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AN ANALYSIS OF THE STOCK PRICE REACTION TO SUDDEN EXECUTIVE DEATHS
Implications for the Managerial Labor Market*

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Certain characteristics of managerial employment arrangements and of the managerial labor market make shareholder wealth dependent on an executive's continued employment. These wealth effects are investigated by examining the common stock price reaction to unexpected deaths of senior corporate executives. Abnormal stock price changes are documented for a sample of fifty-three events. These abnormal stock price changes are associated with the executive's status as a corporate founder and with measures of the executive's 'talents' and decision-making responsibility, and of the transaction costs associated with renegotiating or terminating the employment agreement.

1. Introduction

The literature on wage dynamics and property rights suggests that certain characteristics of managerial employment arrangements and of the labor market for managers make shareholder wealth dependent upon continued employment of an incumbent manager. Becker (1964) and Klein, Crawford and Alchian (1978) argue that the compensation package required to retain an incumbent manager with firm-specific human capital enables shareholders to capture some of the economic benefits associated with those firm-specific abilities. Harris and Holmstrom (1982), on the other hand, show that an

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incumbent manager's continued employment can adversely affect shareholder wealth when the employment setting is characterized by transportable human capital (revealed over time) and manager mobility, since future-period compensation may exceed the (ex post) value of the manager's services. In both settings, termination of the firm/manager employment relationship will induce changes in shareholder wealth if the future benefits or costs associated with the incumbent manager's continued employment differ from those expected from the replacement manager. Of course, shareholder wealth will be independent of the incumbent manager's continued employment or termination if perfect substitutes (in the form of a replacement manager) are available.

Given capital market efficiency, these shareholder wealth effects are reflected in common stock price responses to the termination of the firm/manager employment relationship. Accordingly, we examine the common stock price reaction to one class of terminations: the unexpected deaths of senior corporate executives due to heart attacks, plane or automobile crashes, suicides, and similar causes. Large positive and negative share price adjustments coincident with the unexpected deaths of senior corporate executives are documented, providing evidence that the (ex ante) value of the deceased incumbent differs from that of the anticipated replacement manager. Moreover, the size and direction of the share price adjustments are shown to be correlated with the incumbent executive's status as a corporate founder, with measures of the executive's 'talents' and decision-making responsibility, and with variables related to the transaction costs of prematurely renegotiating or terminating the employment contract.

The remainder of the paper is organized as follows. Section 2 describes the circumstances under which continued employment of an incumbent manager affects shareholder wealth. Sample selection procedures and selected characteristics of the sample are discussed in section 3, and section 4 presents the results of the empirical tests. Finally, the research is summarized and conclusions are drawn in section 5.

2. Compensation adjustments and the managerial labor market

This section describes the characteristics of the firm/manager employment relationship and of the managerial labor market which make shareholder wealth dependent on the continued employment of an incumbent manager. The general thrust of the following analysis is that gains and losses from continued employment occur because (1) the incumbent manager possesses firm-specific human capital and the associated economic benefits accrue (at least in part) to shareholders, or (2) transaction costs limit the ability of the contracting parties to renegotiate the employment agreement when the incumbent manager's compensation deviates from the market-clearing price for the manager's services. If termination of the employment relationship is not

fully anticipated, the stock price response to the incumbent manager's death reflects the change in shareholder wealth that occurs because the (ex ante) value of the deceased incumbent manager's decisions, abilities and compensation differs from that of the anticipated replacement manager.[1]

2.1. *Effects of continued employment on shareholder wealth*

At the time of initial employment, firms competing in the managerial labor market assess the abilities and characteristics of each prospective manager and offer compensation packages commensurate with those assessments. If the labor market is competitive and efficient, with all firms and prospective managers sharing common (but perhaps incomplete) information about each manager's abilities and characteristics, these assessments will be reflected in the market-clearing price for each manager's services.

The presence of non-transportable (firm-specific) human capital implies that the manager's expected marginal product to the employing firm exceeds the manager's value to other firms competing in the labor market. If the firm pays the market price (or slightly more) for the manager's services, the manager will accept employment thus enabling shareholders to earn positive rents. These rents arise because shareholders control access to a productive opportunity which is unique in its level of benefits from the manager's abilities. Subsequent to initial contracting, expenditure of personal resources to acquire firm-specific abilities will not improve the incumbent manager's position in the labor market, so the manager has little incentive to acquire such abilities unless shareholders commit to an above-market future compensation package. Shareholders, on the other hand, would be willing to bear the costs of developing the manager's firm-specific human capital to the extent that they can capture the expected future quasi-rents resulting from that investment [Becker (1964) and Klein, Crawford and Alchian (1978)].[2] Shareholder wealth is affected adversely by the unexpected death of a manager with firm-specific

[1] The benefits and costs associated with termination of the employment relationship may depend on whether termination occurs through dismissal, resignation, or death. For example, some long-term employment contracts guarantee the executive's position and salary for the duration of the contract period. This guarantee imposes a transaction cost (borne by shareholders) when the executive is fired during the contract period, but this type of transaction cost is not incurred by shareholders when the executive dies. Therefore, our empirical results on the shareholder wealth effects of unexpected executives' deaths may not generalize to other types of employment terminations.

[2] A given period's manager-specific quasi-rent equals the difference between the value of the manager's productive activities and the avoidable costs of employing the manager, including the opportunity cost of hiring the next best alternative manager. Unlike monopoly rents, which occur because of restrictions to market entry, quasi-rents arise naturally in a multi-period world when current period investments are made with the expectation of future period returns. See Klein, Crawford and Alchian (1978) for a more detailed discussion of the distinction between monopoly rents and quasi-rents.

capital, since the firm must hire a replacement and expend additional resources to identify and/or develop the new manager's firm-specific abilities. This adverse shareholder wealth effect would be reflected in a *negative* share price response to the manager's unexpected death.

The preceding discussion assumes that shareholders control access to a unique productive opportunity. In other cases, access to the productive opportunity may lie with the prospective manager, as in the case of a corporate founder taking the firm public. In this situation, the rents arising from access to the productive opportunity will accrue to the founder-manager, rather than to shareholders. If these rents take the form of a compensation package that exceeds the market-clearing price for the founder's managerial services, termination of the employment relationship enables shareholders to negotiate a more favorable employment agreement with a professional manager. This favorable wealth effect would be reflected in a *positive* share price reaction to the founder-manager's unexpected death.

