

## **Internal Monitoring Mechanisms and CEO Turnover: A Long-Term Perspective**

MARK R. HUSON, ROBERT PARRINO, and LAURA T. STARKS\*

### **ABSTRACT**

We report evidence on Chief Executive Officer (CEO) turnover over the 1971 to 1994 period. We find that the nature of CEO turnover activity has changed over time. The frequencies of forced CEO turnover and outside succession both increased. However, the relation between the likelihood of forced CEO turnover and firm performance did not change significantly from the beginning to the end of the period we examine, despite substantial changes in internal governance mechanisms. The evidence also indicates that changes in the intensity of the takeover market are not associated with changes in the sensitivity of CEO turnover to firm performance.

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\* Huson is from the Department of Finance & Management Science, University of Alberta; Parrino and Starks are from the McCombs School of Business, University of Texas at Austin. We would like to thank George Benston, Dan Deli, David Denis, Mel Jameson, Dave Jobson, René Stulz (the editor), Sheridan Titman, an anonymous referee, and seminar participants at the 1998 American Finance Association meeting, Arizona State University, the Atlanta Finance Forum, University of British Columbia, University of Delaware, Emory University, 1998 Financial Management Association Meeting, 1999 Harvard Financial Decisions and Control Workshop, New York University, University of North Carolina, 1998 Northern Finance Association Meeting, University of Pittsburgh, 1998 Southern Finance Association Meeting, Southern Methodist University, University of Texas, University of Utah, and Washington University for helpful comments, and Rick Sias for providing data used in this study. Huson acknowledges financial support from the Pearson Faculty Fellowship at the University of Alberta.

Stockholders rely on internal and external monitoring mechanisms to help resolve agency problems that arise from the separation of ownership and control in modern corporations. Boards of directors and blockholders are important internal control mechanisms while the takeover market is a major source of external control. Both academicians and practitioners have speculated that improvements in corporate governance structures would enhance the internal control mechanisms. For example, Jensen (1993) argues that the corporate governance structures of LBO associations and venture capital funds should be models for corporations that desire more efficient control systems. Among the desirable features Jensen points to are smaller, outsider dominated boards, and substantial equity ownership by managers and board members. Similarly, Blair (1995) discusses corporate governance reformers who advocate changes like those cited by Jensen as well as greater institutional investor involvement in corporate decisions. In addition to proposing changes in internal control mechanisms, Jensen notes that the market for corporate control and other external monitoring mechanisms, such as the political, legal, and regulatory processes and the product markets, work in concert with the internal monitoring mechanisms to control agency costs between shareholders and managers.

Substantial changes in both internal and external control mechanisms have been documented in recent years, but the impact of these changes on monitoring quality is unclear, as financial economists have only recently begun to examine this question (Mikkelson and Partch (1997), Murphy (1999), and Denis and Kruse (2000)). In this paper, we provide evidence on the effects of these changes on monitoring quality and on the relations between changes in the internal and external control mechanisms. We study a primary outcome of internal monitoring, CEO turnover, during a period in which there were substantial changes in corporate governance structures and in the market for corporate control.

Our study examines CEO turnover at large public firms over the 24-year period from 1971 to 1994. During this period, outsider representation on corporate boards, the level of incentive compensation paid to outside directors, and external pressure on directors by institutional shareholders all increased, while average board size decreased. In addition, external pressure on internal monitors from the corporate control market varied greatly. The level of disciplinary takeover activity increased from the 1970s to the mid-1980s. Disciplinary takeover activity then declined as the availability of takeover

financing declined and the widespread adoption of antitakeover measures, such as poison pills and state antitakeover legislation, increased takeover costs.

We focus on CEO turnover because the decision to replace a CEO is arguably among the most important decisions made by a board of directors. It has long-term implications for a firm's investment, operating, and financing decisions. We expect that if changes in internal governance mechanisms and the external control market improve the monitoring of managers, then these changes should be accompanied by increases in the likelihoods that managers of poorly performing firms are replaced and that their successors better represent stockholders' interests.

