Inherited Control and Firm Performance

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This paper examines the impact of inherited control on firms' performance. To address this issue, I use data from management successions where the departing chief executive officer (CEO) was a member of the controlling family of the corporation. I find that firms where control is inherited undergo large declines in return on assets and market-to-book ratios that are not experienced by firms that promote CEOs not related to the controlling family. Consistent with wasteful nepotism, I find that these declines are particularly prominent in firms that appoint family CEOs that did not attend a selective college. Overall, the results strongly suggest that nepotism hurts firms' performance by limiting the scope of labor market competition. (JEL G32, G34, M13)

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"One of the strongest *natural* proofs of the folly of hereditary right in kings, is that nature disapproves it, otherwise she would not so frequently turn it into ridicule by giving mankind an *ass for a lion*."

Thomas Paine[1]

"*The only reason I was on the payroll is because I was the son of the boss."*

John H. Tyson, CEO of Tyson Foods [2]

The promotion of one's kin to a key corporate or governmental position is often tainted with controversy. In the United States, favoritism based on relationships rather than on merit has long been questioned on ethical and practical bases. Despite the widespread debate, there has been little systematic economic analysis to determine the impact of inherited control on the performance of firms or institutions that experience family successions.[3]

Family control of publicly traded corporations is widespread around the world (La Porta, *et al.*, 1999). In the United States, family firms account for 40 percent of GDP and 60 percent of the workforce (Utpal Bhattacharya and B. Rabikumar, 2002). Also, an important number of large publicly traded corporations, such as American Greetings, Anheuser-Busch, and The Washington Post, still resolve Chief Executive Officer (CEO) successions within the family ranks.

In this paper I study the impact of inherited CEO positions on the performance of U.S. publicly traded corporations. I test between two views of inherited control. The first view predicts that family CEOs foster firm performance by reducing agency costs, facilitating managers' firm-specific investments, easing cooperation and transmission of knowledge within the organization, and by their long-term focus. An alternative view suggests that family CEOs weaken firm performance. Competitive contests for top executive positions would rarely yield a family CEO. Therefore, those firms that pick executives from the small pool of family heirs would be, using Warren Buffett's analogy, "choosing the 2020 Olympic team by picking the eldest sons of the

[1] Paine (1776), italics in the original.
[2] *Fortune*, May 13th, 2002.
[3] The only empirical study of which I am aware is Randall K. Morck, David A. Stangeland and Bernard Yeung (2000) analysis of family controlled Canadian firms.

gold-medal winners of the 2000 Olympics."[4] Unrelated successors, in contrast, represent a self-selected group of highly driven individuals who experience permanent pressure to perform from the labor markets (Eugene F. Fama, 1980). Consistent with this view, recent models of family firms assume the outright superiority of unrelated CEOs (Mike Burkart, Fausto Panunzi and Andrei Shleifer, 2002; Bhattacharya and Ravikumar, 2002).

I use data from management successions where the departing CEO was a member of the controlling family of the corporation to address this issue. Using an event-study analysis, I examine the impact on firm market value of naming family and unrelated CEOs. I find that only unrelated promotions are associated with positive abnormal returns. This result, however, is potentially uninformative regarding the relative performance of family CEOs. Family successions are likely to be anticipated. Therefore the bulk of my empirical analysis focuses on changes in firm performance around CEO successions, measured as changes in profitability on assets and market-to-book ratios.

The findings of this paper are broadly consistent with the idea that a significant number of publicly traded "family firms" promote CEOs based on family ties rather than on merit. In these data, 85 out of 192 successions yield a family successor. Family CEOs are promoted to the post an average of eight years younger compared to unrelated executives. Empirically, I find that family successions harm firm performance: return on assets falls by 18 percent and market-to-book ratios by 12 percent within three-years of the transition, relative to firms that promote unrelated CEOs.

I further test for nepotism by examining whether the college attended by family CEOs predicts subsequent changes in firm performance. If attending a selective college provides a valuable signal of ability (Michael A. Spence, 1974), then those family successors that hold this

[4] *Associated Press*, February 14th, 2001.

signal should be expected to perform better than other family CEOs.[5] Furthermore, appointing without merit should be relatively more common among those family heirs that do not have such a signal.

The results are striking. I find that firms whose family CEO did not attend a selective college (56 percent) experience dramatic declines in performance: return on assets declines by 30 percent and market-to-book ratios by 11 percent within three years of the succession (30 and 18 percent respectively, relative to firms that promote unrelated CEOs). These large declines in performance are not observed in firms where inheriting CEOs attended selective colleges.

Overall, the results demonstrate that the costs of nepotism are large and they are likely to be borne by minority investors who do not share the private benefits of control. Moreover, the implications of these results may extend to corporate decisions where insiders' preferences are neither easily defined nor observable by outsiders, as it is the case when the promotion of a family heir is at stake.

These findings may also be interpreted as indicative that managerial ability, as well as, one's physical characteristics or earnings, tends to regress to the average of the population (Francis Galton, 1886; Gary S. Becker and Nigel Tomes 1986; Casey B. Mulligan, 1999) or alternatively as supportive evidence of the "Carnegie Conjecture" (Douglas Holtz-Eakin, *et al*. (1993).[6] Furthermore, the evidence illustrates the virtues of contested elections relative to successions where heirs gain access to the post at birth.

The rest of the paper is organized as follows. Section I presents related literature on inherited control in family firms. Section II describes the data. Section III presents an event-study examining the announcement effects of naming family and unrelated CEOs. Section IV describes

[5] Hereafter, a "selective" college or university is defined as a college or institution that considered applicants who ranked in the top 50 percent of their graduating class according to Barron's (1980), a total of 90 colleges.

[6] In 1891 Andrew Carnegie wrote "The parent who leaves his son enormous wealth generally deadens the talents and synergies of the son, and tempts him to lead a less useful and less worthy life than he otherwise would…" Cited by Holtz-Eakin, *et al.* (1993).

the empirical predictions of the hypotheses related to family successions and their impact on firm performance, as well as the methods of analysis. Section V presents the main results of this paper. Section VI examines alternative explanations for the empirical results in Section V. Section VI presents my conclusions.

I. Related Literature

The business and affairs of a corporation are managed under the supervision of its board of directors. It is the board's responsibility to carry out these activities in the best interests of the shareholders. To pursue these objectives, a salient instrument in the hands of directors is their ability to appoint (dismiss) managers.[7] When a founder is the sole owner of a corporation, the bulk of all costs and benefits associated with a CEO succession are likely to be internalized. In this regard, Burkart, *et al.* (2002) present a model where founders trade off the benefits of hiring "professional managers" –who are superior to family successors– to the costs of expropriation by unrelated CEOs, in alternative legal environments.[8] Bhattacharya and Ravikumar (2002) present a model in which family successors subsist only in small firms, where the costs of inducing effort by professional managers outweigh the benefits created by their higher qualification.