To the extent that the incumbent manager's abilities are transportable (general) rather than firm-specific, the expected value of those abilities will be reflected in the market price of the manager's services. This market price varies with organizational performance because performance outcomes provide new information regarding the talents and characteristics of the manager (i.e., the manager's job-related skills and tastes for on-the-job consumption of perquisites). If shareholders and the incumbent manager can costlessly renegotiate the employment arrangement on a continual basis, the manager's compensation varies with organizational performance [Fama (1980) and Fama and Jensen (1983)]. Under costless recontracting, shareholders and the incumbent manager are free to terminate the employment relationship at each recontracting point, and the incumbent manager's continued employment is ensured only if the compensation package offered by shareholders is at least as attractive as those packages available to the manager in the labor market. Shareholder wealth is independent of the incumbent manager's continued employment in this scenario since the manager's compensation is continually adjusted for new information about the manager's abilities and characteristics, as is the market-clearing price for all potential replacement managers. In this case, no common stock price reaction to the unexpected death of the incumbent manager is predicted.

A number of contractual arrangements make it costly for shareholders or the incumbent manager (or both) to renegotiate or terminate the employment relationship. Manager-initiated wage recontracting is costly if stock options, deferred compensation, restricted stock or other forms of managerial wealth are forfeited when the manager voluntarily leaves the firm. If the incumbent manager cannot costlessly renegotiate or terminate the employment relationship and the manager's abilities are perceived to be more valuable than was anticipated at the time of negotiation of the current compensation package,

shareholders earn positive quasi-rents from the continued employment of the manager. This benefit accruing to shareholders ceases when the employment relationship is terminated and the firm must 'meet the market' for a replacement manager. Under this scenario, there is a *negative* stock price reaction to the incumbent manager's unexpected death.

When the performance of the incumbent manager is less favorable than shareholders anticipated, and impediments exist that deter shareholders from reducing the manager's compensation or dismissing the manager, continued employment of the manager may impose negative quasi-rents on shareholders.[3] For example, shareholders frequently agree to multi-period employment contracts that guarantee the manager's position and compensation for the duration of the contract period regardless of the firm's performance.[4] Alternatively, shareholder-initiated wage recontracting (i.e., direct renegotiation or dismissal, or indirect dismissal via a proxy contest or hostile takeover) is costly if the manager controls a relatively large proportion of the firm's voting shares. Even in the absence of significant share ownership, an intransigent manager may take actions that increase the cost of proxy contests or decrease the probability of a hostile takeover. The incumbent manager's death enables shareholders to hire a replacement manager without incurring the costs of dismissing or recontracting with the former manager. Such conditions should produce a *positive* common stock price reaction to the unexpected death of the incumbent manager.

2.2. *Summary and general hypotheses*

The preceding analysis leads to the following hypotheses about the reaction of common stock prices to the unexpected death of an incumbent manager. First, in the absence of differences between the value to shareholders of the incumbent manager's services and those of the replacement manager, no common stock price reaction to the manager's unexpected death should be

[3] Even though multi-period employment contracts impose transaction costs when recontracting occurs prematurely, they may not constitute an inefficiency at the time of initial contracting. Lambert (1983) demonstrates that bilateral commitment, where both the principal (shareholders) and agent (manager) commit to a two-period contract, is Pareto-superior to unilateral (principal only) commitment in a two-period agency situation. Medoff and Abraham (1980) present empirical evidence indicating that while compensation increases with experience, employee performance does not. Medoff and Abraham suggest that this result might arise from implicit contracts that guarantee employees annual pay increases regardless of their actual performance. This type of employer/employee relationship may be efficient if risk-neutral employers are bearing the 'ability risk' for risk-averse employees.

[4] Harris and Holmstrom (1982) examine a model where the principal (shareholders) commits to a multi-period contract but the agent (manager) may force renegotiation. While the principal expects to break even at the outset of the contract, the expected profit of the principal at every succeeding point in time is shown to be less than or equal to zero implying that the agent's continued employment entails negative quasi-rents.

observed. We refer to this 'no effects' hypothesis as the null hypothesis. Alternatively, if the manager's employment contract is costly to renegotiate or terminate during the contract period or if the manager possesses firm-specific human capital that would be costly to replace, shareholder wealth is affected by the termination of the employment relationship.

The observed share price reaction is predicted to be *negatively* correlated with variables that measure the expected value of the incumbent manager's firm-specific human capital, the extent to which the manager is 'more talented' than previously anticipated, and the magnitude of transaction costs that discourage the manager from renegotiating or terminating the employment agreement. Conversely, observed price changes are predicted to be *positively* correlated with the manager's status as a corporate founder, and with variables that measure the extent to which the manager is 'less talented' than previously anticipated and the manager's ability to deter dismissal or renegotiation of the employment contract.

3. Sample selection procedures and descriptive characteristics

The preceding analysis predicts that certain multi-period managerial employment arrangements affect shareholder wealth, and result in common stock price adjustments when there is an unanticipated termination of the employment relationship. Three considerations influenced our decision to test this prediction by examining only those common stock price reactions that occur following the unexpected death of a senior corporate executive. First, shareholder wealth effects are likely to be larger for key corporate executives than for other employees of the firm. Second, the death of a senior executive tends to be a highly visible corporate event, reported by the financial press and various news media. Finally, our ability to detect share price adjustments directly attributable to the employment relationship is considerably enhanced by restricting the empirical tests to instances where termination of the employment relationship was *unexpected* (i.e., not anticipated by market participants), and not confounded by other firm-specific events such as organizational policy disputes. For these reasons, we chose not to investigate instances of executive resignation, dismissal, or death from prolonged illness.

3.1. Sample selection

The sample consists of 53 sudden deaths of senior corporate executives (i.e., chairman of the board, chief executive officer, or president) which occurred between January 1, 1971 and December 31, 1982. A preliminary sample of 210 events was identified by examining all obituary notices announcing the death of a senior corporate executive published between 1971 and 1982 in the *Wall Street Journal Index*. The date and cause of death were verified by examining

obituaries published in the *Wall Street Journal*, *New York Times*, or regional newspapers, and from information contained in corporate proxy statements, annual reports, and Form 10-K's filed with the Securities and Exchange Commission (SEC). These same sources provided information about the executive's age, position in the firm's management hierarchy, tenure with the firm, and the executive's direct or beneficial ownership of the firm's common stock.

The following sample selection criteria were imposed in order to increase the likelihood that any security price effects observed were attributable solely to the executive's death:

(1) The deceased executive was employed by a company whose daily common stock returns are included in the CRSP data file and both the announcement date and date of death were determinable and not coincident with some other firm-specific announcement.
(2) The cause of death was not attributed to 'prolonged illness', 'complications following surgery' or indeterminate.

The sample selection criteria restrict the final sample to events involving top level corporate executives of publicly held corporations listed on the New York or American stock exchanges, and minimize the probability that market participants anticipated the event or that new information regarding firm-specific confounding events (i.e., changes in firm asset values or risk characteristics) was being released in close proximity (± 10 trading days) to the event.

