

No. 908

**WHAT CAUSES CHIEF EXECUTIVE OFFICER(CEO)
TURNOVER? - AN EVENT HISTORY ANALYSIS OF
ENTREPRENEURIAL FIRMS**

by

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March 2001

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February, 2001

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ABSTRACT

This study examines the antecedents of CEO turnover using a cohort of 103 companies that initiated their public offerings in 1988 using an event history analysis methodology. The results indicate that the financial performance of the company has a negative effect on CEO turnover, while the profitability of the IPO and the intrusion of outside directors as a result of the IPO have a positive effect on turnover. The power of the CEO and being a founder CEO were not significantly related to CEO turnover.

Key words: CEO turnover, IPO firms, and event history analysis

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INTRODUCTION

Each year, the owners of many privately held companies seek to raise capital in the US equity market. There are a variety of reasons why the owners of a privately held firm may seek to take their company public through an initial public offering. These include (1) a need for expansion capital; (2) a desire to obtain greater public visibility for the firm; (3) the ability to use stock in place of cash for future mergers and acquisitions; and (4) tax and estate planning; and (5) the insiders' desire to receive cash compensation for their early entrepreneurial efforts (Marino et al., 1989:51).

Going public provides a firm with key additional resources for continued growth and survival. It also provides a firm with an increased level of legitimacy in the business community, which improves its access to debt financing, creates a means for expansion of operations, and a means for exit by major shareholders (Finkle, 1998:6; Welbourne & Andrews, 1996). Yet only a sparse amount of research has focused on these entrepreneurial organizations.

In particular, little effort has been made to research CEO turnover in initial public offering (IPO) firms. It was recently reported that more than 100 chief executive officers left their posts in December, 1999 in the United States which is 85 percent more than in the same period a year ago. In 2000, CEO changes were numbered at 1,079, of which 574 were made between August and December, compared with 269 in the August to December 1999 period. (CNN, 2000). Given the increase in CEO turnover in recent months and the importance of the IPO as a stage in the firm's growth cycle (the IPO results in cash that will finance the organization's future growth), an

understanding of leadership at this stage could aid in our knowledge of leadership, entrepreneurship, and firm growth. CEO turnover after the IPO may have significant negative or positive associations with organizational performance (i.e. Carroll, 1984; Haveman, 1993). However, with some exceptions (i.e. Burton, Fried, & Hisrich, 1997), few studies have examined the determinants of CEO turnover in entrepreneurial firms (Rubenson & Gupta, 1996).

The role of the CEO may be particularly important in entrepreneurial firms where each individual's contribution is more manifest. In addition, the impact of the CEO may be even higher for IPO firms, which are newly in the public eye, which must make internal changes to manage the new reporting requirements of the Security and Exchange Commission (SEC), and which are now more accountable to the general public. Being at this stage in the firm's growth cycle (the IPO) may accelerate cycles of organizational change and give more importance to CEO turnover. Given the potential criticality of CEO presence in entrepreneurial firms, particularly at the time of the IPO, our study contributes to the entrepreneurship and leadership literatures by examining the determinants of CEO tenure for up to five years after the IPO.

The purpose of this study, therefore, is to predict causes of CEO turnover in IPO firms. Particularly, we focus on CEOs who were in their jobs at the time of the initial public offering (IPO). We examine the financial performance of the company, the power of the CEO, the profitability of the IPO, and the intrusion of outside directors as a result of the IPO on CEO turnover using event history analysis.

THEORY AND HYPOTHESES

We employ three perspectives in predicting CEO turnover in IPO firms: (1) organizational performance, (2) CEO power, and (3) IPO characteristics. While a substantial body of research and writing about the effects of financial performance and CEO power certainly exist (see Finkelstein & Hambrick, 1996; Kesner & Sebor, 1994), their empirical interests have been directed at CEO turnover in large enterprises (i.e. Fortune 500 companies). The empirical studies that examine CEO turnover in entrepreneurial firms are much more sparse. In addition, given that the initial public offering is one of the greatest events in the life of an organization, it is interesting and important to bring variables that depict the characteristics of the IPO into our scope of research. To this end we construct hypotheses that address the relationships between CEO turnover and (1) CEO voluntary selling at the point of IPO and (2) the intrusion of outsiders caused by IPO.

Organizational Performance

Previous research has found that successful organizational performance (e.g. stock price increases) extends CEO tenure (Osborn et al., 1981; Puffer & Weintrop, 1991; Tushman & Romanelli, 1985). Although operationalization of organizational performance varies across studies, it has been reported to date that (1) ROE 3 years prior (Dalton & Kesner, 1985), (2) ROE 1 year prior (Friedman & Singh, 1989), (3) 1 year shareholder returns (Cannella and Lubatkin, 1993), and (4) ROA 3 years prior (Datta & Guthrie, 1994) are negatively associated with CEO turnover. This is a logical assumption, as good organizational performance will instill pride in the organization and a desire to continue to build and grow the firm. In addition, good financial performance can lead to increased personal rewards such as bonuses or the growth in the value of personal stock ownership, motivating incumbent CEOs to remain in the firms. Therefore it follows that:

H1: Increases in the financial performance of the company will decrease CEO turnover.