We divide our 24-year sample period into four 6-year sub-periods, 1971 to 1976, 1977 to 1982, 1983 to 1988, and 1989 to 1994. Dividing our sample into these four sub-periods enables us to examine long-term trends in CEO turnover decisions and how these decisions changed with changes in internal monitoring mechanisms and in the level of disciplinary takeover activity. A comparison of the evidence for the first two sub-periods with evidence for the latter two sub-periods reveals that the frequency of forced CEO turnover and the frequency of turnover in which an executive from outside the firm is appointed CEO both increased significantly over the sample period. Furthermore, a comparison of evidence between the last two sub-periods shows that, despite the decline in takeover activity during the late 1980s, the frequencies of forced turnover and outside succession increased in the 1990s. This evidence suggests that the nature of CEO turnover activity has changed. However, further examination reveals that the relations between the likelihood of forced CEO turnover and accounting and stock price performance have been relatively stable over the period we examine. This latter evidence indicates that changes in internal and external governance mechanisms have not significantly changed the likelihood that the CEO of a poorly performing firm will be replaced. It also indicates that the effectiveness of internal monitoring mechanisms is not dependent on the intensity of the takeover market.

The remainder of the paper is organized as follows. Section I discusses changes in internal and external mechanisms over the sample period and hypotheses concerning how these changes are likely to influence the effectiveness of these mechanisms. The data are described in Section II and the evidence in Section III. Section IV concludes.

## I. The Evolution of Internal Monitoring Mechanisms

Characteristics of monitoring mechanisms at public firms, such as board composition and size, director compensation, equity ownership structure, and the level of disciplinary takeover activity, have changed since the early 1970s. A growing body of evidence suggests that these changes are likely to influence the effectiveness of monitoring mechanisms and therefore CEO replacement decisions (e.g., Weisbach (1988), Shivdasani (1993), Borokhovich, Parrino, and Trapani (1996), Yermack (1996), Karpoff, Malatesta, and Walkling (1996), and Mikkelsen and Partch (1997)). This section describes the changes in monitoring mechanisms that occurred during the period we examine and discusses the potential implications of these changes for CEO replacement decisions.

### A. *Board Composition and Size*

Fama and Jensen (1983) argue that outside directors tend to be more effective monitors of management than inside directors because they are generally key decision-makers at other organizations who are concerned with their reputations in the managerial-labor market. According to Fama and Jensen, outside directors signal their abilities as key decision-makers through their board decisions. Weisbach (1988) maintains that inside directors are also likely to be less effective monitors because it can be costly for them to challenge the CEO to whom their careers are tied. Existing empirical evidence is consistent with these arguments. For example, Weisbach reports that outside directors are more likely than inside directors to replace a poorly performing CEO. Borokhovich, Parrino, and Trapani (1996) find that outside directors are also more likely to replace a fired CEO with an executive from outside the firm. They argue that successors from outside the firm are more willing to break with the failed policies of their predecessors.

It is well documented that the percentage of outsiders on corporate boards has increased since the early 1970s. For instance, Bacon (1990) finds that the percentage of manufacturing companies with a majority of outside directors increased from 71 percent in 1972 to 86 percent in 1989. Over the same period, due to regulatory requirements and stockholder pressures, the monitoring role of outside directors increased as well. In 1978, in an effort to increase the independence of outside directors in their

information-gathering and decision-making functions, the New York Stock Exchange began to require that listed firms have an audit committee composed entirely of outside directors. Furthermore, in 1991, institutional investors began to pressure firms for more board independence through the stockholder proxy proposal process (Gillan and Starks (2000)).

If outside directors are more likely than inside directors to replace a poorly performing CEO and to appoint an executive from outside the firm, then the increase in outside director representation and the extensions of their monitoring role should be accompanied by increases in the strength of the negative relation between firm performance and CEO turnover and in the frequency of outside succession.

Boards of directors have also become more streamlined over the sample period. Bacon (1990) reports that the number of board members at large companies declined from a median of 14 in 1972 to a median of 12 in 1989. Jensen (1993) and Yermack (1996) argue that a more streamlined board can operate more efficiently and, thus, monitor more effectively. Their argument suggests that a reduction in board size would also be expected to strengthen the negative relation between firm performance and CEO turnover.

