, 1029–1057.
- Denis, D.J., Serrano, J.M., 1996. Active investors and management turnover following unsuccessful control contests. *Journal of Financial Economics* 40, 239–266.
- Engel, E., Hayes, R.M., Wang, X., 2003. CEO turnover and properties of accounting information. *Journal of Accounting and Economics* 36, 197–226.
- Etebari, A., Horrigan, J.O., Landwehr, J.L., 1987. To be or not to be—reaction of stock returns to sudden deaths of corporate chief executive officers. *Journal of Business, Finance and Accounting* 14, 255–278.
- Fahlenbrach, R., 2008. Founder CEOs, investment decisions, and stock market performance. *Journal of Financial and Quantitative Analysis*.
- Faleye, O., 2007. Classified boards, firm value, and managerial entrenchment. *Journal of Financial Economics* 83, 501–529.
- Farrell, K.A., Whidbee, D.A., 2003. Impact of firm performance expectations on CEO turnover and replacement decisions. *Journal of Accounting and Economics* 36, 165–196.
- Florou, A., 2005. Top director shake-up: The link between chairman and CEO dismissal in the UK. *Journal of Business Finance and Accounting* 32, 97–128.
- Furtado, E.P.H., Rozeff, M.S., 1987. The wealth effects of company initiated management changes. *Journal of Financial Economics* 18, 147–160.
- Gompers, P.A., Ishii, J.L., Metrick, A., 2003. Corporate governance and equity prices. *The Quarterly Journal of Economics* 118, 107–155.
- Huson, M.R., Parrino, R., Starks, L.T., 2001. Internal monitoring mechanisms and CEO turnover: A long-term perspective. *Journal of Finance* 56, 2265–2297.
- Huson, M.R., Malatesta, P.H., Parrino, R., 2004. Managerial succession and firm performance. *Journal of Financial Economics* 74, 237–275.
- Jensen, M.C., 1988. Takeovers: Their causes and consequences. *Journal of Economic Perspectives* 2, 21–48.
- Jensen, M.C., 1993. The modern industrial-revolution, exit, and the failure of internal control systems. *Journal of Finance* 48, 831–880.
- Johnson, B.W., Magee, R.P., Nagarajan, N.J., Newman, H.A., 1985. An analysis of the stock-price reaction to sudden executive deaths: Implications for the managerial labor-market. *Journal of Accounting and Economics* 7, 151–174.
- Johnson, S., Moorman, T., Sorescu, S.M., 2006. Governance, stock returns and market efficiency. Working Paper, Texas A&M University.
- Lehn, K.M., Zhao, M., 2006. CEO turnover after acquisitions: Are bad bidders fired? *Journal of Finance* 61, 1759–1811.
- Linck, J.S., Netter, J.M., Yang, T., 2008. The determinants of board structure. *Journal of Financial Economics* 87, 308–328.
- Martin, K.J., Mcconnell, J.J., 1991. Corporate performance, corporate takeovers, and management turnover. *Journal of Finance* 46, 671–687.
- Morck, R., Shleifer, A., Vishny, R.W., 1988. Management ownership and market valuation – an empirical-analysis. *Journal of Financial Economics* 20, 293–315.
- Norburn, D., Birley, S., 1988. The top management team and corporate performance. *Strategic Management Journal* 9, 225–237.
- Palepu, K.G., 1986. Predicting takeover targets: A methodological and empirical-analysis. *Journal of Accounting and Economics* 8, 3–35.
- Palia, D., Ravid, A., 2008. The financial incentives of founders in large companies. *Journal of Regulatory Economics* 33, 55–86.
- Parrino, R., Sias, R.W., Starks, L.T., 2003. Voting with their feet: Institutional ownership changes around forced CEO turnover. *Journal of Financial Economics* 68, 3–46.
- Pathan, S., 2009. Strong boards, CEO power and bank risk-taking. *Journal of Banking and Finance* 33, 1340–1350.
- Peterson, P.P., 1989. Event studies: A review of issues and methodology. *Quarterly Journal of Business and Economics* 28, 36–66.
- Prince, C.J., 2001. Grief in the corner office. *The Chief Executive*, October 1, 2001.
- Sanders, R.W., Robins, R.P., 1991. Discriminating between wealth and information effects in event studies in accounting and finance research. *Review of Quantitative Finance and Accounting* 1, 307–329.
- Scharfstein, D., 1988. The disciplinary role of takeovers. *Review of Economic Studies* 55, 185–199.
- Schwert, W., 1985. A discussion of CEO deaths and the reaction of stock prices. *Journal of Accounting and Economics* 7, 175–178.
- Shivdasani, A., 1993. Board composition, ownership structure, and hostile takeovers. *Journal of Accounting and Economics* 16, 167–198.
- Shleifer, A., Vishny, R.W., 1989. Management entrenchment: The case of manager-specific investments. *Journal of Financial Economics* 25, 123–140.
- Slovins, M.B., Sushka, M.E., 1993. Ownership concentration, corporate control activity, and firm value: Evidence from the death of inside blockholders. *Journal of Finance* 48, 1293–1321.
- Villalonga, B., Amit, R., 2006. How do family ownership, management, and control affect firm value? *Journal of Financial Economics* 80, 385–417.
- Warner, J.B., Watts, R.L., Wruck, K.H., 1988. Stock prices and top management changes. *Journal of Financial Economics* 20, 461–492.
- Weisbach, M.S., 1988. Outside directors and CEO turnover. *Journal of Financial Economics* 20, 431–460.
- Worrell, D.L., Davidson, W.N., Chandy, P.R., Garrison, S.L., 1986. Management turnover through deaths of key executives: Effects on investor wealth. *Academy of Management Journal* 29, 674–694.
- Yermack, D., 1996. Higher market valuation of companies with a small board of directors. *Journal of Financial Economics* 40, 185–211.
- Yermack, D., 2006. Flights of fancy: Corporate jets, CEO perquisites, and inferior shareholder returns. *Journal of Financial Economics* 80, 211–242.