Family successions may prevail more often when ownership and control are separated at the time of succession. Rationality may induce insiders (Michael Jensen and William Meckling, 1976) to elect a successor who ex-ante represents an inferior match to the interest of non-controlling shareholders. The smaller the pool of acceptable CEOs for insiders the larger the potential costs of this mismatch. This pool nowhere tends to be smaller than in the case of family firms.

[7] For CEO successions and turnover in general see Weisbach (1988), Morck, Shleifer and Vishny (1989), Denis and Denis (1995) and Parrino (1996). For compensation see Murphy (1999).
[8] In this paper I refer to non-family CEOs as "unrelated" successors and not as "professional managers" as they are commonly referred in other papers. Most family successors are likely to be "professional."

Despite substantial debate surrounding this issue, the empirical evidence on the performance of family successors is scant.[9] Morck, *et al*. (2000) use a cross-section of firms to document a negative correlation between heir-controlled Canadian firms and financial performance as well as R&D spending, relative to otherwise similar U.S. firms. Inherited successions are thus far unstudied and in the following Sections, I fill in this gap.

II. Data

To test the impact of inherited control on firm performance I use data from CEO successions where the departing CEO was a member of the controlling family of the corporation, henceforth defined as *family firms*. From the universe of Compustat firms in 1994 (the first year that the Security and Exchange Commission's (SEC) Edgar database is available online), I identified all non-financial, non-utility firms with sales of at least $ 5 million that were founded before 1964.[10] Using information from proxy statements, and news searches in the *Dow Jones Interactive* publications library, I identified 192 successions by family firms.[11] The requirement that the firm had been active for at least 30 years was imposed to concentrate on mature corporations, in which CEO successions are more likely to occur. There is, however, a potential drawback to this strategy. It introduces a survival bias. The identified firms may not be representative of the universe of family firms. Ideally one would want to follow firms since their inception and investigate their business histories. I adopt the strategy described above due to the ease in the collection of the data. To the extent that these groups differ from each other, the conclusions of this paper are only limited to the surviving firms. This potential problem does not,

[9] Excerpts from *Fortune*, March 13, 1957 illustrate the debate: "Nepotism is immoral…Relatives made this company what it is today…Is it [nepotism] un-American?"

[10] The information from the SEC (http://www.sec.gov/) was the departing point for identifying the family relationships of the firms' CEOs. Information on founding dates was gathered using (1) Dun's Million Dollar Directory (various years), and (2) the firms' annual reports. Financial and utility firms were excluded due to regulatory changes that may affect results.

[11] Family firms where the family sells the firm or agrees to merge with a larger corporation are not reported (22 cases).

a priori, induce a clear bias towards finding any correlation between family successions and changes in firm performance.

The firms in this sample accounted for 4.1 percent of all corporations in the Compustat non-financial, non-utility files (hereafter Compustat) in 1994 and for 7.1 percent of its sales. The summary statistics for all CEO successions and firm data at the time of each transition are presented in Table I, Column I. Overall, the average age of the new CEOs is 48 years. Board ownership is equivalent to 27 percent of outstanding shareholdings. These data show that family firms in this sample are not "mom-and-pop stores." At the time of succession, these firms had average sales of 1.3 billion and assets of 937 million (2000 constant dollars).

In addition, Table I presents CEO and firm characteristics when successions are divided into two groups. *Family* successions when the incoming and departing CEOs are related by blood or marriage (85 cases) are reported in Column I, and *unrelated* successions when the departing CEO is not related to the incoming CEO (107 cases), are shown in Column II. Family heirs were promoted to the CEO position an average of 7.7 years earlier than unrelated managers (43.5 compared to 51.3 years). That family successors were promoted to the top post in 44 percent of all cases and that they inherit control relatively young may be indicative that nepotism is prevalent in family firms.

The average ownership stake of heirs was 13.1 percent while unrelated CEOs held 3.3 percent of the outstanding equity. The ownership concentration of the boards of directors at the time of each succession was also larger for family promotions whose board held an average of 31.4 percent of the outstanding stock relative to 23.8 percent for firms that elected unrelated CEOs. Yet, excluding CEO shareholdings, board ownership was relatively even across successions types: it was equivalent to 18 and 19.9 percent for unrelated and family successions, respectively.

Looking at firm characteristics we observe that, on average, firms that promote outside CEOs are larger in sales and assets, and have lower return on assets, although in both the size and

profitability measures, the differences of means across groups are not statistically significant. Also, and consistent with Morck, *et al*. (2000) the average spending in research and development (R&D) does differ across groups. Firms that stay under family control have lower R&D spending relative to firms that promote unrelated CEOs, a difference of 1.6 percent of sales which suggests that inherited control is less likely to occur in technology intensive industries.

Table II presents the industry distribution of family successions using the Fama-French's 12-industry classification.[12] As a benchmark for comparison, I report the share of firms per industry in the Compustat files in 1994. An analysis of the distribution of family firms (Column I) relative to the entire Compustat universe (Column IV) shows that family firms are disproportionately present in the following industries: Consumer Non-durables (16.7 compared to 8.8 percent in the full Compustat sample), Manufacturing (23.4 compared to 15.3 percent) and Wholesale, Retail and Some Services (21.4 compared to 14.8 percent). Family heirs are less frequently found in industries where innovation is important, such as in Business Equipment (11.5 compared to 20.2 percent) and Healthcare, Medical Equipment and Drugs (2.1 compared to 11.8 percent).

Table II, Columns II and III present the number of firms that observe family and unrelated successions, respectively, sorted by industry. This analysis points out that control is inherited disproportionately in Manufacturing (63.6 percent of successions), Oil, Gas and Extraction (60 percent) and Consumer Non-durables (59.4 percent) and that it is infrequent in Healthcare, Medical Equipment and Drugs (none) and Business Equipment (22.7 percent).

The industry distribution of family successions indicates that control is not randomly inherited. It occurs in mature and less technologically intensive industries. This result is consistent with a simple model in which controlling families recognize that the costs of inheriting control are increasing in the skills required to manage a firm or are lower in mature industries where potentially firms do not innovate. It also resembles previous work that demonstrates that

[12] http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/

ownership is partially determined by firm and industry characteristics (Harold Demsetz and Kenneth Lehn, 1985). This issue is revisited in Sections IV and V.

III. Event-Study on CEO Promotion Decisions

In this Section, I examine the stock-return response to CEO succession announcements for family and unrelated successions. If unrelated managers are superior relative to family heirs as Burkart, *et al*., (2002) and Bhattacharya and Ravikumar (2002) assume and CEO promotions are unexpected, we should expect abnormal increases in market value of firms that appoint unrelated CEOs upon announcements. To test this empirically, I first estimate the market model using daily return data for a 200-day window $(-230,-30)$ before each announcement:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \qquad (1)$$

where R_{it} is the return on security i on day t, R_{mt} is the market return on day t and ε_{it} is the zero mean disturbance term. The market return is based on the value-weighted NYSE-AMEX-NASDAQ index. I then estimate abnormal returns ($AR_{i\tau}$) and cumulative abnormal returns ($CAR_{i\tau}$) using the market model parameter estimates from (1) for three-day ($\tau = 0, \tau = +2$), four-day ($\tau = -1, \tau = +2$), and seven-day ($\tau = -1, \tau = +5$) windows of analysis:

$$AR_{i\tau} = R_{i\tau} - \hat{\alpha}_i - \hat{\beta}_i R_{m\tau} \qquad (2)$$

and

$$CAR_i = \sum_{\tau=l}^{L} AR_{i\tau} \qquad (3)$$

where τ measures time relative to the event day $\tau = 0$, l is the first and L is the last day in the event window. All return data are from the Center for Research in Security Prices (CRSP).