CEO Power

Power is defined as “the potential ability to influence behavior, to change the course of events, to overcome resistance, and to get people to do things that they would not otherwise do” (Pfeffer, 1992: 30). Power enables CEOs not only to increase support for themselves but also to reject threats to replace them. Empirical research has reached an agreement that the greater the power of the CEO, the less the rate of succession, and that replacements of CEOs are least likely to take place when CEO power is institutionalized (Allen & Panina, 1982; Hambrick & Fukutomi, 1991; Ocasio, 1994; Weisbach, 1995).

In principle, CEOs have two sources of power: (1) position legitimacy and (2) ownership structure. Welbourne and Cyr (1999) noted that position status is a legitimate form of power and resources tend to be allocated to those individuals who possess higher levels of positions. The position at the highest echelon of hierarchies provides legitimating power (i.e. authority) to CEOs (Pfeffer, 1981).

While this view of CEO power is more static in that anyone who occupies the CEO position possesses the same level of power, another dimension of CEO power addresses more dynamic and fluid facets of power: ownership structure. As stated in resource dependence theory (Pfeffer & Salancik, 1978), power is a function of (1) the importance of resources, (2) availability of alternative sources of resources, and (3) presence of alternative forms of resources. In addition to the general principle that financial resources are important and non-substitutable forms of resources for firms, the lack of organizational legitimacy of entrepreneurial firms in stock markets creates a situation in which firms are unable to find investors with ease. This limited availability of

alternative sources of resources increases the power of actors and institutions that provide financial resources to entrepreneurial firms.

Pitcher et al. (2000: 627) argue that the power of incumbent CEOs is a result of the structure of ownership or the composition of the board as well as the length of tenure and his or her personal characteristics. A number of studies indeed have demonstrated that ownership structures determine CEO power and ultimately CEO turnover. Boeker (1992) and Zajac and Westphal (1996), for instance, found that the greater the shareholding of CEOs relative to that of outside directors, the longer the CEO tenure. Although the data employed in these studies primarily consist of large enterprises, the argument is still relevant to our research context. Going public should dramatically change ownership structures and make firms less financially dependent on specific actors (i.e., CEOs) not only because shareholdings become less concentrated and more diversified through the offering but also because CEOs who typically possess great proportions of shares enrich their personal bank accounts by cashing-out at the point of IPO. The possible variations in ownership structures and, particularly, CEO shareholding after IPO provide us a unique opportunity to examine relationships between CEO turnover and changing power structures which have been suggested in prior research. It follows that:

H2: An increase in CEO power will decrease the likelihood of CEO turnover.

In addition to the ownership structure, another crucial determinant of CEO power, particularly in the entrepreneurial context, is whether or not a CEO is a founder of the firm. We expect both positive and negative effects of being a founder on CEO turnover. On the one hand, there is no doubt in the public's eye that a founder CEO (ex. Michael Dell and Bill Gates) is a successful entrepreneur (Cringely, 1996). Regardless of the reality that only a handful of founders become successful entrepreneurs, we tend to hold this biased view of founders not only because of

the publicity associated with them but also because of their charisma. Aldrich (1999) argues that if founders do not possess skills and capabilities to frame issues and convince others to believe that the nascent firms have bright futures, they are unable to attract the interest of investors and resource providers to start up the business. Although we recognize that not all of the founders are charismatic, it is reasonable to presume in our research context of CEOs in IPO firms, that if founders are able to bring their firms to successfully through the IPO process to ultimately trade in the stock exchange, they are more or less charismatic, successful, and powerful.

On the other hand, an alternative perspective focuses on the misfit of the management skills of CEOs, rather than on CEO power. Ocasio (1994) found that dynamic changes in organizational environments trigger de-institutionalization of CEO power that eventually increases the likelihood of turnover. Going public is a major event in the firm that involves a great amount of change and requires completely different management skills of organizational leaders. Founders may not be able to adjust to the increased demand for information disclosure and decreased autonomy that may accompany an IPO. Also, founder CEOs may not have the management know-how and experience necessary to run a firm once it has reached the IPO stage. Founders may have the vision to initially start a venture but they may not have the ability to lead a bureaucratized, high-growth company that must answer to a large array of shareholders. It should be noted that the CEOs' desire for their company to prosper and go IPO does not affect the fact that they may not be able to sustain their position in the company, be it voluntarily or involuntarily. Given this logic, it is possible to speculate that founder CEOs are more likely to leave the company after the IPO versus non-founder CEOs. Therefore, we propose two alternative hypotheses that predict the effects of being a founder CEO on turnover:

H3a: A founder CEO is more likely to leave the firm after the IPO.

H3b: A founder CEO is less likely to leave the firm after the IPO.

IPO Characteristics

Our research context provides us with a unique opportunity to enrich our understanding of the IPO event in the life of organizations and, in particular, the succession of organizational leaders. The last set of hypotheses address variables intrinsic to the IPO context: (1) voluntary selling of share by CEOs and (2) the intrusion of outsiders into the organization. The effects of these variables at the point of IPO (1988) will be examined in order to examine the immediate effect of the IPO process on CEO turnover.