Of the 210 senior executive deaths included in the preliminary sample, 93 events were disqualified from further consideration because the cause of death was attributed to 'prolonged illness', 'complications following surgery', or was indeterminate. Fifty-six events were disqualified because daily common stock return data are not in the CRSP file, and eight events were excluded because potentially confounding firm-specific news releases (announcing defense contract awards, litigation, and impending sales of assets) were published in the

Table 1

Distribution of senior executive unexpected death announcements in the period 1971–1982 (53 observations).

Year	Number of announcements	Year	Number of announcements
1971	6	1977	7
1972	6	1978	6
1973	3	1979	6
1974	3	1980	4
1975	3	1981	4
1976	3	1982	2

Wall Street Journal during the 21-day period surrounding the executive's death. Table 1 presents the distribution of executive deaths over the period 1971 through 1982 for the 53 events retained in the final sample. These sample events correspond to 53 different firms representing a diversity of industry classifications.

3.2. Sample characteristics

Summary statistics describing selected characteristics of the executives and the events are presented in table 2. The executives' age at the time of death ranged from 48 to 86 years, with the average being 61.8 years. Approximately 19 percent of the executives were at least 70 years old while almost 7.5 percent were no more than 50 years old. On average, the executives had been employed by their respective corporations for 23 years. Thirty percent of the executives had been with the firm for at least 30 years while only 6 percent of the sample had been employed by the firm for 5 years or less.

Seventy-two percent of the executives held the position of board chairman when they died, and almost two-thirds of those individuals (43.4% of the sample) were also employed as the chief executive officer by their respective corporation. Thirteen individuals (24.5%) held the position of chief corporate officer but not board chairman, and 4 percent were neither CEO nor board chairman. On average, these executives had occupied their current position with the firm for 13.5 years. Eighteen percent had held that position for at least 20 years while 28 percent of the sample had occupied their current position for 5 years or less. Fifteen individuals (28.3%) were identified as corporate founders.

A number of the executives included in the sample directly or beneficially owned a significant proportion of their firm's outstanding common stock. Twenty-six percent of the sample controlled at least 5 percent of the common shares outstanding, while 47 percent of the executives controlled no more than 1 percent of the firm's shares. Share ownership averaged 9.5 percent, and ranged from zero to seventy-six percent of the outstanding common shares.

Statistics on the cause of death underscore the unexpected nature of the sample events. Heart attack was cited as the cause of death in 26 cases (49.1%); 12 events (22.6%) were attributed to accidents (typically automobile or plane crashes) or suicides; 6 events (11.3%) involved 'brief illnesses' of an undisclosed type; and the remaining 9 deaths (17.0%) were attributed to a variety of causes including cerebral hemorrhage and embolism.

Among published sources, the earliest public announcement of the executive's death is typically provided by the *Wall Street Journal* obituary. For twenty-eight events (52.8% of the sample), publication of the obituary occurred one trading day after the executive's death. In 19 cases (35.9%), publication of the obituary occurred two trading days after the executive's death. For the remaining 6 events (11.3%), the executive's death occurred on a day the market was closed

Table 2

Summary statistics for 53 instances of senior executive unexpected death in the period 1971–1982.

Characteristics of the executives		
1.	Age time of death:	
	Mean age	61.8 years
	Executives who were 70 or older	18.9%
	Executives who were 50 or younger	7.5%
2.	Years employed by the firm:[a]	
	Mean years with the firm	23.0 years
	With the firm 30 years or more	30.0%
	With the firm 5 years or less	6.0%
3.	Position in the firm:	
	Board chairman	71.7%
	Board chairman & chief executive officer	43.4%
	Chief executive officer but not chairman	24.5%
	Neither chief executive nor chairman	3.8%
	Corporate founder	28.3%
4.	Years in current position:[a]	
	Mean years in current position	13.5 years
	In current position 5 years or less	28.0%
	In current position 20 years or more	18.0%
5.	Proportion of the firm's outstanding common shares controlled by the executive:[a]	
	Mean percent controlled	9.5%
	Executives controlling 5% or more	26.4%
	Executives controlling 1% or less	47.2%
Characteristics of the event		
6.	Cause of death:	
	Death attributed to heart attack	49.1%
	Death attributed to accidents or suicides	22.6%
	Death that followed brief illnesses	11.3%
	Death attributed to embolism, hemorrhage, etc.	17.0%
7.	Number of trading days between the date of death and publication of the *Wall Street Journal* obituary:	
	Obituary delayed 0 trading days	11.3%[b]
	Obituary delayed 1 trading day	52.8%
	Obituary delayed 2 trading days	35.9%

[a] Only 50 events are represented in the summary statistics for these items because data for the remaining 3 events were unobtainable.

[b] These events represent instances where death occurred on a non-trading day and the obituary was published on the next trading day.

(typically a Saturday or Sunday) and the obituary was published on the next trading day.

4. Empirical results

Two empirical tests are utilized to investigate the common stock price response to news of a senior executive's unexpected death. First, common

stock returns in trading periods coincident with the executive's death are examined for evidence of abnormal share price behavior. Second, a cross-sectional analysis of stock price reactions is performed to determine if the observed price adjustments are consistent with the individual shareholder wealth effects enumerated in section 2. The empirical methods and test results are described below.

4.1. Common stock returns test procedures

The single-factor market model [Fama (1976)] is assumed to characterize daily stock returns. Daily returns of the firms and the equally-weighted market index were collected from the CRSP tape for each of the 53 events for a 21-day test period (day -10 to day $+10$) and a 100-day estimation period (day -111 to day -11). The *event date* (day 0) is defined as the trading day of the executive's death or the first trading day following the event, if death occurred on a non-trading day.

The excess daily returns ($\hat{\varepsilon}_{jt}$) for each stock are estimated by

$$\hat{\varepsilon}_{jt} = R_{jt} - \left(\hat{\alpha}_j + \hat{\beta}_j R_{mt}\right), \tag{1}$$

for day -10 to day $+10$, where R_{jt} is the continuously compounded rate of return for stock j on day t, R_{mt} is the continuously compounded rate of return for the CRSP equally-weighted index on day t, $\hat{\alpha}_j$ is the (estimated) rate of return on stock j when $R_{mt} = 0$, and $\hat{\beta}_j$ is the (estimated) systematic risk of stock j. The market model coefficients $\hat{\alpha}_j$ and $\hat{\beta}_j$ are Ordinary Least Squares (OLS) estimates obtained from a 100-trading-day period ending 11 days prior to the event date.[5]

For 6 of the 53 sample events, publication of the *Wall Street Journal* obituary coincides with the event date (day 0) because the executive died on a non-trading day and the obituary appeared on the first trading day following the death. Any share price reaction associated with these events is therefore likely to occur on day 0. However, for approximately 89 percent of the sample, the *Wall Street Journal* obituary was published at least one trading day after the executive's death (see table 2). It is unclear when information about these 47 events became available to market participants since, in a handful of cases, obituary announcements published in other national or regional newspapers are known to have preceded publication of the *Wall Street Journal* obituary. Thus, the share price reaction for firms where the *Wall Street Journal* obituary appeared two trading days after the event (35.9% of the sample) may occur on

[5] Excess daily returns were also computed using Scholes–Williams (1977) estimates of the market model coefficients to compensate for non-synchronous trading problems inherent in daily stock return data. The results obtained using this procedure were virtually identical to those obtained using the OLS estimates.

the event date (day 0), on the obituary publication date (day +2) or over the entire three-day period (day 0 to day +2). To enhance our ability to detect share price adjustments associated with the executive's death, the empirical tests focus on a firm-specific *announcement period*, defined as the trading period from the event date through the publication date of the *Wall Street Journal* obituary. If the executive's death is not anticipated, any security price reaction should take place during the announcement period.