### *B. Board Compensation*

Since the early 1980s, the proportion of outside directors receiving stock options and/or stock grants has increased dramatically. In a 1989 Conference Board survey of 909 firms, Bacon (1989) found that six percent of firms granted stock to outside directors and 14 percent granted stock options. By the 1997 Conference Board survey, the percentage of firms paying stock-based compensation to outside directors had increased to 84 percent (Worrell (1997)). In addition, Pearl Meyer & Partners (1996) report that the stock-based compensation paid to outside directors at the 200 largest industrial and service corporations increased from two percent to 22 percent of directors' total pay between 1985 and 1995.

Stock or option grants are likely to complement the managerial labor market in providing outside directors with incentives to represent stockholder interests. Perry (1998) reports evidence indicating that CEO turnover decisions are influenced by the payment of incentive compensation to directors. He finds that the likelihood of CEO turnover following poor stock return performance is significantly greater when

directors of independent boards receive incentive compensation than when they do not. The widespread adoption of incentive compensation for outside directors might also increase the likelihood of outside succession where the appointment of a successor from outside the firm benefits stockholders.

### *C. Institutional Stockholder Ownership and Activism*

The composition of stock ownership at public firms also changed during the 1971 to 1994 period. In particular, institutional ownership increased considerably. Figure 1 shows the level and composition of stock holdings among mutual funds, private pension and government retirement funds, and insurance companies. It illustrates a steady increase in the aggregate level of holdings among these institutions over the period we study, with total equity holdings rising from 19.8 percent in 1971 to 43.9 percent in 1994.

[Insert Figure 1 about here]

As the presence of institutions in the equity markets and their holdings in individual firms have increased, the role of many institutions has developed from one of passive stockholder to that of stockholder activist. The most vocal institutional investors, the public pension funds, began to actively pressure companies through the sponsorship of proxy proposals, negotiation with the firms' management, and public targeting of poorly performing firms in the 1980s. Beginning in 1989, which coincides with the beginning of our final six-year sub-period, this activism became more frequent as well as more focused and sophisticated. Over the 1989 to 1994 sub-period, the public funds and coordinated shareholder groups initiated 616 shareholder proposals related to the firms' corporate governance as compared to 60 over the 1983 to 1988 sub-period (Gillan and Starks (2000)).

Black (1998), Gillan and Starks (1998), and Karpoff (1999) discuss institutional investor activism and the evidence on its effectiveness. They find that although there is no evidence of improvement in long-term stock market or operating performance following institutional activism (e.g., Smith (1996), Karpoff, Malatesta, and Walkling (1996), and Del Guercio and Hawkins (1999)), there is evidence that firms change their governance structures and their real activities after being targeted by institutional investors (see, for instance, Huson (1997), and Carleton, Nelson, and Weisbach (1998)). If firms change

their governance structures, CEO turnover may also be influenced by increased activism. Since the choice of which firms to monitor is typically based on prior performance (Huson (1997)), the increase in institutional ownership and activism implies a stronger performance-CEO turnover relation over the last part of our sample period, 1989 to 1994, than earlier, *ceteris paribus*.

#### *D. Relation Between Changes in Internal Monitoring Mechanisms and the Takeover Market*

The changes that have occurred in corporate governance structures over our sample period suggest that internal monitoring mechanisms, specifically boards and institutional investors, may have become more effective in disciplining management.

Like the internal mechanisms, the external control market changed during our sample period. Comment and Schwert (1995) report an increase in takeover activity from less than 0.5 percent of listed firms per month in 1975 to 1.5 percent per month in 1987 and 1988. This was followed by a steep decline in activity. By 1990, the level of takeover activity was back down to that of the mid-1970s. Whether this decline in disciplinary takeover activity weakened the overall effectiveness of corporate governance systems is unresolved. This is ultimately an empirical question because the net effect of the changes in internal and external governance mechanisms is theoretically unclear. Governance mechanisms may evolve to offset changes in the takeover market (Pound (1992)) or they may weaken when pressure from the takeover market declines (Mikkelson and Partch (1997), Hadlock and Lumer (1997)). Furthermore, even in the absence of changes in internal mechanisms, it is possible that changes in legal, regulatory, political, and product market pressures may offset some of the effects of changes in the level of disciplinary takeover activity (Jensen (1993), Hadlock and Lumer (1997)).