The advantage of this market-based test is that we can estimate the value of entering CEOs, conditional on all relevant information. Its main drawback is that expected successions would be anticipated. Therefore the event-study will fail to find significant abnormal returns. I expect a large share of family successions to be anticipated, which would imply insignificant CARs. In contrast, I expect promotions of unrelated successors to be informative.

The results of the event-study are presented in Table III.[13] Panel A shows that promotions of unrelated successors induce abnormal returns of 1.6, 2.1, and 3 percent in three, four and seven-day windows respectively. In all cases, $CARs$ are significant at the 5-percent level. The four-day CAR implies an average increase in market value of 30.2 million from a mean market capitalization of 1.4 billion. Firms where control is inherited do not observe significant abnormal returns. Figure 1 presents $CARs$ starting 15 days before and after succession announcements. It suggests that investors may have partially anticipated CEO promotions.

In Table III panels B and C, I sort successions by the reported "reasons" for which the CEO departs. Planned CEO retirements may be expected whereas non-retirements (separations due to death, health related problems or resignations) may be unanticipated. Focusing on reported separation conditions may, however, be of limited use in the family firm context. Previous research has demonstrated that family managers are rarely fired and that corporate control contests seldom succeed in these firms (Randall K. Morck, Andrei Shleifer and Robert W. Vishny, 1989). Consistent with these findings, 151 out of 182 successions with daily return data were reported in the news as CEO "retirements," and only 31 were reported as non-retirements (20 reported death, two retired for health related reasons, an, nine resigned). Panel B presents the results for CEO retirements for a seven-day window around announcements. The estimated CAR replicates the results for the full sample.

[13] Results are presented for 182 out of 192 successions for which daily return data was available.

As I argued above, non-retirements are potentially more informative about the relative attributes of successors since they are likely to be unexpected. Consistent with this presumption, firms that promoted family CEOs experience CARs of -2.3 percent. Yet, this decline is only statistically significant at the 16-percent level. Conversely, firms that appointed unrelated managers observe large positive CARs of 6.1 percent, significant at the 5-percent level. Both results suggest that outside but not family CEOs increase firm value.

These patterns of abnormal returns may also be interpreted as responses to a potential corporate control contest. Bruce W. Johnson, *et al.* (1985) show that the unexpected death of the founder of a corporation is associated with positive abnormal returns. Luigi Zingales (1995) documents increasing voting premium upon the death of the founder of the corporation. Myron B. Slovin and Marie E. Sushka (1993) find that family firms are subject to intense corporate control activity after the death of a founder.[14] If naming an unrelated successor increases the perceived probability of such a contest, then this added effect might be confounded in the estimated market response.

On the whole, the event-study results point to higher market valuations for firms that upon the retirement of a family CEO select unrelated successors. In the next Section I test further the impact of family relative to unrelated managers using changes in alternative measures of firm performance.

IV. Methodology and Empirical Predictions

A natural test of the consequences of family relative to unrelated successions is to compare the change in firm performance before and after each CEO transition, for family and

[14] I do not explore the informational content of "sudden" deaths due to the small number of occurrences.

unrelated CEOs. I use *changes* in performance as measured by return on assets (ROA) and market-to-book ratios (M-B).[15]

ROA is measured as earnings before interest and taxes, over firm assets (in percent). It is a measure of current profitability, and arguably, the simplest and most intuitive measure of firm performance. ROA, however, is potentially misleading since it only captures the present, and recent experience shows that earnings may be subject to manipulation. To partially address these limitations I also use M-B, which is a forward-looking measure of performance. M-B is defined as the ratio of (assets plus market value of equity), minus (book value of equity plus deferred taxes), over firm assets. M-B could be interpreted as a proxy for Tobin's Q, namely, the market value of a firm's assets relative to their replacement costs. Finally, the focus on changes in performance allows me to control for fixed systematic differences, both observed and unobserved, in firm characteristics.

Regardless of the relationship between entering and departing CEOs, the null hypothesis for a CEO succession is that we should expect negligible changes in ROA and M-B. If in contrast, family heirs were to improve performance upon successions, we should expect positive changes in ROA and M-B ratios in firms where control is inherited. A variation of the positive influence by family successors would predict that ROA might decrease in the short-term due to the "long-term" focus of heirs. Yet M-B should not fall. Conversely, nepotism predicts that both ROA and M-B should fall in those firms that observe family successions.

This approach has two major empirical drawbacks. First, if insiders internalize all the costs and benefits of CEO successions (even those of non-controlling shareholders), the pool of family heirs that does inherit control will represent the upper tail of the ability/motivation pool of family heirs. Thus, we may reject a negative correlation between family heirs and subsequent

[15] Return on assets is defined as earnings before interest and taxes (EBIT) over total assets (in percent). Market-to-book ratios are measured as the ratio of (assets plus market value of equity) minus (book value of equity plus deferred taxes), over firm assets.

firm performance even when the *average* unrelated CEO is superior to the average *potential* family heir.

Second, comparing changes in firm performance after successions is problematic when firms that allow control to be inherited are not random. Firm and individual traits are likely to affect the decision of whether to select a CEO from within the family ranks. If those factors that affect the probability of selecting a CEO type are correlated to present or future firm performance (the subject of analysis), then this approach may not reflect the exerted influence of family heirs (or unrelated CEOs) but differential firm characteristics at the time of the transition. For example, if family successors were only selected when firms outperform their rivals and performance were to mean-revert, observed changes in performance would reflect the negative trend faced by the firm and not the impact of the new CEO.

In the absence of an exogenous source of variation in the selection of family and unrelated CEOs, I further test the nepotism hypothesis using information on the educational background of family CEOs. If attending a selective college provides a valuable signal of ability (Michael A. Spence, 1974), then those family successors that have this signal should be expected to perform better than those that do not. In other words, appointing without merit should be relatively more common among those family heirs that do not have such a signal. To pursue this test empirically, I collected information on where each family CEO attended college, and I then sorted family successors into two groups: *selective* college (SC) when the family heir was reported to attend one of the 90 most competitive colleges in the United States as classified by Barron's (1980), and *not selective college* (NSC), if they were not. Under nepotism, we should expect larger declines in ROA and M-B for NSC family successors.