The excess daily returns ($\hat{\varepsilon}_{jt}$) for each firm were cumulated over the firm-specific announcement period, and all excess returns were standardized by the estimated standard error of the predicted returns of the market model.[6] Announcement period excess returns were further standardized using a factor reflecting the increase in variability due to cumulation over the firm-specific announcement period.[7] The resulting standardized excess return is denoted s_{jt} where t_{-1} corresponds to the trading day preceding the executive's death, t_0 corresponds to the firm-specific announcement period, and t_{+1} corresponds to the trading day following publication of the *Wall Street Journal* obituary.

The average standardized excess return can be examined for statistical significance using standard normal theory tests [Patell (1976) and Dodd (1980)].[8] However, since the theoretical arguments of section 2 predict that the s_{jt} observed for any single security represents an aggregation of several positive and negative price effects, there is no *a priori* reason to believe that the same price effect pertains to all securities. If positive and negative announcement

[6]For each security j, the excess return for each day of the test period is standardized by the square root of its estimated forecast variance to form a standardized excess return:

$$s_{jt} = \hat{\epsilon}_{jt} \Bigg/ \left(\sigma_j \cdot \left[1 + \frac{1}{L} + \left((R_{mt} - \bar{R}_m)^2 \Big/ \sum_{T=1}^{L} (R_{mT} - \bar{R}_m)^2 \right) \right]^{1/2} \right),$$

where σ_j^2 is the estimated residual variance from the market model regression for security j, $\bar{R}_m$ is the average market return over the L days used for the regression, and R_{mT} is the return to the market index at day T.

[7]The announcement period standardized excess return is computed by summing the standardized excess returns for each of the $(d_{2j} - d_{1j} + 1)$ days of the announcement period, where d_{1j} and d_{2j} designate the firm-specific event date and the *Wall Street Journal* obituary publication date, respectively,

$$w_j = \sum_{t=d_{1j}}^{d_{2j}} s_{jt} \Big/ \sqrt{d_{2j} - d_{1j} + 1}\,.$$

[8]The statistical significance of the average excess return on day t for the N sample firms can be tested using the statistic

$$Z = \sum_{j=1}^{N} s_{jt} \Big/ \left(\left[N \cdot \frac{L-2}{L-4} \right]^{1/2} \right),$$

where s_{jt} denotes the standardized excess return on day t for firm j obtained from the market model regression estimated over L trading days. Tests of announcement period standardized excess returns are constructed in a straight-forward manner by replacing s_{jt} with the appropriately defined w_j. In the absence of abnormal performance, Z is assumed to be distributed unit normal.

period excess returns are observed in the sample, the average standardized excess return may not be statistically different from zero even though statistically significant (but offsetting) individual share price adjustments are associated with the event. Accordingly, the announcement period excess returns are also examined for evidence of abnormal cross-sectional dispersion.

4.2. *Excess returns and senior executive deaths*

Table 3 presents a time series of excess portfolio returns for the 15 trading days around the firm-specific announcement period (t_0) for the sample of 53 executive deaths. Column 1 identifies the trading day relative to the announcement period, column 2 reports the portfolio daily excess return, the number of positive and negative excess returns for each trading day are reported in column 3, and column 4 reports the cumulative average excess return for the test period. The portfolio standardized excess return ($\bar{s}_t$) for each trading day is presented in column 5.

Table 3

Percentage common stock excess returns and standardized excess returns over a 15-day period around the announcement of the executive's death for 53 events in the period 1971–1982.[a]

	Excess returns			Average standardized excess return
Trading day	Mean return	No. positive: No. negative	Cumulative average return	
−10	0.25	28:25	0.25	0.17
− 9	0.14	23:30	0.39	0.12
− 8	0.83	29:24	1.22	0.25[b]
− 7	−0.07	24:29	1.15	−0.01
− 6	−0.13	21:32	1.02	−0.04
− 5	0.44	22:31	1.46	0.07
− 4	−0.15	21:32	1.31	−0.03
− 3	−0.12	24:29	1.19	−0.03
− 2	−0.21	24:29	0.98	−0.06
− 1	−0.09	25:28	0.89	−0.03
0	0.40	24:29	1.29	0.12
1	0.34	25:28	1.63	0.19
2	0.30	27:26	1.93	0.06
3	0.60	33:20	2.53	0.22
4	0.63	30:23	3.16	0.17
5	−0.08	26:27	3.08	0.02

[a]Announcement period (day 0) excess returns are cumulated over the firm-specific trading period (1, 2 or 3 days) that begins on the date of the executive's death and ends on the publication date of the *Wall Street Journal* obituary. Accordingly, day −1 denotes the trading day preceding the executive's death, and day + 1 corresponds to the trading day following publication of the *Wall Street Journal* obituary.

[b]Significant at the 10% level.

The data in table 3 indicate that (on average) a small, positive share price adjustment is associated with the unexpected deaths of senior corporate executives. The average portfolio excess return for the 10-day period immediately preceding the executives' deaths is +0.89%. By contrast, a +0.40% announcement period (t_0) average excess return was detected, although this portfolio excess return is not statistically different from zero (standardized excess return of +0.12, $Z = 0.86$). Announcement period excess returns ranged from −10.3 percent to +20.4 percent (standardized excess returns from −2.52 to +5.53) with ten firms exhibiting statistically significant announcement period excess returns (7 positive and 3 negative, $p \leq 10\%$). The probability of observing ten statistically significant excess returns by chance is less than 1.6 percent (binomial test using a prior probability of 0.10).