First, on the basis of the presumption that CEOs are opportunistic and interested in gaining personal wealth from taking their firms IPO, we anticipate that when the IPO makes CEOs rich, they are more likely to leave the firm. A successful IPO process indicates that the goal of “going IPO”, which was to raise capital for the further growth of the organization, was accomplished, brightening the future prospects of the firms. Due to the trend of large jumps in stock price during the first few days of trading of new offerings, CEOs may choose to sell a portion or all of their stocks to increase their personal fortune, against the wishes of underwriters. (Underwriters generally do not like CEOs selling stock because of the negative signaling effect that may occur in the market.) But CEOs may be opportunistic, being more interested in personal gain and the thrill of taking a company public, rather than being involved in the future growth and maturation of the company. For instance the creator of the Palm Pilot left the company to begin Handspring, which competes directly with the Palm Pilot, even though the company was taken IPO. He eventually took Handspring IPO, which turned out to be one of the most successful offerings of 1999. Going public and increasing personal wealth via the IPO may be the ultimate goal of CEOs. Therefore it follows that:

H4: The amount of profit that a CEO makes via the IPO is positively associated with CEO turnover.

The second hypothesis that describes the effects of the IPO process on CEO turnover is the increased intrusion of outsiders. The IPO occurs when owners of organizations (i.e. entrepreneurs and equity owners of the venture) sell some part of the company to the public by registering a statement with the Securities and Exchange Commission (SEC). Going public enables firms to obtain capital, borrow more capital from external sources, raise their equity, and increase prestige and legitimacy (Hisrich & Peters, 1992).

However, going public also means that these firms are no longer privately held companies. It involves information disclosure and reduced autonomy, and ultimately yields external actors the opportunity to exercise influence organizational governance structures (Weisbach, 1988) and cause instability in the organizations. Weisbach (1988) and Allen and Panian (1982), for instance, found that the number of outsiders on boards of directors is negatively associated with CEO tenure. The IPO completely changes the corporate governance structure and allows the intrusion of outsiders in the management of organizations as they buy shares of ownership in the organization. We anticipate that the greater the intrusion at the point of IPO, the more instability will result leading to a higher likelihood of CEO turnover.

H5: The increased intrusion of outsiders at the point of IPO is positively associated with CEO turnover.

METHOD

Sample Characteristics

Our research strategy involved selecting a specific cohort of firms that went public in a given year and then tracking the CEOs over time to examine the factors that lead to CEO turnover

using event history analysis. We examine data obtained from 103 firms that initiated their IPO in 1988 and completed the process in either 1988 or 1989. Approximately 250 firms filed securities registrations with SEC in 1988. Our data includes firms for which we could obtain a prospectus in 1988 and a proxy statement for 1989 through 1993. In addition, we only studied firms that provided a good or service to exclude such firms as real estate trusts or other financial types of institutions that did not have employees (McBain & Krause, 1989; Welbourne & Andrews, 1993; Welbourne & Cyr, 1999). An advantage of this analysis based on the specific cohort, a group of firms that went IPO in 1988, is that we are, to some extent, able to control macro contextual and institutional factors that may significantly change over time during the observation period. It is, for instance, beyond our scope of research to examine how rates of CEO turnover in IPO firms is influenced by the International Securities Enforcement Cooperation Act of 1990 that encourages the SEC to cooperate with other nations' securities market and regulations or how effects of this regulation vary across organizations or industries. We selected the 1988 cohort to exclude effects of the 1987 stock market crash.

The data were created from several different sources: (1) the prospectus, (2) the annual proxy statement for each firm, (3) COMPUSTAT, (4) Spectrum 5 Quarterly Reports, and (5) Securities Data Corporation (SDC) database (see Table 1 for a list of variables).

TABLE 1 ABOUT HERE

The prospectus is the document provided to the Securities and Exchange Commission prior to the public offering. The Securities Act of 1933 and the implementing legislation, the Securities Exchange Act of 1934, require the filing of an accurate registration statement disclosing all material facts prior to a public offering. The prospectus contains a wealth of information regarding

the firm's management, its industry, the risks it faces, and its intended strategy (Marino et al., 1989:51). Although the potential for positive bias exists in the prospectus, the firm is liable for any information that might mislead investors. Therefore given this requirement and the fact that the SEC requires a tremendous amount of detail regarding company operations, prospectuses are a useful data source (Marino et al., 1989; Welbourne & Andrews, 1996).

Since the prospectus for 1988 was not readily available in public sources (e.x. Edgar Online Database), we obtained copies from Disclosure, a private data clearing house for the Securities and Exchange Commission. After creating code sheets and a coding handbook to ensure the accuracy of the data collection, we trained two coders and obtained information from the prospectus and proxies for the year 1988 through 1993 about tenure of CEOs, founders of the IPO firms, proportions of outside directors on the boards at the point of IPOs, and organizational age (see below). In order to ensure the accuracy of the data, any question about codes were resolved through group consensus, which involved meetings with the coders and the researchers.

The characteristics of our sample are as follows. The median number of employees in 1988 was 220. On average the IPO offer price was \$7.54 with a standard deviation of \$4.78. The average board size at the point of IPOs was 5.59 with a standard deviation of 1.92. Approximately 20 percent of the subjects had 1000 or more employees. The average CEO age at the point of IPOs was 46.17 with a standard deviation of 8.52. All of the CEOs were male. Their average tenure prior at IPOs was 6.53 years. The firms were located throughout the United States but were most heavily concentrated in the Pacific states and were in numerous industries, such as food service, retailing, biotechnology, and minimills.