Mikkelson and Partch (1997), Hadlock and Lumer (1997), and Denis and Kruse (2000) examine the frequency of top executive turnover for evidence on whether internal and external monitoring mechanisms are complements or substitutes. Mikkelson and Partch and Hadlock and Lumer report evidence that the relation between firm performance and top executive turnover is weaker during periods when the threat of takeover is low. This evidence suggests that top managers face reduced disciplinary pressure in periods where there is less takeover activity. Denis and Kruse, however, find no decline in the

frequency of internally precipitated forced turnover and that the level of restructuring activity was unchanged at firms that experienced sharp declines in operating performance after the level of takeover activity declined in the late 1980s. It is difficult to draw strong conclusions from the evidence reported in these studies. The evidence reported by Hadlock and Lumer is for a period (1933 to 1941) in which internal corporate governance structures were considerably different from those that we observe today. The Mikkelson and Partch and Denis and Kruse studies examine relatively short periods of time (1984 to 1993 and 1985 to 1992, respectively). Our sample spans longer, continuous periods of both active and inactive markets for corporate control as well as periods in which there were substantial changes in the characteristics of internal monitoring mechanisms.

We also examine evidence concerning the identity of the new CEO (insider versus outsider) for an indication of whether the effectiveness of internal monitoring mechanisms changed following the decline in the takeover market. We expect that once the decision has been made to replace a poorly performing CEO, board members interested in maximizing stockholder value are likely to appoint the most qualified replacement candidate to the position. There is evidence that the appointment of an outsider to replace a fired CEO benefits stockholders more than the appointment of an insider. Outside appointments have been found to be associated with a more positive stock market reaction (Borokhovich, Parrino, and Trapani (1996)) and higher post-turnover firm performance (Huson, Malatesta, and Parrino (1999)) than inside appointments.

In summary, we are most interested in the effects that changes in internal and external monitoring mechanisms have had on an important aspect of board oversight, CEO turnover. We examine these issues by comparing evidence on CEO turnover across four six-year sub-periods in which there have been apparent and differentiable changes in monitoring mechanisms. We document changes in CEO turnover over time and examine whether the performance-turnover relation and the likelihood of outside succession have changed with board composition, board size, director compensation, and institutional ownership. Furthermore, we examine evidence on whether the effects of these changes outweigh the effects of the decline in the market for corporate control after the mid-1980s.

## II. Data

We construct our sample by first identifying all CEOs listed in the *Forbes* annual compensation surveys over the 1971 to 1995 period who have held their position for one year or less. This provides a list of CEOs who recently entered office. We then search the *Wall Street Journal* Index to identify turnovers that are announced in that publication. For each of these turnovers we obtain, from the announcement article, the name of the departing CEO and the announcement date. The *Wall Street Journal* announcements and earlier *Forbes* surveys are also used to identify when the departing CEOs entered office. After excluding turnovers that are directly related to a takeover, and announcements that occur before 1971 or after 1994, this process provides us with a sample of 1,316 CEOs who relinquished their positions at large public firms during the 1971 to 1994 period.

We then expand the sample to include CEOs who did not relinquish their positions during this period by selecting a sample of CEOs who were in office when the May 1995 *Forbes* compensation survey was published. Because our sample of turnovers represents approximately 67 percent of the turnovers identified in the *Forbes* surveys, we randomly select 67 percent of the CEOs who are profiled in the 1995 survey and who have been in office since at least 1994. This selection process yields a list of 486 CEOs. Thirty of these CEOs were in office during the entire 1971 to 1994 period.