Table 4 reports the dispersion of standardized excess returns for the announcement period and for each of the 10 trading days preceding the announcement period. Three statistics are employed to describe the dispersion of standardized excess returns: (1) a conventional cross-sectional standard deviation, (2) a jackknifed estimate of the cross-sectional standard deviation, and (3) a mean squared standardized excess return. The statistical significance of each jackknifed standard deviation was assessed using Miller's asymptotically distribution-free jackknife test [Hollander and Wolfe (1973)], and a

Table 4

Tests for increased dispersion of announcement period excess returns for 53 instances of senior executive unexpected death in the period 1971–1982.[a]

	Announcement period	Pre-announcement trading days				
		−1	−2	−3	−4	−5
Conventional standard deviation	1.55	1.08	0.89	1.00	1.06	1.29
Jackknifed standard deviation (Miller's t)	2.52 (2.90)[b]	0.78 (−1.03)	1.14 (0.40)	1.23 (0.97)	0.74 (−1.67)	1.47 (1.41)
Mean squared return (Patell's Z)	2.37 (6.71)[b]	1.16 (0.67)	0.77 (−1.23)	0.98 (−0.20)	1.10 (0.38)	1.63 (3.01)[b]
	Announcement period	Pre-announcement trading days				
		−6	−7	−8	−9	−10
Conventional standard deviation	1.55	1.19	0.85	1.10	1.04	0.87
Jackknifed standard deviation (Miller's t)	2.52 (2.90)[b]	1.86 (1.17)	1.16 (0.55)	1.02 (0.11)	0.81 (−0.81)	1.22 (0.74)
Mean squared return (Patell's Z)	2.37 (6.71)[b]	1.39 (1.84)[b]	0.71 (−1.53)	1.24 (1.11)	1.08 (0.28)	0.77 (−1.22)

[a]A statistically significant value indicates that the observed distribution of standardized excess returns exhibits greater dispersion than is expected under the null hypothesis that excess returns are distributed unit normal.

[b]Significant at the 10% level.

normal theory test [Patell (1976)] was used to assess the significance of the mean squared standardized excess returns.[9,10]

The results in table 4 indicate that announcement period excess returns are indeed characterized by abnormal dispersion (jackknifed standard deviation of 2.52, $t = 2.90$; mean squared s_{jt} of 2.37, $Z = 6.71$). In contrast, only two of the daily excess return distributions in the pre-announcement period (t_{-5} and t_{-6}) seem to exhibit unusually large cross-sectional variance, and the magnitude of the dispersion observed on those two trading days is considerably smaller than that exhibited by announcement period excess returns.[11] These results suggest that potentially important share price adjustments are associated with the unexpected deaths of senior corporate executives even though the average announcement period standardized excess return for the sample is not statistically different from zero.

[9]Miller's asymptotically distribution-free jackknife test [Hollander and Wolfe (1973)] for determining if the excess returns on day t exhibit unusually large cross-sectional dispersion is constructed in the following manner. For $i = 1, \ldots, N$ define the natural log of the sample variance after deleting the $j = i$ standardized excess return as

$$S_i = \ln \sum_{\substack{j=1 \\ j \neq i}}^{N} (s_{jt} - \bar{s}_{it})^2/(N-2) \quad \text{where} \quad \bar{s}_{it} = \sum_{\substack{j=1 \\ j \neq i}}^{N} s_{jt}/(N-1).$$

Define $A_i = N \cdot S_0 - (N-1) \cdot S_i$ where S_0 is the natural log of the sample variance computed using all N standardized excess returns. Compute the jackknifed estimate of the sample variance as

$$\bar{A} = (1/N) \sum_{i=1}^{N} A_i \quad \text{where} \quad V = (1/N(N-1)) \sum_{i=1}^{N} (A_i - \bar{A})^2$$

is the squared standard error of the jackknifed estimate. The statistical significance of the jackknifed sample variance estimate is tested using the statistic: $Q = \bar{A}/\sqrt{V}$. In the absence of abnormal cross-sectional dispersion in excess returns, Q is assumed to be t-distributed. Tests of abnormal cross-sectional dispersion in announcement period excess returns are constructed by replacing s_{jt} with the appropriately defined w_{jt}.

[10]The normal theory test [Patell (1976)] to determine if the excess returns for day t exhibit unusually large cross-sectional dispersion requires computation of the squared standardized excess return (s_{jt}^2) for each security. The statistical significance of the s_{jt}^2 is tested using the statistic

$$Z = \left[\sum_{j=1}^{N} \left(\frac{L-4}{L-2} \cdot s_{jt}^2 - 1 \right) \right] \Bigg/ \left[2 \cdot N \cdot \frac{L-3}{L-6} \right]^{1/2},$$

where L denotes the number of days used to estimate the market model. Tests of abnormal cross-sectional variance in announcement period excess returns are constructed by replacing s_{jt}^2 with the appropriately defined w_j^2. In the absence of abnormal share price performance during the test period, Z is assumed to be distributed unit normal. However, caution must be exercised when interpreting the results of the normal theory test. Since the test statistic is constructed directly from the s_{jt}, it provides a joint test of mean and variance effects when the observed value of the s_{jt}'s differ from the expected value of zero.

[11]Marais (1984) has shown that empirical distributions of standardized excess returns tend to be fat-tailed relative to the null (Gaussian) distribution, and therefore the normal theory test described in footnote 10 may reject the null hypothesis more frequently than is statistically appropriate. Miller's asymptotically distribution-free jackknife test is less sensitive to these problems; however, normal theory statistics are reported so that our results can be compared with those of prior capital market studies. Further, it should be noted that Marais' results may partially

Table 5

Average percentage excess returns and standardized excess returns for selected subsamples over a 15-day period around the announcement of the executive's death.[a]

	FOUNDER		NON-FOUNDER			
			Other causes		Brief illness	
Trading day	Excess return	Stdzd. excess return	Excess return	Stdzd. excess return	Excess return	Stdzd. excess return
−10	0.46	0.30	0.14	0.11	0.32	0.17
− 9	0.69	0.36	−0.08	0.03	−0.08	−0.04
− 8	0.37	0.20	1.02	0.25	0.96	0.37
− 7	−0.59	−0.29	0.15	0.10	0.08	0.10
− 6	−0.28	−0.18	−0.25	−0.03	0.91	0.26
− 5	0.53	0.30	0.32	−0.11	0.87	0.47
− 4	−0.31	−0.08	−0.07	−0.01	−0.17	0.00
− 3	0.43	0.09	−0.28	−0.05	−0.62	−0.21
− 2	−0.11	−0.07	−0.36	−0.14	0.32	0.37
− 1	−0.75	−0.28	0.13	0.08	0.39	0.03
0	3.50	1.04[b]	−1.16	−0.33[b]	0.94	0.23
1	0.06	0.11	0.51	0.19	0.15	0.39
2	−0.96	−0.31	0.93	0.25	0.11	−0.04
3	0.39	0.15	0.80	0.24	0.06	0.29
4	0.95	0.28	0.32	0.05	1.48	0.51
5	0.06	0.01	−0.09	0.06	−0.38	−0.15
Sample size	15		32		6	

[a]Announcement period (day 0) excess returns are cumulated over the firm-specific trading period (1, 2, or 3 days) that begins on the date of the executive's death and ends on the publication date of the *Wall Street Journal* obituary. Accordingly, day −1 denotes the trading day preceding the executive's death, and corresponds to the trading day following publication of the *Wall Street Journal* obituary.