Independent Variables

There are three sets of independent variables for hypothesis testing: (1) organizational performance, (2) CEO power, and (3) IPO characteristics. First, we measured organizational performance of the firms for 1988 through 1993 in three ways: (1) *return on assets* (ROA), (2) *book value per share*, and (3) *revenue*. These have been typically employed in organization literature as indicators of financial performance of firms (e.x. Huselid, 1995; Welbourne & Andrews, 1996). We collected these firm-year data from the COMPUSTAT.

Second, we measured CEO power in two ways: (1) CEO shareholding and (2) founder CEO. We followed a recommendation in Pitcher et al. (2000), who suggested that CEO power relative to the board should be operationalized in terms of ownership structures and, particularly, CEO shareholding relative to crucial actors (i.e. board of directors). Although a number of prior studies (i.e. Ocasio, 1994) have indeed employed the boards data for computing CEO power in organizations, the only board data may not be sufficient to depict power structures in the IPO firms whose board size tend to be relatively small. We therefore expanded the scope of possible influential actors so as to include actors who possess more than 5% of corporate shares: insiders. By using Spectrum 6, we obtained the number of shares held by the CEOs and the insiders for each year from 1988 through 1993. We then divided the CEO shareholding by the insider shareholding and termed it *CEO power* after log transformation. As stated in Hypothesis 3, we also used as another indicator of CEO power whether or not a CEO is a founder of the firm. We obtained this information from the firm's prospectus and created a dummy variable, *CEO Founder*, which indicates 1 when the CEO is also the founder.

The third set of independent variables depicts two characteristics of IPOs: (1) voluntary selling of shares by the CEO and (2) the intrusion of outsiders into the organization. The former characteristic is operationalized in two ways: (1) change in CEO stock ownership just after the IPO

and (2) change in book value at the time of IPO. We divided the number of shares held by the CEO seven days after IPO by the number of shares held prior to IPO. This should indicate what proportion of shares CEOs sold at the point of IPO. We then collected information on the stock price change seven days after IPO and multiplied it with the proportion data above. This calculated variable, termed *CEO IPO Cash-out*, should indicate the financial profit that CEOs made by cashing out their shares at the point of, or just after, the IPO. We also created another variable that indicates the potential motivation of CEOs to cash out their shares. An underlying logic here is that the greater increase in the firm's value, the more likelihood that CEOs cash out shares. We divided the book value seven days after the IPO by that prior to the IPO and termed this variable *IPO Book Value Change*. It should be noted that while *Book Value per Share* is a longitudinal variable from 1988 to 1993, *IPO Book Value Change* is a cross-sectional variable that provides information about the organization at the point of IPO in 1988. All information for these two variables was collected from the SDC.

The latter IPO characteristic is pertinent to the intrusion of outsiders into the organization. This characteristic is operationalized in two ways: (1) how the IPO caused reduction of power of outside directors and (2) how the IPO resulted in exposure of firms to outsiders. The level of influence of outsiders who possess shares as outside directors prior to IPO should change because the IPO enables firms to have its shares traded publicly in stock markets. A crucial question is to what extent outside directors hold or reduce their influence after IPO which leads to a change in ownership structure. We divided the number of shares held by outside directors seven days after IPO by the number of shares held prior to IPO. This variable, termed *Power Holding by Outside Directors*, should indicate to what extent outside directors hold their influence in the firm after IPO on the basis of stock ownership. Higher scores on this variable imply that outside directors hold

their power and influence regardless of the IPO.

Another dimension of the intrusion of outsiders examined is the number of outside directors present at the point of IPO. The proportion of outside directors on the boards has been employed as a measure of external influence and control in prior research (i.e. Pfeffer & Salancik, 1978). We created a variable, *% of Outside Director at IPO*, by dividing the number of outside directors by the number of directors on the boards. It must be noted again that these two variables describe organizational conditions at the point of IPO in 1988, rather than longitudinal trends of organizations from 1988 to 1993. We collected data for *Power Holding by Outside Directors* and *% of Outside Director at IPO* from the SDC and prospectus, respectively.

Dependent Variable

In event history analysis (see below also), the dependent variable is the event of interest. This method estimates speed and rates of occurrence of events and provides information about the risk of the occurrence that each subject in the database faces. In our research context, the dependent variable (or the event) is CEO turnover.

We obtained the annual proxy statements for each firm from 1989 to 1993 in order to trace changes of CEOs in these IPO firms. The proxy is updated annually so that the time unit for CEO tenure is year, rather than day or month. As noted above, we limited our focus to tenure and turnover of those who were CEOs at the point of IPO. We read through the management section of each proxy statement and coded our CEO turnover variable as a "1" if the CEO who was with the company at the time of the IPO (data obtained from the prospectus) was no longer CEO of the company. We coded a "0" if the CEO who had been with the firm at the time of the IPO was still CEO at the time the proxy was written.

Given that our sample is a group of fairly high risk firms (due to their engaging in the

offering process and being relatively younger and smaller), we had to deal with the fact that firm survival unfortunately confounded our CEO survival measure. A firm may have gone out of business during the five year period of our study. Thus, we needed to make a decision about how to handle the data when a firm went out of business but retained the original CEO until that point in time (e.g. is this to be considered turnover for our CEO data?). After five years, about 70 percent of the firms in our sample were still in business as of year-end 1993 (5 years after the IPO). When we “count” CEO turnover as an event when a firm disappears, then about 43 percent of the CEOs left during this five-year period. When we assume that CEO turnover does not occur when the firm goes out of business, then 35 % of the CEOs left the firm during this five-year period.