For all CEOs, we compute the firm's accounting and stock returns for each year during his or her tenure using data from the Standard and Poor's COMPUSTAT and the Center for Research in Security Prices (CRSP) databases. We exclude the first year the CEO is in office because the overlap between the new and old CEOs in that year is likely to make measured accounting or stock returns especially noisy signals of the new CEO's performance.

The return measures we compute are: (1) the ratio of accounting earnings before interest and taxes to book assets, and (2) total stock returns. We control for industry effects by subtracting the median value of the corresponding measure for all firms in the primary two-digit SIC industry in which the firm is active at the time of the succession.<sup>1</sup> In addition to providing more precise measures of performance, the

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<sup>1</sup> Clarke (1989) has shown that the two-digit definition captures similarities among firms as well as an industry definition based on three- or four-digit SIC groupings.

industry adjustments address econometric problems in the cross-sectional analysis. Such problems could be caused by mean-reversion in accounting performance measures when the long-term mean values differ across industries.

Information on the CEO's age, tenure in office, and tenure with the firm are obtained from the *Forbes* surveys and confirmed by the *Wall Street Journal* announcements, various Marquis *Who's Who* publications, and Dun and Bradstreet's *Reference Book of Corporate Managements*.

Back-filling data over the careers of each of the 1,802 CEOs (1,316 who left office plus the 486 who remained in office in 1994) yields a large number of sample observations for non-turnover years and a broad cross-section of CEO characteristics in each sample year. Figure 2 illustrates our sample construction. A cross-section of our sample in any given year yields firms with turnover as well as firms without turnover. This latter group contains CEOs at various stages of their careers, from the newly appointed to those nearing retirement. The requirement of additional data reduces the sample for the multivariate analysis to 8,424 firm-years and 946 turnovers. The number of firm-years (turnovers) in the four six-year sub-periods spanning 1971 to 1994 are 2,065 (221) for the 1971 to 1976 sub-period, 2,159 (223) for the 1977 to 1982 sub-period, 2,112 (268) for the 1983 to 1988 sub-period, and 2,088 (234) for the 1989 to 1994 sub-period. Of the 8,424 firm-years, 6,540 are during the tenures of CEOs who eventually relinquished their positions over the sample period and 1,884 are during the tenures of CEOs who were still in office at the end of 1994.

[Insert Figure 2 about here]

The circumstances surrounding the turnovers are ascertained from *The Wall Street Journal* announcement and a review of the business and trade press. This information is used to classify each turnover as either forced or voluntary using the following decision process. First, if *The Wall Street Journal* reports that the CEO is fired, forced from the position, or departs due to unspecified policy differences, the succession is classified as forced. For the remaining cases, the succession is classified as forced if the departing CEO is under the age of 60 and the *Wall Street Journal* announcement of the succession (1) does not report the reason for the departure as involving death, poor health, or the acceptance of another position (elsewhere or within the firm), or (2) reports that the CEO is retiring, but

does not announce the retirement at least six months before the succession. The circumstances surrounding the departures of the second group are further investigated by searching the business and trade press for relevant articles in order to reduce the likelihood that a turnover is incorrectly classified as forced. These successions are reclassified as voluntary if the incumbent takes a comparable position elsewhere or departs for previously undisclosed personal or business reasons that are unrelated to the firm's activities.

We also designate new CEOs as being either insiders or outsiders to the firm based on their tenure with the firm at the time of their appointment. New CEOs who have been with the firm for one year or less at the time of their appointment are classified as outsiders. All other CEOs are classified as insiders.