In both the full sample and heir-only analysis I include firm characteristics, industry, and time controls. As Table II suggests, industry characteristics may be particularly relevant for succession decisions. Also as an additional robustness check on selection, I estimate changes in firm performance for the full sample based on propensity score methods. First, I estimate a

predicted propensity to inherit control using a probit regression on pre-succession ROA, board ownership, 3-digit SIC industry R&D spending, pre-succession M-B and log of firm sales, and then I use nearest-neighbor matching with replacement to estimate the average effect of family heirs (Rajeev H. Dehejia and Sadek Wahba, 1999; Belén Villalonga, 2001).

Finally, beyond firm attributes, and industry and time trends, changes in performance may be the result of differential conditions that each CEO confronts upon promotion that are not captured by these previous controls. The results from the event-study indicated that reported "reasons" for CEO separation might provide useful information. I therefore test for alternative firm conditions present at the time of succession by analyzing the informational content of "retirements" and "non-retirements." I also test whether the age at which a CEO retires is informative. I examine whether those firms for which CEOs retired before age 65 performed differently than other firms.

V. Results

As a benchmark for analysis, I study changes in firm performance using three-year ROA and M-B averages, before and after each transition.[16] Table IV.A shows that average pre-succession ROA for the 192 firms in the sample was 10.4 percent. I previously argued that we should not expect systematic changes in performance around successions. I find, however, that mean ROA falls to 9.5 percent, a difference of 0.9 percentage points which is statistically different from zero at the 10-percent level.

The focus of this paper is to examine the performance of family heirs. Therefore, I split successions accordingly. Firms in which the succeeding CEO was kin to the departing CEO had average pre-succession ROA of 11.16 percent. Interestingly, this rate fell to 9.13 percent within three years after succession. The implicit average decline in ROA for this group was equivalent to

[16] To prevent potential biases derived from earnings manipulations or taking "big baths", the year of succession is omitted. The results are unaffected. Results are not reported.

2.03 percentage points (18.2 percent), which is statistically significant at the 1-percent level. In contrast, firms where incoming CEOs were unrelated performed just as well before and after successions: ROA was 9.78 and 9.77 percent, respectively. The implicit difference is not statistically different from zero. The difference-in-differences of these mean changes suggests that firms with family CEOs observed declines in ROA of 2.02 percentage points. This difference-in-differences is statistically different from zero at the 5-percent level. Although this decline in performance is consistent with nepotism, it cannot be directly interpreted as the result of inherited control.

A closer test of the nepotism hypothesis is to compare the performance of those inheriting CEOs when we sort them by the college they attended. Under nepotism, successors would be promoted regardless of whether they have the merits to be a CEO. Out of 85 family CEOs, only 37 (44 percent) were reported to attend a SC. This relatively low share may be surprising since these CEOs represent the "elite" of family successors, and because they are the offspring of wealthy individuals for whom education costs are unlikely to determine which college to attend.

The results are startling. Family CEOs that attended NSCs account for the bulk of the negative decline in family successions' performance. For them, ROA falls by 3.35 percentage points from a level of 11.3 (29.7 percent change). Statistically heirs that attended SCs, in contrast, do as well as unrelated successors. That is, performance falls by 0.31 percentage points, from a base of 10.98, but this change in not different from zero at conventional levels.

A cleaner test for the impact of family heirs is to examine changes in firm performance after we control for industry trends. Hence, the last row of Table IV.A examines the performance of family successors that attend NSC relative to their 3-digit SIC mean ROA.[17] Table II suggests that industries where control is inherited may be different relative to firms that hire unrelated managers. I therefore calculate "excess" profitability measures as the difference between each

[17] Three-digit SIC industry averages are constructed using the entire set of Compustat firms and excluding those firms that observed CEO successions.

firms' ROA minus its 3-digit SIC ROA for a given year. Given the way the sample is constructed (30 year survival requirement) it is not surprising to find that these family firms observe positive excess ROA relative to their industry benchmark (2 percentage points). Nonetheless, it is surprising that this industry over-performance disappears after NSC family successors take over. The average three-year decline in ROA is 2.9 percentage points, significant at the 1-percent level.

I now explore in Table IV.B the impact of family heirs on the change in long-term performance as measured by M-B ratios. Average M-B for firms that observed family promotions was equivalent to 1.47 before and 1.40 post-succession, but this difference (-0.07) is not statistically different from zero at conventional levels. Failing to find significant declines in M-B is potentially explained by market anticipation of the negative impact on performance of family successors, as the evidence from Section III indicates. Also consistent with the event-study, M-B ratios improve for firms that promoted unrelated CEOs. Average M-B increases from 1.40 before to 1.51 after successions, a difference of 0.11 points, which is statistically different from zero at the 10-percent level. Moreover, the differences of means are again consistent with the nepotism hypothesis. Family heirs are associated with large declines in performance when compared to unrelated successors. The difference-in-differences implies a decline in M-B ratios of 0.18 points (12 percent), statistically significant at the 5-percent level.

In the second part of Table IV.B, I explore whether negative changes in M-B ratios are more prominent for NSC family successors. The results are consistent with nepotism. Firms that promoted NSC heirs had average M-B ratios of 1.53 before and 1.37 after family heirs took over the CEO position. This change in M-B implies a decline of 0.17 points (11 percent), statistically significant at the 10-percent level. Conversely, SC family heirs are not linked to declines in M-B ratios. For this latter group, M-B improves from 1.395 to 1.454, before and after successions, respectively. The 0.6-point difference is not statistically significant. On the whole, NCS family heirs seem to generate large declines in performance when we compare them to their SC peers. The difference-in-difference points to a decline in M-B ratios of 0.23 points (12 percent),

statistically significant at the 5-percent level (0.28 or 18 percent when they are compared to unrelated successors).

As in Table V.A, I test whether the negative declines in performance by NSC family firms could be explained by industry-wide factors by creating "excess M-B" measures. Mean M-B ratios reject this alternative explanation. While retiring family CEOs in this sample outperformed their industries, this advantage disappears after NSC family successors are promoted to the CEO position. The average three-year decline in M-B is 0.20 (13 percent), significant at the 5-percent level.

The evidence presented in Tables IV.A and IV.B shows that NSC family CEOs are associated with large declines in firm performance that are not experienced by firms that appoint unrelated CEOs or family successors that attended selective colleges. Furthermore, these declines in firm performance by NSC successors are not explained by changes in industry-wide shocks. Overall, the difference of means analysis casts doubt on the beneficial role of nepotism on firm performance.

I now explore the robustness of the above-described results to the introduction of additional controls. Table V.A presents the estimated results for ROA when we introduce year controls (Column I) and in addition, mean ROA for the industry (Column II), using fixed-effect regressions on a two-year window around successions. Continuing the logic of the previous analysis I split the sample by whether entering and departing CEOs are kin. An indicator variable *family* successor is created. This variable is one when these CEOs are related and zero otherwise. It is interacted with a post-succession dummy (*after*). This interaction is one of our key variables of interest.