[b]Significant at the 10% level.

The existence of heterogeneous share price adjustments is further underscored in table 5 which presents average excess returns and standardized excess returns around the announcement period for two mutually-exclusive subsamples: portfolio FOUNDER ($n = 15$) corresponding to events where the executive was identified as a founder of the corporation; and portfolio NON-FOUNDER ($n = 38$) consisting of the remaining sample events. These two subsamples were selected for investigation because they represent distinctly different managerial employment settings in that corporate founders are

explain why the jackknife test and normal theory test yield differing results for days −5 and −6 in table 4.

In addition to the analysis summarized in table 4, Miller's two-sample jackknife test [Hollander and Wolfe (1973)] was used to assess whether the dispersion of announcement period standardized excess returns exceeds that observed on individual trading days during the 10-day pre-announcement period. The null hypothesis of equal dispersion was rejected in 7 of the 10 comparisons (exceptions being days −2, −5 and −6).

not 'hired' by outside shareholders. If founders capture a larger share of the benefits of the employment relationship in their compensation, then the replacement of a founding executive should give shareholders a more valuable stream of future net benefits. The NON-FOUNDER subsample was further partitioned into two groups according to whether the executive's death followed a 'brief illness' ($n = 6$) or was attributed to other causes ($n = 32$). The 'brief illness' subgroup was selected because of the possibility that market participants received information about the executive's health in advance of the event date, in which case price adjustments occurring prior to the executive's death would reflect the shareholder wealth effects associated with impending cessation of the employment relationship.

Over the 10-day period preceding t_0, the cumulative excess return for the FOUNDER and NON-FOUNDER subsamples are +0.12% and +1.06%, respectively, with NON-FOUNDER–Brief Illness events exhibiting a +3.02% cumulative excess return while the NON-FOUNDER–Other Causes portfolio experienced a −0.70% cumulative excess return. Moreover, none of the daily excess returns over this 10-day period for any of the subsamples are statistically different from zero. In contrast, the average announcement period excess return for FOUNDER subsample firms is +3.50% (mean standardized excess return of +1.04, $Z = 3.99$), while NON-FOUNDER sample events are associated with a −0.83% average announcement period excess return (mean standardized excess return of −0.24, $Z = -1.47$). When 'brief illness' events are excluded, the average announcement period excess return for the remaining NON-FOUNDER sample firms is −1.16% (mean standardized excess return of −0.33, $Z = -1.85$). Thus, while FOUNDER subsample firms experienced a statistically significant *positive* announcement period share price adjustment, NON-FOUNDER–Other Causes events are associated with a statistically significant *negative* announcement period price reaction.

In summary, the market reaction test results indicate that the common stocks of firms experiencing the sudden death of a senior corporate executive do not exhibit significant average excess returns during the trading period between the executive's death and its announcement in the *Wall Street Journal*. However, announcement period excess returns are characterized by unusually large cross-sectional dispersion, and important (but heterogeneous) price adjustments occurred among selected groups of sample firms. The cross-sectional tests described in the next section investigate whether the price adjustments documented here are consistent with the theoretical arguments of section 2.

4.3. Cross-sectional analysis of excess returns

The share price reaction that occurs in response to the unexpected death of a senior corporate executive is hypothesized to vary inversely with the net benefit stream shareholders would have earned from the incumbent executive's continued employment. In section 2, we identified a number of factors that

determine the sign and magnitude of that net benefit stream, and in this section we utilize measures of those factors to analyze the cross-sectional behavior of the share price reactions to the unexpected executive deaths.

As previously discussed, we predict that the net benefit stream from an incumbent executive's continued employment will be influenced by the executive's status as a corporate founder. The initial contracting between the executive and outside shareholders will depend on whether the employment setting is characterized as one in which a corporate founder seeks outside equity financing or existing shareholders seek a professional manager. We predict that founders are able to negotiate a larger share of the benefits created by the employment relationship, and this prediction is partially supported by the relatively large positive share price reaction to founder deaths reported in table 5. In the cross-sectional analysis, the variable *FNDR* was set equal to 1.0 if the executive was identified as a corporate founder; otherwise *FNDR* was set equal to zero. Announcement period excess returns are predicted to be *positively* correlated with this variable.

Substantial differences in decision-making authority are likely to exist among the sample of 53 senior corporate executives since nearly one-third of the sample (17 individuals) were employed in some capacity other than that of CEO. We hypothesize that the firm's CEO has unique opportunities to acquire firm-specific (or position-specific) human capital, and that the share price reaction to an executive's unexpected death will vary inversely with the degree to which other executives in the firm possess similar abilities. The decision-making responsibility and uniqueness of the abilities possessed by an executive are presumed to be positively related to the executive's compensation relative to that of other employees in the firm. Accordingly, the variable *POSITION* was defined as the incumbent executive's direct compensation paid in the year preceding death, divided by the direct compensation of the most highly paid corporate officer (excluding the deceased executive) for that same year. Therefore, the variable *POSITION* will take on high values for deceased executives who were paid considerably more than any of the firm's other executives, and values close to zero for cases where the executive is a retired CEO who receives little or no direct compensation but retains the title of Chairman of the Board. Announcement period excess returns are predicted to be *negatively* correlated with the *POSITION* variable, reflecting the loss of managerial abilities which have no close substitutes within the firm.

Announcement period excess returns are predicted to be *negatively* correlated with recent firm performance because performance outcomes provide new information about the executive's abilities and characteristics. Recent firm performance was measured by a composite variable incorporating industry-adjusted sales growth, profitability, and returns to shareholders, each averaged over the three-year period preceding the executive's death. *SALES GROWTH* was defined as the firm's annual percentage change in total revenue minus the corresponding fiscal-year median percentage change in total revenues for the

industry, averaged over the three-year period ending with the fiscal year immediately preceding the executive's death (if death occurred during the first half of a fiscal year) or the fiscal year of death (if death occurred during the second half of a fiscal year). Three-year industry-adjusted values for *PROFITS* (reported earnings divided by the book value of shareholders' equity) and shareholder *RETURNS* (annual share price change plus dividends, divided by the share price at the beginning of the year) were defined in an analogous manner. In order to reduce multicollinearity in the cross-sectional regression model, these three performance measures were subjected to a principal components analysis and a single composite (*ABILITY*) was defined as[12]

$$ABILITY = 0.40(SALES\ GROWTH) + 0.44(PROFITS) + 0.49(RETURNS). \quad (2)$$

Since principal components analysis rescales each right-hand side variable to have a mean of zero and standard deviation of one, the composite variable *ABILITY* also has a mean of zero. Announcement period excess returns are predicted to be *negatively* associated with this measure of managerial ability.