The composition of the board of directors in the succession year is obtained from the firm's proxy statement, Dun and Bradstreet's *Million Dollar Directory*, and *Moody's Industrial, Banking and Financial, Transportation, and Utilities* manuals. Any director who is an employee of the firm is classified as an insider. Two different classification schemes are used to identify outside directors. In the first scheme, the proxy statement immediately preceding each succession is used to identify non-employee directors who are former officers, consultants, commercial bankers, investment bankers, lawyers, insurance company executives, or are related to an officer of the firm. All non-employee directors falling into one of these categories are classified as greys (potentially affiliated directors). All other non-employee directors are classified as outsiders. This classification scheme is similar to those used in other studies such as Weisbach (1988) and Byrd and Hickman (1992). Unfortunately, due to the difficulty of obtaining corporate proxy statements for the time period prior to 1978, we were only able to obtain data from proxy statements for 876 turnovers that took place in 1978 or later. We employ a second, simpler classification system, using data from the *Million Dollar Directory*, to obtain board composition estimates for the full 1971 to 1994 sample period. Under this second approach, directors are classified as insiders if they are officers of the firm and considered outsiders otherwise. The empirical evidence is similar for either classification scheme, so we generally report evidence from the second classification system in order to facilitate comparisons across all sub-periods.

As with any sample design process, we must consider potential sources of bias. One potential source of bias is the requirement that the turnover be announced in the *Wall Street Journal*. A second is the sample construction procedure in which we back-fill the data to obtain observations for the non-turnover years.

Requiring a *Wall Street Journal* announcement reduces the number of turnovers in the final sample, but the announcement is critical to the correct interpretation of the data for several reasons. First, although the *Forbes* surveys report the number of years that an executive has been the highest paid executive at the firm, there are cases in which this number does not correspond to the actual number of years that the individual has held the CEO title. For instance, in some cases, an individual assumes the CEO title one or two years before he or she appears in the survey. Second, we need to estimate, as precisely as possible, the point in time at which the board makes the turnover decision in order to compute accurate performance measures, i.e., measures that reflect the information available to monitors at the time of the turnover decision. Firms often announce CEO appointments several months before the new CEO takes office. The turnover announcement date is not reported in the *Forbes* survey, but is reported in the *Wall Street Journal*. Third, knowing the day on which the turnover is announced also enables us to estimate the stock price reaction to the announcement. Finally, the *Wall Street Journal* articles often provide information that is very useful in classifying turnover as forced or voluntary.

We compared the turnover frequency in our sample to that in the *Forbes* survey to determine whether our sample is representative of the population. For this comparison, we identified all executives listed in each *Forbes* survey who had been in office for one year or less at the time that the survey was published. The 11.2 percent turnover frequency for the 8,424 firm-year observations (946 turnovers) used in our multivariate analyses is slightly lower than the 11.9 percent turnover frequency in the *Forbes* surveys over the entire 1971 to 1994 period.<sup>2</sup> The turnover frequencies for the 1971 to 1976, 1977 to 1982, 1983 to 1988, and 1989 to 1994 sub-periods in our sample are also reasonably similar to those in

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<sup>2</sup> Murphy (1999) also reports an overall CEO turnover frequency of approximately 11.85 percent for the 1971 to 1995 period for the firms listed in the *Forbes* surveys from 1971 to 1992 and for the firms listed in COMPUSTAT's ExecuComp database from 1993 to 1995.

the *Forbes* surveys during those sub-periods. The turnover frequencies in the four sub-periods for our sample and for the *Forbes* surveys (in parentheses) are 10.7 percent (13.1 percent), 10.3 percent (10.7 percent), 12.7 percent (12.2 percent), and 11.2 percent (11.4 percent), respectively.

A comparison of the characteristics of our sub-sample for the 1983 to 1988 sub-period that is used in the multivariate analyses with the characteristics of the sample from Denis and Denis (1995), which covers the 1985 to 1988 period, reveals that our sample has a somewhat higher frequency of turnover (12.7 percent versus 9.3 percent) and a somewhat lower percentage of turnovers that are forced (13.3 percent versus 18.1 percent), but that the percentage of new CEOs who come from outside the firm and the percentage of fired CEOs who are replaced by outsiders in our sample and in the Denis and Denis sample are similar (17.0 percent versus 15.3 percent and 55.0 percent versus 57.1 percent, respectively).<sup>3</sup> The higher turnover frequency in our sample is not surprising if the larger firms in our sample tend to have formal succession procedures in place and are less likely to be headed by controlling shareholders. The smaller percentage of turnovers that are forced may, in part, reflect differences in the classification procedures since Denis and Denis use outside successions to help identify forced turnover and we do not. For our total turnover sample, without the data restrictions necessary for the multivariate analyses, the percentage of turnovers that are forced in the 1983 to 1988 sub-period, 17 percent, is considerably closer to that percentage in the Denis and Denis sample. The comparisons of the turnover frequencies between our sample and the *Forbes* and Denis and Denis samples suggest that our sample is reasonably representative of the population of large public firms.