There were several options available for handling the firm survival and turnover, and we decided to use the most methodologically conservative option data (see Clarkberg, Stolzenberg, & Waite, 1995). We presumed that in firms going out of business CEO turnover did not occur, even though CEOs may have lost their job due to firm disappearance.

On the basis of this approach, we conducted the life table analysis and presented the results in Table 2.

TABLE 2 ABOUT HERE

The life table analysis provides basic information as to speed and timing of the occurrence of the event. According to Table 2, a dramatic increase in CEO turnover is seen after the second period (1989-90). Of the CEOs who left their corporations, 35.6% of the turnover events took place between the second and the third years after the IPO (survival rate = 0.8252). CEO risk of leaving is highest during this time period. Then CEO turnover decreases a bit to 31.1% between the third and fourth years (survival rate = 0.6893), and to 28.9% between the fourth and fifth years (survival rate = 0.5631).

Control Variables

We controlled for characteristics of organizations known to affect CEO tenure or turnover. We included the followings in our analysis as control variables: (1) *Manufacturing*, (2) *Firm Age*, and (3) *Number of Employees*.

First, a dichotomous measure indicating whether the firm was in manufacturing or service was used to control for industry. Given the relatively small sample size, we chose not to use a more extensive industry coding scheme (due to degree of freedom needed for the analysis).

Second, older firms may have an advantage over younger firms by having more information, resources, citations, and experience which may affect organizational performance. Age is measured as the number of years since the organization was founded and was obtained from the company prospectus.

Third, large organizations buffer CEOs from accountability pressures. Because inertial forces tend to be greater in larger organizations, CEOs may be less likely to affect organizational performance than in smaller firms (Friedman and Singh, 1989:728). Larger organizations may

benefit from economies of scale, experience, market power, access to resources (Aldrich & Pfeffer, 1976; Pfeffer & Salancik, 1978; McBain & Krause, 1989). Size is measured as the number of employees in the organization and was obtained from the company prospectus.

RESULTS

Table 3 provides the correlation matrix, means, and standard deviations of the covariates. Because we found high correlation coefficients between *Power Holding by Outside Directors* and *IPO Book Value Change* ($r=-0.94$) and *CEO Power* and *Firm Age* ($r=0.61$), we computed the condition number indexes for each of the regression models in order to detect the effects of collinearity (Belsley et al., 1980). Although this method was originally developed as a “meaningful method for determining when an inverse of a given matrix ‘blows up’” (Belsley et al., 1980: 101) in linear regressions, it gives us, at least, information regarding whether or not the multicollinearity is detrimental. Chatterjee and Price (1991) recommended that analysts should acknowledge the harmful effects of multicollinearity when the condition index exceeds 15. Belsley et al. (1980) recommends that analysts should always take corrective actions when it exceeds 30.

TABLE 3 ABOUT HERE

We used event history analysis to examine turnover of CEOs. This method is appropriate for the purpose of this research because this method enables us to (1) examine determinants of CEO turnover as an event, (2) examine effects of time variant covariates, and (3) deal with right-censored data (Blossfeld & Rohwer, 1995; Yamaguchi, 1991). The last point means that even though a firm did not experience CEO turnover during our observation period, this method

uses the non-occurrence of the event as crucial information for the estimation, rather than just treating it as a zero as in cross-sectional logistic regressions. In general, this method estimates speed, and rates, of occurrence of events and provides information about the risk of the occurrence that each subject in the data set faces. Although the most representative estimation model in event history of analysis is the Cox model, we employed the Weibull model. This is because by using the Weibull model, (1) we are able to avoid violating the proportional hazard rate assumption of the Cox model which states that the effects of independent variables are constant throughout time and (2) the shape of the population distributions can be presumed to be more flexible than in the Cox model (Stata, 2000).

Table 4 presents the results of hypothesis testing using the Weibull model. It should be noted that the four partial regression models are presented in order to maximize the number of observations that can be analyzed per model. For example, the number of subjects drops to 40 in model D due to the inclusion of IPO characteristic variables so that caution should be used in interpreting the findings. The inclusion of IPO characteristic variables in the model (model C) will greatly decrease the number of subjects and the explanatory power of the model. It should be noted that a model with all of the variables included was examined. The results were little different from those found in models A through D. However, the number of observations drops to just 34 CEOs with 8 turnover events, severely limiting the degrees of freedom of the model. Therefore, it is dubious that we have enough variance in the dependent variable for a reliable model when all of the variables are included.

TABLE 4 ABOUT HERE

In the third row from the bottom of Table 4, we present the condition numbers for each of the regression models in order to diagnose the detrimentalness of collinearity. The condition numbers for the models ranged from 2.63 to 7.83. Even models C and D in which two highly correlated variables are used simultaneously as covariates, the condition numbers did not exceed 30 or even the more conservative restriction of 15. Therefore, while the results of the diagnostic tests acknowledge presence of the problem, it turns out that any corrective action is not necessary. As stated in hypothesis 1, increases in the financial performance of the company does decrease CEO turnover. Book value per share and revenue are negatively related to CEO turnover at the $p < .05$ and $.01$ significance levels in all models. ROA was positively, though not significantly related to CEO turnover.