If recent firm performance is used to reassess transportable (general) abilities, the benefits (or costs) from continued employment accrue to shareholders only if one of the contracting parties (outside shareholders or the incumbent manager) can impose transaction costs on the other party's recontracting initiatives. In this case, the shareholder wealth effects associated with the executive's continued employment are jointly dependent upon ability reassessment and costly recontracting. The *ABILITY* variable presumably serves as a measure of changes in the assessed talents of the executive, but proxies for the contracting parties' ability to impose transaction costs are difficult to isolate. Two distinct recontracting scenarios were examined in section 2.

If an incumbent executive has performed poorly (negative values for *ABILITY*) and can impose transaction costs that limit shareholder-initiated recontracting (dismissal, demotion or compensation reduction), shareholders will bear at least a portion of the costs associated with the executive's continued employment. The fraction of the firm's outstanding common shares controlled by the incumbent executive (*SHARES*) was used as a proxy for the executive's ability to impose transaction costs on outside shareholders' recontracting

[12] Principal component analysis [Harman (1976)] was used to identify the common dimensions underlying the managerial ability variables (*SALES GROWTH*, *PROFITS*, and *RETURNS*). A factor loading in excess of 0.60 was required for a variable to be retained in the analysis and all three variables satisfied this criterion. The principal component analysis produced a relatively 'clean' single-factor solution (factor loadings ranged from 0.68 to 0.83) and explained 56.3% of the cross-sectional variance in the original set of variables. The factor coefficients obtained from this solution were used to define the composite variable *ABILITY* as a weighted linear combination of the original (standardized) variables, as indicated in eq. (2).

initiatives since the more shares an incumbent executive controls, the more difficult it is for outside shareholders to force the executive's dismissal or demotion, or reduce the executive's compensation.[13] The costs shareholders bear as a consequence of the combination of poor executive performance and executive-imposed transaction costs is represented by the variable *SCOST*, defined as

$$\begin{aligned} SCOST &= ABILITY \cdot SHARES \quad \text{if} \quad ABILITY < 0, \\ &= 0, \qquad\qquad\qquad\quad \text{otherwise.} \end{aligned} \tag{3}$$

In this scenario, lower *SCOST* values imply that outside shareholders bear higher continued employment costs, costs that are avoided if the executive dies. Therefore, the variable *SCOST* is predicted to be *negatively* correlated with announcement period excess returns.

On the other hand, if the executive's performance has led to favorable reassessments of his abilities (positive values for *ABILITY*) and shareholders can impose transaction costs on the incumbent executive's recontracting initiatives (deter voluntary departure or wage recontracting), then at least a portion of the benefits associated with the executive's continued employment will accrue to shareholders. Transaction costs incurred by an executive who voluntarily terminates the employment relationship include the loss of deferred compensation, non-vested retirement benefits, and so on. Unfortunately, the limited disclosure of these aspects of compensation, and the lack of sufficient information to assess their significance to executive wealth, precludes their use as measures of transaction costs associated with the executive's voluntary departure.

An alternative approach recognizes that ownership of the firm's common shares enables the incumbent executive to capture a portion of the continued employment benefits that would otherwise accrue only to outside shareholders. The remaining benefits, which the executive could capture only by terminating the employment contract and re-entering the managerial labor market, decrease as the executive's shareholdings increase. In this sense, the *SHARES* variable provides a measure of the degree to which the executive is unwilling to incur the transaction costs of accepting alternative employment opportunities with a higher current compensation package. Favorable ability reassessment, in conjunction with large share ownership by the executive, enables shareholders to capture some of the economic benefits associated with the executive's continued employment. The combination of high executive performance and executive share ownership is represented by the variable *SBENEFIT*, defined

[13]As a shareholder, the poorly performing incumbent executive also bears a portion of these continued employment costs. We assume that a rational executive will remain an employee of the firm as long as the expected benefits from employment (e.g., compensation in excess of a market-clearing price) are greater than the costs imposed on the executive as a shareholder.

as

$$SBENEFIT = ABILITY \cdot SHARES \quad \text{if} \quad ABILITY \geq 0,$$
$$= 0 \qquad\qquad\qquad\qquad \text{otherwise.} \tag{4}$$

To the extent that *SHARES* is a measure of the executive's willingness to forego alternative employment opportunities, the variable *SBENEFIT* is predicted to be *negatively* correlated with announcement period excess returns. However, large shareholdings may also enable an incumbent executive to force wage recontracting when abilities are favorably reassessed, and to thereby capture all of the continued employment benefits through increased compensation. If this latter possibility occurs, the variable *SBENEFIT* will be uncorrelated with announcement period excess returns.

The final form of the cross-sectional regression model (with the predicted signs) is given by

$$s_j = \beta_0 + \underset{(+)}{\beta_1}(FNDR_j) + \underset{(-)}{\beta_2}(POSITION_j) + \underset{(-)}{\beta_3}(ABILITY_j)$$
$$+ \underset{(-)}{\beta_4}(SCOST_j) + \underset{(-)}{\beta_5}(SBENEFIT_j), \tag{5}$$

where s_j denotes cumulative standardized excess return for the jth sample firm over the three-day period beginning on the trading day of the executive's death. The analysis in section 2 predicts that β_1 should be positive and the remaining coefficients (β_2, β_3, β_4 and β_5) should be negative.

Proxy statements served as the principal source of executive compensation and share ownership data, although occasionally these data were obtained from 10-K filings. Firm-specific and industry median data required for the computation of *SALES GROWTH*, *PROFITS*, and *RETURNS* variables were obtained from various issues of *The Fortune Directory of the Largest U.S. Industrial Corporations* as well as from *Fortune's* retailing, transportation, utilities, and diversified services directories. In a handful of cases it was necessary to supplement these data sources by obtaining firm-specific financial information directly from 10-K filings or by computing annual shareholder returns from the monthly CRSP data file. Three firms were deleted from the cross-sectional analysis because executive compensation and share ownership data were not available.

4.4. Cross-sectional test results

The cross-sectional regression model was estimated over two event subsamples: all sample firms with available data ($n = 50$) and those sample firms where the executive's death did not involve a 'brief illness' ($n = 44$). Table 6 presents regression results estimated over each subsample. Bivariate correlation coefficients among the independent variables are reported in table 7.