The estimated coefficients reveal that the indicators of nepotism are robust to these new specifications. ROA in family-heir firms declines by 2.7 percentage points, a reduction that is statistically different from zero at the 1-percent level. These results are not explained by changing

aggregate or industry trends.[18] The size of the decline in ROA associated with family successors falls when the window of analysis is extended. Yet after four years it continues to be large and statistically significant at the 5-percent level. Finally, matching firms based on pre-succession observable variables using propensity score methods reinforces the negative change in ROA of family heir firms (Column V). In this latter specification, the decline in performance of heir control firms is equal to 2.75 percentage points.

Column IV in Table V.A revisits the relative performance of SC and NSC family heirs. I create an indicator variable NSC equal to one if the family successor was not reported to attend a SC and zero, if he or she was. I interact it with the *after* dummy. This interaction is our second key variable of interest. The results indicate that NSC family heir' firms experience reductions in ROA of 4.4 percentage points relative to their SC peers, a difference that is significant at the 1-percent level. Once more, negative changes in performance can be explained by whether or not an heir attended a selective college.

Table V.B presents results for M-B ratios in the spirit of Table V.A. Results show that the large declines in performance observed by family heirs and in particular NSC heirs are robust to the use of M-B as proxy of forward-looking performance. Family CEOs are correlated with large and statistically significant declines in M-B. On average, M-B ratios fall by 0.12 to 0.21 points (8 to 14 percent) after the promotion of a family CEO. Second, conditional on observing a family succession, firms that promote NSC CEOs experience sharper declines in performance. M-B ratios fall by 0.19 points for NSC successors relative to SC successors, a difference that is statistically different from zero at the 5-percent level.

As argued in Section IV, CEO separation conditions or CEO retirement age may reveal information about the state of affairs of a corporation that is not captured by firm characteristics. I first test whether those CEOs that were not reported as retiring can explain the results

[18] Using the 12-industry Fama-French dummies interaction with *after* as additional controls does not affect results (not shown).

documented in the previous tables. I create a categorical variable that takes the value of one if the CEO was "not retiring" (20 reported death, two retired for health related reasons, and 10 resigned) and zero otherwise. I then examine whether those observations where departing CEOs are reported as separated due to death can shed light on the relative performance of family heirs by concentrating the analysis solely on them. In principle, these latter observations could be thought as "exogenous" successions, since successors are more likely to be "random" relative to planned retirements.

Table VI reports results for the interaction of the non-retirement dummy* *after* in the full sample (Column I) and in the family succession sub-sample (Columns IV). Non-retirements do not seem to explain why family successors are associated with declines in ROA and M-B ratios.[19] Column IV shows that non-retirements are correlated with lower performance in the family heir sub-sample: a decline in ROA of 3 percentage points. Nonetheless, NSC coefficients are robust to this added control. The estimated decline in ROA associated with NSC heirs is equal to 4.4 percentage points.

I now examine whether those observations where departing CEOs were separated by death can offer new insights on the decline in performance attributed to family heirs. The estimated coefficients for family successions in the full sample, and NSC interactions in the heir-only sub-sample are presented in Columns II and V, respectively. Both specifications seem to support my previous findings: family successors are associated with large declines in performance, and this weaker performance is particularly concentrated in firms that promoted NSC family heirs. If these successions are more likely to be random than normal retirements, these results could be interpreted as reinforcing the nepotism hypothesis.

An alternative way to test for differential firm conditions at the time of succession is to use early retirements as proxy for unusual circumstances. Given that management and family are

[19] Hereafter, results for M-B ratios are not shown, but they are fully consistent with the ROA regressions unless it is otherwise indicated in the text.

tightly related in family firms, reported explanations of why a CEO retires may be misleading. Perhaps firms whose CEOs "retire" at a younger age tend to behave systematically differently than other firms. Early retirements could signal trouble inside a firm. Therefore, if these firms were more likely to be controlled by any type of successor, the estimated coefficients would capture this trend.

To pursue this idea empirically, I create an indicator variable equal to one in cases where family CEOs left office before age 65 (38 cases), which is interacted with *after*. The results are presented in Table VI Columns III for both the full sample, and Column VI for heir-only firms. The impact of early retirement is not robust across specifications, and in neither case it is statistically different from zero. Yet, this added control does not affect the economic or statistical significance of the estimated declines in performance attributed to family and to NSC successors.

VI. Alternative Hypotheses

The results of Section V show that firms that promote family CEOs, and in particular those that named NSC CEOs, observe large declines in performance. I have stressed that these patterns of firm performance are consistent with nepotism. In this Section, I briefly explore alternative hypotheses that could account for the evidence thus far presented.

A. Monitoring

Andrei Shleifer and Robert W. Vishny (1986) show that large shareholders may be effective at monitoring management. Therefore, differential changes in performance could reflect a disparity in the monitoring pressures put forth by the board of directors or its large shareholders. In family firms, the controlling family is typically the largest shareholder of the corporation.

I test for differential monitoring pressures in two ways. First, I investigate whether firms where the departing CEO remained as chairman performed differently, relative to other firms. In principle, such chairmen have the power and interest to monitor entering CEOs. In this sample, departing CEOs remained as chairman in 140 out of 192 successions, and in 58 out of 82 heir-only transitions. Their impact on ROA is presented in Table VII for both the full sample (Column I) and the heir-only sub-sample (Column IV). The evidence suggests that post-succession changes in performance of firms where departing CEOs stayed as chairman were not different than those observed by other firms. These results seem to reject the idea that departing CEOs' monitoring may explain relative heir performance; they can nevertheless be explained by the fact that families may provide monitoring in spite of whether the departing CEO stays as chairman since their large shareholdings may provide them with the incentives to monitor management.

The second way in which I test this monitoring hypothesis is by examining whether board ownership (excluding CEO's ownership) can predict changes in performance. If monitoring is increasing in ownership, we can test this idea empirically by comparing the correlation between the interaction of board ownership**after* and observed changes performance. Columns II and V in Table VII present the results, which reject that board ownership can explain post-succession changes in ROA. In summary, a pure monitoring hypothesis as developed above fails to explain why family heirs underperform.

Alternatively, ownership concentration may provide differential incentives to perform, and in consequence, it can potentially explain why some firms improve their performance upon CEO successions. To control for this option, I interact the percentage of CEO ownership with *after* and following Morck, Shleifer and Vishny (1988) I also use the square of CEO ownership times *after*. The results are presented in Table VII Column III for the full sample and Column VI for the heir-only sub-sample. Consistent with previous empirical studies, I find that increases in ownership are related to performance in a non-linear way. Performance first increases and then falls with ownership. Ownership interactions are, however, not associated with significant

changes in M-B ratios. In this latter case the estimated coefficients are not statistically different from zero at conventional levels in any of the regressions that were estimated. Controlling for ownership widens the gap between family and unrelated successors. The estimated coefficients indicate a relative decline in performance of 4.4 percentage points in family successions. Results on the relative decline in performance of NSC firms are unaffected by ownership controls.