No significant support was found for hypothesis 2 which examines that relationship between CEO power and turnover though a negative relationship is shown to exist between the variables. No significant support was also found for hypothesis 3 which examines the relationship between being a founder CEO and turnover though a positive relationship is shown to exist between the variables.

Support was found for hypothesis 4 which examined the relationship between the amount of profit that a CEO makes via the IPO and CEO turnover. Both CEO cash-out ($p < .05$) and IPO book value change ($p < .01$) were positively related to turnover indicating that CEO turnover is more likely (or faster) to take place when CEOs made greater personal financial gains at the point of IPO. Therefore high CEO profit leads to increased turnover.

Partial support was found for hypothesis 5 which examines the intrusion of outsiders at the point of IPO and CEO turnover. Although we did not find significant associations between the percentage of outside directors and CEO turnover, we found that power holding by outside

directors was positively related to CEO turnover ($b = 4.6, p < .01$). This finding implies that when IPOs did not result in a reduction of influence of outside directors, CEOs are more likely (or faster) to leave the firms.

Three of our findings about the effects of IPO characteristics are visually replicated in Figure 1 in which we graphed the survival rates in relation to (1) *CEO IPO Cash-out*, (2) *IPO Book Value Change*, and (3) *Power Holding by Outside Directors*.

FIGURE 1 ABOUT HERE

Figure A is a graph of the survival rates for all subjects. Figure B through D indicate survival rates for those with high or low scores of these variables. We created the high and low groups from the top and bottom 25% in the categories of interest.

Figure B graphs the survival rates for CEOs who cash out their stocks at the point of IPO. As the graph indicates CEOs with low cash-out constantly leave the firms across the observation periods. On the other hand CEOs with high cash-out tend to have the greatest drop in survival rates from IPO through the end of period 2, 1990 – 1991 (from 1.00 at the beginning of period 0 to about .50 at the end of period 2). This demonstrates that CEOs who made greater money through the IPO are faster to leave the firms. In addition, Figure C supports this argument by demonstrating that the survival rates for the group that has the higher IPO book value change were always lower than the group with the lower change during this time period. This implies that CEOs who had a possible situation in which they could make great financial gains out of IPOs are faster to leave the firms.

Figure D graphs CEO survival rates in relation to power holding by outside directors. Although the slopes of the survival rate graphs are similar throughout the all observation periods, a general tendency we found is that CEOs are faster to leave the firms when the IPOs did not result in a reduction of influence of outside directors. This confirms our finding above that when outside directors lose their influence because of IPOs, the CEO's tenure tends to be longer. Another interesting finding in Figure D is that the effects of the power holding did not last, but disappeared after the period 3 (1990 – 1991). This is probably because we measured this facet of the intrusion just at the point of IPO and this variable may lose its explanatory power as firms grow and face more diversified elements of external control.

Therefore our analyses indicates that (1) financial performance of the firms, (2) the IPO characteristics of CEO profit, and (3) the intrusion of outsiders have a significant relationship with CEO turnover. CEO power as measured by stock holding or being a founder CEO does not have any significant effect on CEO turnover.

DISCUSSION

Our study was designed to understand the effects of a variety of variables on CEO tenure after the company's initial public offering. Some of the hypotheses were supported, while some received partial support, and some were rejected.

In summary, we found that the (1) financial performance of the company is associated with longer tenure and that the (2) profitability of the IPO and (3) power holding by outside directors is associated with lower tenure or turnover.

Our first theoretical contribution is the finding that the financial performance of the company leads to decreased turnover. Not surprisingly, CEOs who are leading profitable

companies are more likely to remain after taking the company IPO. This reinforces the point that the financial performance of the company is important in determining the tenure of CEOs (Dalton & Kesner, 1985; Friedman & Singh, 1989; Cannella and Lubatkin, 1993; Datta & Guthrie, 1994).

Our second contribution is that the profitability of the IPO and power holding by outside directors at the point of IPO leads to increased turnover. If a CEO is able to make a great deal of profit by cashing out his personal shares in the company, he/she will do so and subsequently leave the company. This is supported by the fact that a positive change in IPO book value also leads to increased turnover. It has been noted that CEOs selling their shares may cause a negative signal in the market for the offering. Nonetheless CEOs can act opportunistically and choose personal fortune over the success of the firm. CEOs may be more interested in the process of taking the company public and the profits that come in the process than the long-term success of the company. CEOs may also be cashing out because they have decided to leave the company and looking for the best time to cash out their shares.

On the other hand, an alternative positive view for cashing out may be that by selling shares the CEO is making the firm less dependent on one person and providing more shares to the public to be traded (thus, creating opportunities for stock price to increase). More research on the actions taken by the CEO after the IPO, and the reasons for those decisions, is needed to further understand our results.