Table 6

Summary of cross-sectional regression analysis of the common stock price reaction to senior executives' unexpected deaths in the period 1971–1982.[a]

Event subsample	Estimated coefficients and t-statistics						R^2	Adjusted R^2	F-statistic
	CONSTANT	*FNDR*	*POSITION*	*ABILITY*	*SCOST*	*SBENEFIT*			
Predicted sign		+	−	−	−	−			
All sample events ($n = 50$)	0.74 (1.91)[b]	0.98 (2.43)[b]	−0.74 (−2.58)[b]	0.13 (0.72)	−3.84 (−1.87)[b]	−1.16 (−1.02)	32.6%	24.9%	4.25[b]
'Brief illnesses' excluded ($n = 44$)	0.78 (1.85)[b]	1.00 (2.14)[b]	−0.85 (−2.71)[b]	0.11 (0.52)	−3.91 (−1.77)[b]	−0.81 (−0.65)	35.7%	27.2%	4.22[b]

[a] The dependent variable used in the analysis was the three-day cumulative standardized excess return computed over a period beginning on the trading day of the executive's death.

[b] Statistically significant at the 10% level.

Table 7

Correlation coefficients among the independent variables.[a]

	FNDR	*POSITION*	*ABILITY*	*SCOST*	*SBENEFIT*
FNDR	1.00				
POSITION	−0.04	1.00			
ABILITY	0.25	−0.05	1.00		
SCOST	−0.26	0.02	0.23	1.00	
SBENEFIT	0.39	−0.30	0.47	0.08	1.00

[a] Correlation coefficients computed over 50 sample events.

The coefficient estimates reported in table 6 indicate that standardized excess returns are positively related to founder status (*FNDR*) and managerial ability (*ABILITY*). Negative coefficient estimates were obtained for managerial decision-making responsibility (*POSITION*) and the two managerial ability/transaction costs variables (*SCOST* and *SBENEFIT*). The estimated coefficients for *FNDR*, *POSITION*, and *SCOST* are statistically different from zero at the 10% level. However, neither the *ABILITY* variable nor the *SBENEFIT* variable appear to exert a significant influence on standardized excess returns. The intercept coefficient is positive and statistically significant. The adjusted R^2's of the two cross-sectional regressions are approximately 25% (*F*-statistics in excess of 4.20), indicating that the independent variables examined here explain a relatively large proportion of the cross-sectional variance in excess returns. Exclusion of the 'brief illness' subsample did not alter the results significantly.[14]

As a partial validation of the results in table 6, the cross-sectional regression model was estimated using the standardized excess returns for each of the 10 trading days (t_{-10} through t_{-1}) in the pre-announcement period. None of the independent variables exhibited a consistent and significant association with pre-announcement period daily standardized excess returns, although five of the fifty individual coefficient estimates (corresponding to four different independent variables) were statistically significant. The adjusted R^2's ranged from 0.0% to 5.5% (*F*-statistics of 0.16 to 2.50) across the ten pre-announcement period regressions.

In summary, the most notable properties of the coefficient estimates in table 6 are: (i) the significant positive founder status coefficient, (ii) the significant negative managerial position and poor performance/share ownership interaction coefficients, and (iii) the absence of a statistically significant coefficient for managerial ability and high performance/share ownership interaction.

5. Summary and conclusions

This study examined the common stock price reaction to the sudden death of a senior corporate executive. The evidence indicates that (1) sudden executive deaths have little systematic impact on *average* common stock returns during the trading period beginning the day the executive died and ending the day the *Wall Street Journal* obituary notice is published; and (2) announce-

[14] The cross-sectional regression model was also estimated using standardized excess returns cumulated over the firm-specific announcement period (see footnote a of table 5) as the dependent variable. Results similar to those reported in table 6 for the 3-day cumulation period were obtained. In particular, the negative estimated coefficients for *POSITION* and *SCOST*, and the positive estimated coefficient for *FNDR* were statistically significant at the 10% level. The estimated coefficients for *ABILITY* and *SBENEFIT* were not significantly different from zero. The adjusted R^2 for the regression model estimated over all 50 observations was 43.7% ($F = 8.60$), and virtually identical results were obtained when the 'brief illness' subsample was excluded.

ment period excess returns were characterized by increased cross-sectional dispersion suggesting that positive and negative stock price adjustments to the executives' deaths occurred. Therefore, it appears that characteristics of the employment relationship and the labor market for managers produce significant differences between the stream of net benefits which shareholders expect from the incumbent executive and that stream expected from a replacement.

To gain insights into the factors which cause differences between incumbent and replacement executives' net benefits to shareholders, a cross-sectional regression model was estimated using standardized excess returns as the dependent variable. The incumbent executive's status as a corporate founder was positively related to excess returns, perhaps reflecting differences between founder-managers and professional managers in their initial contracting with shareholders. That is, a corporate founder appears to receive a larger share of the benefits from employment contracting than does a professional manager who succeeds the founder. Excess returns are negatively associated with the executive's position in the firm's decision-making hierarchy, as reflected in the executive's compensation relative to other officers. This result may reflect the level and uniqueness of firm-specific (or position-specific) human capital which an executive acquires, making the death of a subordinate or of a retired CEO who retained chairmanship of the board of directors less costly to shareholders than the death of a CEO.

The results concerning the relationship between excess returns and recent firm performance are more complicated to interpret. It appears that the change in expected value of managerial services is not a direct function of recent firm performance. However, the combination of poor performance and large shareholdings by the executive appears to be associated with greater announcement period excess returns. We interpret this result to mean that larger shareholdings enable the executive to impose transaction costs on outside shareholders' recontracting initiatives. The results for the combination of good performance and share ownership were not significant, probably indicating our lack of success in measuring shareholders' ability to impose transaction costs on the incumbent executive's recontracting initiatives.

Interpretation of these results is complicated by several theoretical and empirical limitations. For example, the correlations between the founder variable and share ownership (*SHARES*) is +0.63, making it difficult to separate the effects of such variables.[15] In addition, the theoretical arguments

[15] The unexpected death of a senior corporate officer with significant share ownership may signal an increase in the probability of a takeover, and thus may give rise to a positive share price adjustment reflecting the tender offer premium that accompanies takeover attempts. To investigate this possibility, the *Wall Street Journal Index* entries for each sample company were examined for news releases regarding an attempted takeover during the two years following the executive's death. Evidence of an attempted takeover was found in 6 cases (11.3% of the sample); however, these firms experienced a modest negative stock price reaction to the executive's death (mean announcement period standardized excess return of -0.61; $Z = -1.47$).

presented in section 2 are admittedly incomplete. In the absence of a well-developed theory linking managerial abilities, employment contract characteristics and external labor market opportunities to shareholder cash flows, the selection of appropriate independent variables for cross-sectional tests remains problematic. Nevertheless, our results shed some light on the employment relationship between shareholders and executives and on the factors determining the shareholder wealth effects of an executive's continued employment.

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