B. Implicit Contracts

The relative gap in performance between family and unrelated CEOs may be explained by wrecked implicit contracts (Andrei Shleifer and Lawrence H. Summers, 1988). Unrelated managers may transfer resources from relevant stakeholders, such as workers or local associations, to investors. Alternatively, family heirs may find it hard to renege on these pre-existing arrangements that resulted from the founder's preferences or that give indirect benefits to the controlling family

In Table VIII, I test this hypothesis by examining changes in employment (Column I), employment to asset ratios (Column II), and sale of property, plant and equipment (Column III) for unrelated and family controlled firms. The results reject that unrelated CEOs (or SC heirs) in this sample are involved in firing, or divesting programs after successions. In all specifications, observed changes in employment, employees/assets, and fixed assets are not statistically different from zero. Finally, and contrary to the evidence presented by Morck, *et al*. (2000) for Canada, Column IV indicates that family successors (including NSC family heirs) do not seem to retard technological innovation through reductions in R&D spending upon succession.[20]

[20] Results for NSC heirs are not shown.

VII. Conclusions

This paper finds strong evidence that nepotism hurts firm performance. Publicly traded firms that do inherit control from one member of the family to the next observe large declines in profitability and market-to-book valuations. These declines in performance are prominent in firms that promoted family CEOs that did not attend a selective college.

A natural extension of this analysis is to explore the consequences of family successions in countries were they are relatively more pervasive than in the United States (La Porta, *et al.*, 1999) and where control to assets is typically inherited.

The implications of these results may have consequences beyond the corporation. My findings illustrate the virtues of contested relative to uncontested elections. World history has shown that selecting a skilled leader for a nation is complicated. Yet, finding a competent heir among the offspring of the retiring head is often disastrous.

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TABLE I
SUMMARY STATISTICS

This table includes information on 192 chief executive officer (CEO) successions where the pre-transition CEO was a member of the controlling family of a publicly traded corporation. CEO successions were classified by the relationship between entering and departing CEOs: *family* successions, when both CEOs were related by blood or marriage (85 cases) and *unrelated* successions, when they were not (107 cases). The definition of the variables are: (1) CEO age: age at which the CEO is promoted, (2) Ownership: percent of ownership held by entering CEO, (3) Board ownership: percent of ownership held by officers and the board of directors, (4) Firm assets (2000 dollars in millions), (5) Firm sales (2000 dollars in millions) (6) Return on assets: three-year pre-succession average of earnings before interest and taxes over assets (percent), (7) Market to book ratio: three-year pre-succession average ratio of (assets plus market value of equity) minus (book value of equity plus deferred taxes) over firm assets, and (8) R&D: spending on research and development over sales at the year of succession. Ownership data are from the SEC; CEO data from the SEC and news search, and firm data from Compustat. Robust standard errors are reported in parentheses and the number of CEO successions in brackets.

Variable	All Successions (I)	Family Succession (II)	Unrelated Successions (III)	Difference of Means (II) vs. (III)
Age promoted (years)	47.84 (0.589) [191]	43.541 (0.808) [85]	51.283 (0.676) [106]	- 7.742 *** (1.054)
Ownership (%)	7.739 (0.897) [183]	13.123 (1.559) [83]	3.272 (0.768) [100]	9.851 *** (1.737)
Board ownership (%)	27.145 (1.460) [192]	31.392 (2.200) [85]	23.772 (1.899) [107]	7.620 *** (2.905)
Firm assets (m)	936.95 (174.7) [192]	815.3 (185.7) [85]	1,036.6 (277.3) [107]	- 218.2 (333.7)
Firm sales (m)	1,283.7 (234.7) [192]	1,044.8 (267.1) [85]	1,473.5 (363.8) [107]	- 428.6 (451.4)
Return on assets (percent)	10.391 (0.545) [192]	11.157 (0.825) [85]	9.782 (0.724) [107]	1.378 (1.100)
Market-to-book (ratio)	1.430 (0.051) [192]	1.473 (0.092) [85]	1.396 (0.056) [107]	0.078 (0.108)
R&D (% sales)	2.11 (0.328) [102]	1.087 (0.211) [38]	2.724 (0.494) [64]	- 1.637 *** (0.538)

* Statistically different from zero at the 10-percent level, ** at 5-percent level, *** at 1-percent level.

TABLE II
INDUSTRY DISTRIBUTION

This table reports information on CEO successions where the pre-transition CEO was member of the controlling family of a publicly traded corporation, sorted by industry (Column I).[a] CEO successions are classified by the relationship between entering and departing CEOs: *family* successions when both CEOs are related by blood or marriage (Column II) and *unrelated* successions when they are not (Column III). The share of non-financial, non-utility firms per industry in the universe of Compustat firms in 1994 is reported in Column IV. The share of successions relative to the total (%) is reported in parentheses. The share of successions relative to the total number of successions per industry (%) is reported in brackets.

	Industry [a]	All Successions (I)	Family Successions (II)	Unrelated Successions (III)	Share of All Firms in 1994 (IV)
1	Consumer Non-Durables	32 (16.7)	19 (9.9) [59.4]	13 (6.8) [40.6]	7.9
2	Consumer Durables	11 (5.7)	7 (3.6) [63.6]	4 (2.1) [36.4]	3.5
3	Manufacturing	45 (23.4)	24 (12.5) [53.3]	21 (10.9) [46.7]	15.3
4	Oil, Gas and Coal Extraction	5 (2.6)	3 (1.6) [60.0]	2 (1.0) [40.0]	4.7
5	Chemical and Allied Products	8 (4.2)	4 (2.1) [50.0]	4 (2.1) [50.0]	3.0
6	Business Equipment	22 (11.5)	5 (2.6) [22.7]	17 (8.9) [77.3]	20.2
7	Telephone and Television	2 (1.0)	1 (0.5) [50.0]	1 (0.5) [50.0]	3.3
9	Wholesale, Retail and Some Services	41 (21.4)	15 (7.8) [36.6]	26 (13.5) [63.4]	14.8
10	Healthcare, Medical Equipment and Drugs	4 (2.1)	0 (0.0) [0.0]	4 (2.1) [100.0]	11.8
12	Other	22 (11.5)	7 (3.6) [31.8]	15 (7.8) [68.2]	15.5
	Total	192 (100.0)	85 (44.3)	107 (55.7)	100.0 (4,668 firms)

[a] 12-Industry classification using Fama-French definitions: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french
Information from industries eight (utilities) and eleven (finance) was not collected

TABLE III
CUMULATIVE ABNORMAL RETURN OF SUCCESSION ANNOUNCEMENTS

This table includes information on Chief Executive Officer (CEO) successions where the pre-transition CEO is member of the controlling family of a publicly traded corporation. CEO successions are classified by the relationship between entering and departing CEOs: *family* successions when both CEOs are related by blood or marriage (79 cases) and *unrelated* successions when they are not (103 cases). Abnormal returns are calculated using the market model as described in the text. Robust standard errors are in parentheses. Windows of analysis are relative to the succession announcement dates. Stock returns data are from CRSP. Numbers of successions are in brackets.