In examining the intrusion of outsiders, power holding by outside directors at the point of IPO was also found to be positively related to turnover, though the percentage of outside directors was not significantly related to CEO turnover. Power holding by outside directors indicates to what extent outside directors hold their influence over the firm post-IPO on the basis of stock ownership. The results indicate that if outsiders increase ownership as a result of the IPO, CEOs

are more likely to leave. Perhaps CEOs see the increase in the power of outsiders as a decrease in their autonomy and choose to leave the company. The fact that the percentage of outside directors was not significantly related to CEO turnover, emphasizes the point that it is the power of outsiders rather than the mere number of outsiders on the boards of companies that is important. (An increase in outsiders does not necessarily indicate that these board members hold power.)

It was found that CEO power was not significantly related to CEO turnover. This is probably because power structures in IPO firms are unstable during our observation periods. While external actors may begin to increase and exercise their influence after IPO, their power may not have been institutionalized before year-end 1992 (5 years after the IPO). Therefore CEOs may use their power obtained before IPO to respond to external threats to replace them. But dynamic processes are going on just after the IPO between firms and the external actors so that this dynamism may entangle the effects of CEO power on tenure.

Finally, being a founder CEO did not affect CEO turnover. One reason that this relationship was not found may be because CEOs who are able to take their companies IPO have sufficient management skills for their companies. The IPO would not have come into fruition if the CEO did not have the necessary management experience to convince prospective investors to invest in the company. Therefore, achieving an IPO is a major accomplishment for the seasoned manager that creates a second honeymoon for him/her and whether or not the CEO is the founder or not is irrelevant. Any founder that could not take their firms to the IPO stage most likely is eliminated from the company long before the IPO occurred.

In addition to these contributions, this research also presents several implications. First, our finding of the significant effects of the IPO variables on CEO turnover raises questions about the generalizability and applicability of previous research. As noted above, most of the previous

studies on CEO turnover employed data from large well-established corporations such as Fortune 500 firms. A major advantage of using such a dataset resides in the availability and completeness of the data where researchers are less likely to face the problem of truncated data. However, the significant results of the IPO variables in this research of IPO companies imply that entrepreneurial firms employ their own logic and mechanisms to which previous research does not apply. Arguments have been made that researchers should pay closer attention to the contexts in which entrepreneurs and entrepreneurial firms are embedded, rather than simply apply findings of previous research based upon multinational conglomerates (Daily & Dalton, 1993; Snell, 1992). The results of this research reinforce the argument by providing evidence that the context of IPO companies have independent effects on CEO turnover.

Second, this research points to a potential dilemma faced by CEOs of IPO companies. On the one hand, by selling shares at the point of the initial public offering the CEO may be increasing his/her personal wealth. On the other hand, the CEO is making the firm less dependent on one person, allowing for the entrance of outsiders, and providing more shares to be traded publicly (thus, creating more opportunities for stock prices to increase). The dilemma is, therefore, that while IPOs provide a huge opportunity for personal wealth, this decreases CEOs' incentives to remain with their firms. This dilemma is actually consistent with a finding in Sapienza and Korsgard (1996) in which they found that entrepreneurial firms need to manage conflict between external demands for information disclosure and internal needs for sustaining organizational autonomy. By highlighting this dilemma faced by CEOs after the IPO, this research not only demonstrates a downside of going IPO but also opens the door for future research exploring the types of dilemmas faced by entrepreneurial firms after the IPO and the mechanisms that facilitate resolution of such dilemmas.

Third, our findings also suggest a new area for entrepreneurial research which is the meaning of firms to entrepreneurs. Both our significant finding on the CEOs' personal earning and non-significant finding on the founder effect imply that some founders are not attached to their firms but view them as a transactive vehicle with which to enrich their own economic status. This implies that not all founders are not like the legendary entrepreneurs (e.x., David Packard, Steve Jobs, etc.) who possess strong loyalty and commitment to the firms they started. A possible explanation may be that CEOs do not psychologically attach themselves to firms under high velocity environments with high probabilities of failure. It will be interesting to examine the social constructivism (Berger & Luckman, 1966) of the meaning of firms to entrepreneurs, how this meaning changes longitudinally over time, and what mechanisms cause any changes CEOs' views.

Limitations and Future Research

As in any study, our research has limitations that should be taken into consideration when interpreting the findings. First, our measure of CEO turnover was obtained from the annual proxy statements of firms in our sample. This means that we were not able to determine when the CEO left the firm, only if he/she was still there when the proxy was completed. In addition, the measure was confounded by the fact that some firms ceased to exist. Their reason for not being in business may be due to bankruptcy, merger, acquisition, or going private. The CEO at the firm at the time of the IPO may still be with the organization in the case of the merger or if it goes private. Future research that can assess in more detail the status of the CEO (and perhaps the reasons for their leaving or staying) would be useful.

Second, our study was conducted on a fairly specific sample of IPO firms that initiated their offering in 1988. The 1988 sample may represent a less risky group of firms because it immediately followed the 1987 stock market crash. We do not yet know whether our results are generalizable beyond the 1988 through 1993 time period or to non-IPO firms. Future research is needed to address this issue.

Lastly, our measures of CEO and outside director power are somewhat limited. Future research will benefit by choosing samples of IPO firms that are more recent as the SEC requires more data than they did in 1988. In addition, we suggest that researchers supplement archival data with our data sources (such as surveys, press releases, interviews) in order to obtain more information about the power of the CEOs and members of the board of directors.