Event Window	**All Successions** (I)	**Family Successions** (II)	**Unrelated Successions** (III)
A. All Successions			
(t_0, t_{+2})	0.479 *(0.577)* [182]	- 0.978 *(0.994)* [79]	**1.596** ** ***(0.660)*** **[103]**
(t_{-1}, t_{+2})	0.935 *(0.625)* [182]	- 0.619 *(1.102)* [79]	**2.127** *** ***(0.693)*** **[103]**
(t_{-1}, t_{+5})	1.726 *** *(0.664)* [182]	0.058 *(1.142)* [79]	**3.005** *** ***(0.762)*** **[103]**
B. CEO reported as Retiring			
(t_{-1}, t_{+5})	1.721 *** *(0.711)* [151]	0.664 *(1.370)* [63]	**2.477** *** ***(0.722)*** **[88]**
C. "Non-Retirements"			
(t_{-1}, t_{+5})	1.751 *(1.822)* [31]	- 2.328 *(1.570)* [16]	**6.103** ** ***(3.045)*** **[15]**

* Statistically different from zero at the 10-percent level,
** at 5-percent level, *** at 1-percent level.

TABLE IV.A
INHERITED CONTROL AND FIRM PERFORMANCE: *RETURN ON ASSETS*

CEO successions are classified by: (I) the relationship between entering and departing CEOs: *family* successions, when both CEOs are related by blood or marriage (85 cases) and *unrelated* successions, when they are not (107 cases) and, (II) conditional on observing a family succession, by the college attended by the entering CEO: "*selective" college,* when the family heir was reported to attend one of the 90 most competitive colleges in the United States as classified by Barron's (1980), and *not "selective" college,* if they were not. Return on assets (in percent) is measured as earnings before interest and taxes, over firm assets. Robust (clustered by firm) standard errors are in parentheses in columns II and III (columns III and IV). Number of successions is reported in brackets.

Succession	**Before CEO Transition** 3-yr average (I)	**After CEO Transition** 3-yr average (II)	**Difference** (II) - (I) (III)	**Difference in Differences** (IV)
All successions	10.391 *(0.545)* [192]	9.489 *(0.559)* [192]	-0.902 * *(0.471)*	
I. Relationship of Successor to Departing CEO				
Family successions	**11.157** **(0.825)** **[85]**	**9.131** **(0.890)** **[85]**	**- 2.026** *** **(0.669)**	**- 2.016** ** **(0.930)**
Unrelated successions	9.782 (0.724) [107]	9.772 (0.714) [107]	- 0.010 (0.648)	
II. Family Successions Only: ***Entering CEO's Academic Record***				
Not s*elective* college (NSC)	**11.293** **(1.079)** **[48]**	**7.941** **(1.222)** **[48]**	**- 3.351** *** **(0.941)**	**- 3.045** ** **(1.281)**
Selective college	10.981 (1.293) [37]	10.675 (1.259) [37]	- 0.306 (0.875)	
NSC family succession vs. unrelated succession				**- 3.341** *** **(1.137)**
NSC family succession vs. 3 digit-SIC Mean	1.997 *(0.979)* [48]	-0.873 *(1.256)* [48]	**-2.870** *** ***(0.989)***	

* Statistically different from zero at the 10-percent level, ** at 5-percent level, *** at 1-percent level.

TABLE IV.B
INHERITED CONTROL AND FIRM PERFORMANCE: MARKET-TO-BOOK RATIOS

CEO successions were classified by: (I) the relationship between entering and departing CEOs: *family* successions when both CEOs are related by blood or marriage (85 cases) and *unrelated* successions when they are not (107 cases) and, (II) conditional on observing a family succession, by the college attended by the entering CEO: "*selective" college,* when the family heir was reported to attend one of the 90 most competitive colleges as classified by Barron's (1980), and *not "selective" college,* if they were not. Market-to-book ratios are measured as the ratio of (assets plus market value of equity) minus (book value of equity plus deferred taxes), over firm assets. Robust (clustered by firm) standard errors are in parentheses in columns II and III (columns III and IV). Number of successions is reported in brackets.

Succession	**Before CEO Transition** 3-yr average (I)	**After CEO Transition** 3-yr average (II)	**Difference** (II) - (I) (III)		**Difference in Differences** (IV)
All successions	1.430 *(0.051)* [192]	1.461 *(0.060)* [192]	0.031 *(0.042)*		
I. Relationship of Successor to Departing CEO					
Family successions	**1.473** **(0.092)** **[85]**	**1.404** **(0.090)** **[85]**	**- 0.069** **(0.057)**	}	**- 0.179** ** **(0.082)**
Unrelated successions	1.396 (0.057) [107]	1.506 (0.081) [107]	0.110 * (0.060)	}	
II. Family Successions Only: *Entering CEO's Academic Record*					
Not s*elective* college (NSC)	**1.534** **(0.103)** **[48]**	**1.366** **(0.089)** **[48]**	**- 0.168** * **(0.085)**	}	**- 0.227** ** **(0.107)**
Selective college	1.395 (0.163) [37]	1.454 (0.173) [37]	0.059 (0.066)	}	
NSC family succession vs. unrelated succession					**- 0.278** *** **(0.103)**
NSC family succession vs. 3 digit-SIC Mean	0.220 *(0.110)* [48]	0.022 *(0.103)* [48]	**-0.197** ** ***(0.922)***		

* Statistically different from zero at the 10-percent level, ** at 5-percent level, *** at 1-percent level.

TABLE V.A
RETURN ON ASSETS AND FAMILY SUCCESSIONS: REGRESSION RESULTS

Dependent variable: return on assets (in percent) is measured as earnings before interest and taxes, over firm assets or change in return on assets as indicated. Family succession is an indicator variable that takes the value of one when the departing and entering CEOs are related by blood or marriage. *After* is an indicator variable that takes the value of one in the post-succession period. Conditional on observing a family succession (85 cases), *not "selective" college* is an indicator variable that takes the value of one when the family heir was not reported to attend one of the 90 most competitive colleges as classified by Barron's (1980). The table presents estimates for the dependent variables for a two, and four-year windows around each CEO transition. Standard errors are in parentheses.

	Return on Assets (ROA) (%)				**Change in ROA**
	All Successions ± 2 Years	All Successions ± 2 Years	All Successions ± 4 Years	Family Successions Only ± 2 Years	All Successions ± 2 Year
	(I)	(II)	(III)	(IV)	(V)
Family succession *after	**-2.727** *** ***(0.861)***	**-2.807** *** ***(0.852)***	**-1.590** ** ***(0.621)***		**-2.750** ** ***(1.289)***
After	1.251 *(1.384)*	1.508 *(1.370)*	0.389 *(0.417)*	0.846 *(2.049)*	
Family succession NSC*after				**-4.429** *** ***(1.243)***	
Year effects	Yes	Yes	Yes	Yes	No
Firm fixed-effects	Yes	Yes	Yes	Yes	No
3-digit SIC mean ROA	No	Yes	Yes	Yes	No
Matched by propensity score [a]	No	No	No	No	Yes
Number of successions	192	192	192	85	185
Number of firm-years	754	754	1,435	334	185

[*] Statistically different from zero at the 10-percent level, [**]at 5-percent level, [***]at 1-percent level.
[a] Nearest neighbor matching with replacement. Controls: pre-succession return on assets, board ownership, 3-digit SIC industry R&D spending, market to book value and log of sales.

TABLE V.B
MARKET-TO-BOOK AND FAMILY SUCCESSIONS: REGRESSION RESULTS

Dependent variable: market-to-book ratios are measured as the ratio of (assets plus market value of equity) minus (book value of equity plus deferred taxes), over firm assets or change in market-to-book as indicated. Family succession is an indicator variable that takes the value of one when the departing and entering CEOs are related by blood or marriage. *After* is an indicator variable that takes the value of one in the post-succession period. Conditional on observing a family succession (85 cases), *not "selective" college* is an indicator variable that takes the value of one when the family heir was not reported to attend one of the 90 most competitive colleges as classified by Barron's (1980). The table presents estimates for the dependent variables for a two, and four-year windows around each CEO transition. Standard errors are in parentheses.

	Market-to-Book Ratios				**Change in M-B**
	All Successions ± 2 Years	All Successions ± 2 Years	All Successions ± 4 Years	Family Successions Only ± 2 Years	All Successions ± 2 Year
	(I)	(II)	(III)	(IV)	(V)
Family succession *after	**-0.210** *** ***(0.062)***	**-0.214** *** ***(0.062)***	**-0.119** ** ***(0.047)***		**-0.189** ** ***(0.091)***
After	0.068 *(0.099)*	0.073 *(0.098)*	0.093 *(0.059)*	0.089 *(0.134)*	
Family succession *NSC*after*				**-0.193** ** ***(0.081)***	
Year effects	Yes	Yes	Yes	Yes	No
Firm fixed-effects	Yes	Yes	Yes	Yes	No
3-digit SIC mean M-B	No	Yes	Yes	Yes	No
Matched by propensity score [a]	No	No	No	No	Yes
Number of successions	192	192	192	85	185
Number of firm-years	754	754	1,435	334	185

[*] Statistically different from zero at the 10-percent level, [**]at 5-percent level, [***]at 1-percent level.
[a] Nearest neighbor matching with replacement. Controls: pre-succession market-to-book ratio, board ownership, 3-digit SIC industry R&D spending, return on assets and log of sales.

TABLE VI
CEO SEPARATION CONDITIONS

All regressions include (1) a post-succession constant (*after*), (2) year dummies, (3) 3-digit SIC mean ROA, and (4) firm-fixed effects. The table presents estimates for the dependent variables for a two-year window around each CEO transition. Standard errors are in parentheses.

	Dependent Variable: Return on Assets					
	All Successions			**Family Successions Only**		
	(I)	(II)	(III)	(IV)	(V)	(VI)
Family succession **after*	**- 2.812***** ***(0.856)***	**- 6.674**** ***(3.146)***	**- 2.723***** ***(0.871)***			
Family succession NSC*_after_				**- 4.405***** ***(1.238)***	**-12.00***** ***(2.877)***	**- 4.449***** ***(1.251)***
After	1.521 *(1.379)*	2.459 *(2.619)*	1.296 *(1.398)*	1.399 *(2.064)*	3.320 *(2.183)*	0.945 *(2.064)*
Non-"retirement" **after*	- 0.370 *(1.141)*			- 3.069 * *(1.660)*		
CEO departed before age 65**after*			0.651 *(1.061)*			- 1.232 *(1.963)*
Year effects	Yes	No	Yes	Yes	No	Yes
Firm fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes
3-digit SIC mean M-B	Yes	Yes	Yes	Yes	Yes	Yes
Number of successions	192	20	192	85	14	85
Number of firm-years	754	78	754	334	54	334

* Statistically different from zero at the 10-percent level, **at 5-percent level, ***at 1-percent level.

TABLE VII
ALTERNATIVE HYPOTHESES

All regressions include (1) a post-succession constant (*after*), (2) year dummies, (3) 3-digit SIC mean ROA, and (4) firm-fixed effects. The table presents estimates for the dependent variables for a two-year window around each CEO transition. Standard errors are in parentheses.

	Dependent Variable: Return on Assets					
	All Successions			**Family Successions Only**		
	(I)	(II)	(III)	(IV)	(V)	(VI)
Family succession **after*	**-2.783** *** ***(0.856)***	**- 2.698** *** ***(0.860)***	**- 4.446** *** ***(0.987)***			
Family succession NSC*_after_				**- 4.374** *** ***(1.249)***	**- 4.321** *** ***(1.237)***	**- 4.301** *** ***(1.234)***
After	1.449 *(1.572)*	0.757 *(1.467)*	0.178 *(1.400)*	0.054 *(1.572)*	1.411 *(2.123)*	1.685 *(2.244)*
Departing CEO remains as chairman*_after_	0.027 *(0.974)*			1.029 *(1.461)*		
Board minus entering CEO ownership *_after_		0.012 *(0.023)*			- 0.044 *(0.033)*	
Ownership*_after_			0.364 *** *(0.118)*			0.314 ** *(0.137)*
Ownership squared *_after_			- 0.006 ** *(0.003)*			- 0.005 * *(0.003)*
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes
3-digit SIC mean M-B	Yes	Yes	Yes	Yes	Yes	Yes
Number of successions	192	183	183	85	83	83
Number of firm-years	754	719	719	334	326	326

* Statistically different from zero at the 10-percent level, ** at 5-percent level, *** at 1-percent level.

TABLE VIII
IMPLICIT CONTRACTS

Dependent variables are: (1) employment: number of employees, thousands; (2) employees/assets: number of employees, per million dollar of assets; (3) sale of plant and equipment: sale of plant and equipment over assets, percent; and (4) Research and development (R&D) spending over sales, percent. Family succession is an indicator variable that takes the value of one when the departing and entering CEOs are related by blood or marriage. *After* is an indicator variable that takes the value of one in the post-succession period. Family succession**After* is the interaction of post-succession and the *family* indicator variables. The table presents estimates for the dependent variables for a two-year window around each CEO transition. Standard errors are in parentheses.

	Employment	**Employees / Assets**	**Sale of Plant and Equipment/ Assets (%)**	**R&D / Sales (%)**
	(I)	**(II)**	**(III)**	**(IV)**
Family succession*a*fter*	**- 1.438** ***(1.262)***	**0.0167** ***(1.214)***	**- 0.0126** ***(0.2606)***	**0.073** ***(0.286)***
After	1.309 *(2.024)*	- 0.2844 *(1.948)*	0.578 *(0.409)*	0.016 *(0.433)*
Year effects	Yes	Yes	Yes	Yes
Firm fixed-effects	Yes	Yes	Yes	Yes
Number of successions	192	192	179	107
Number of firm-years	751	751	630	403

[*] Statistically different from zero at the 10-percent level, [**]at 5-percent level, [***]at 1-percent level.

FIGURE I
CEO Succession Announcements: Cumulative Abnormal Returns