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Table 1: Variables

	Variable Name	Descriptions	Source
1	<i>ROA</i>	Return on assets at time t	Compustat
2	<i>Book Value per Share</i>	Book value per share at time t	Compustat
3	<i>Revenue</i>	Revenue at time t	Compustat
4	<i>CEO Power</i>	CEO's stock holding / Total insider stock holding at time t	Spectrum 5 (log transformed)
5	<i>CEO Founder</i>	CEO is a founder of the firm (1 = Yes, 0 = No)	Firm's prospectuses
6	<i>CEO IPO Cash-out</i>	(Stock price change 7 days after IPO) * (CEO's SDC stock holding after IPO / CEO's stock holding prior to IPO)	
7	<i>IPO Book Value Change</i>	Book value change 7 days after IPO	SDC
8	<i>Power Holding by Outside Directors</i>	Stock holding of outside directors after IPO / Stock holding of outside directors prior to IPO	SDC
9	<i>% of Outside Director at IPO</i>	N of outside directors / total N of directors	Firm's prospectuses
10	<i>Manufacturing</i>	Firm is in manufacturing industries (1 = Yes, 0 = No)	Prospectuses
11	<i>Firm Age</i>	Firm age at time t	Prospectuses
12	<i>N of Employees</i>	N of employees at time t	Compustat (log transformed)

Table 2: Life Table for CEO Turnover, 1988-1993

Period	Year	Number of Subjects	Turnover	Survival Rates	Std. Err.
0	1988	103	0	1.000	0
1	1989	103	2	.9806	.0136
2	1990	101	16	.8252	.0374
3	1991	85	14	.6893	.0456
4	1992	71	13	.5631	.0489

Table 3: Descriptive Statistics and Correlations of Variables

	N	Mean	S.D.	Min.	Max.	1	2	3	4	
1	ROA	392	-.14	.51	-3.41	1.19	1			
2	Book Value per Share	402	3.99	15.53	-105.00	283.68	.31	1		
3	Revenue	403	19.45	78.46	-254.83	637.99	.39	.13	1	
4	CEO Power	296	.29	.33	.00	2.78	.00	-.10	-.08	1
5	CEO Founder	449	.42	.49	.00	1.00	-.22	.06	-.05	-.10
6	CEO IPO Cash-out	320	130.60	542.16	-1169.92	3194.00	.13	.14	.17	-.01
7	IPO Book Value Change	411	18.18	148.88	-67.50	1348.00	.05	.41	-.10	-.04
8	Power Holding by Outside Directors	286	-.41	.60	-3.93	.00	.10	-.33	.19	.06
9	% of Outside Director at IPO	449	.56	.20	.00	.91	.16	.11	-.10	.05
10	Manufacturing	449	.46	.50	.00	1.00	-.06	-.30	.07	.12
11	Firm Age	446	14.32	18.47	1.00	115.00	.05	-.04	.09	.61
12	N of Employees	389	.49	.64	.00	3.22	.20	.15	.38	-.18

	5	6	7	8	9	10	11	12	
1	ROA								
2	Book Value per Share								
3	Revenue								
4	CEO Power								
5	CEO Founder	1							
6	CEO IPO Cash-out	-.16	1						
7	IPO Book Value Change	-.17	.00	1					
8	Power Holding by Outside Directors	.07	.12	-.94	1				
9	% of Outside Director at IPO	-.11	.17	-.26	.32	1			
10	Manufacturing	-.01	-.02	-.19	.12	.01	1		
11	Firm Age	-.13	.02	-.18	.22	.13	.21	1	
12	N of Employees	.02	.19	-.04	.14	-.07	-.30	-.06	1

Table 4: Results of Weibull Regressions

	A	B	C	D
1 <i>ROA</i>		.822 (.559)	1.013 (.723)	1.665 (1.113)
2 <i>Book Value per Share</i>		-.040 ** (.014)	-.036 * (.018)	-.0538 (.096)
3 <i>Revenue</i>		-.010 * (.005)	-.021 * (.011)	-.054 * (.027)
4 <i>CEO Power</i>			-.268 (1.006)	
5 <i>CEO Founder</i>			.495 (.645)	
6 <i>CEO IPO Cash-out</i>				.005 * (.002)
7 <i>IPO Book Value Change</i>				.012 ** (.005)
8 <i>Power Holding by Outside Directors</i>				4.698 ** (1.853)
9 <i>% of Outside Directors at IPO</i>				-1.175 (1.906)
10 <i>Manufacturing</i>	-.257 (.411)	-.091 (.454)	-.136 (.648)	-1.432 (.712)
11 <i>Firm Age</i>	-.030 (.021)	-.065 * (.033)	-.119 + (.068)	-.063 (.063)
12 <i>N of Employees</i>	.323 (.264)	.622 * (.284)	.523 (.544)	-.576 (.742)
Constant	-4.433 *** (.720)	-4.513 *** (.803)	-4.482 *** (1.165)	-1.498 (1.472)
x^2	5.12	20.64	17.69	16.81
LL	-50.85	-42.84	-25.55	-19.22
Condition Number	2.63	3.01	3.17	7.83
N of Observations	301	298	218	124
N of Subjects	92	91	78	40

Note 1: + p < .100, * p < .05, ** p < .01, *** p < .001

Note 2: Standard errors are in parentheses.

Note 3: We present regression coefficients, rather than hazard ratios (namely, exponentiated coefficients).

Figure 1: IPO Variables and Survival Rates