### III. Evidence

#### A. Board Characteristics, Institutional Ownership, and Takeover Pressure at Sample Firms

The trends in board characteristics, institutional ownership, and takeover activity discussed in Section I suggest that internal and external monitoring mechanisms have changed over time. In order to determine whether these trends are associated with any changes in the nature of CEO turnover and in the

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<sup>3</sup> The percentage of new CEOs who come from outside the firm for Denis and Denis (1995) reflects appointments identified as external appointments in Panel B of their Table I. This definition is most consistent with ours.

turnover-performance relation, we first must establish that these trends are evident in our sample. We begin by examining board characteristics. Statistics on board size and composition in the turnover year are reported in Table I for the full sample of 1,316 turnovers and for the turnovers that occurred in each of the four six-year sub-periods. Splitting the sample into four sub-periods facilitates discussion of the different governance regimes described in Section I. Consistent with the trends discussed in Section I, the size of the board at the typical sample firm decreased and the percentages of outsider representation and share ownership by officers and directors (excluding the CEO) increased between 1971 and 1994. The data indicate that the median (mean) board size was relatively constant at approximately 14.0 (14.7) directors through the late 1980s, but declined to 12.0 (13.0) directors in the 1989 to 1994 sub-period. The median and mean changes are significant at the one percent level and their magnitudes are similar to those reported by Bacon (1990).

[Insert Table I about here]

Board composition also changed significantly over the sample period. The median (mean) proportion of non-officer directors on the typical board increased from 70.6 percent (68.2 percent) in the 1971 to 1982 sub-period to 78.6 percent (76.0 percent) in the 1983 to 1994 sub-period, with most of the change occurring between 1979 and 1984. These differences are also significant at the one percent level.

The increase in stock ownership by officers and directors, other than the CEO, is consistent with the increased use of stock-based compensation for outside directors. The median (mean) non-CEO officer and director ownership increased from 1.17 percent (4.01 percent) in the 1977 to 1982 sub-period to 1.63 percent (4.84 percent) in the 1989 to 1994 sub-period. Although some of this increase may be attributable to non-CEO insiders, it is unlikely that insiders account for the full amount, particularly given the overall increase in the use of stock-based compensation for directors reported by Worrell (1997). The increase in the median ownership of officers and directors other than the CEO is greater than the change in the median ownership for the CEO (discussed below) who typically holds a large proportion of the shares owned by all officers.

Institutional ownership data for a subset of our sample indicates that the general trend of increasing institutional ownership is also evident. Institutional ownership at the end of the quarter

immediately preceding each turnover announcement was obtained for turnovers announced between January 1980 and December 1994 from the CDA/Spectrum 13F institutional investor holdings database. The analysis is restricted to the post-1979 period because these data are not available prior to December 1979. The CDA/Spectrum data indicate that the median (mean) institutional ownership increased from 37.24 percent (35.81 percent) in the 1977 to 1982 sub-period to 54.41 percent (51.75 percent) in the 1989 to 1994 sub-period.

The last column in Table I indicates that, over the last three sub-periods, changes in the characteristics of control mechanisms were accompanied by an increase in stock ownership by the departing CEO. The median (mean) percentage of the firms' shares held by CEOs increased from 0.11 percent (0.61 percent) in the 1977 to 1982 sub-period to 0.32 percent (1.70 percent) in the 1989 to 1994 sub-period.

To check for evidence of control activity, we examined the *Wall Street Journal Index* during the 12 months preceding each of the 1,316 turnover announcements. A firm is classified as subject to control activity if evidence is found of a proxy fight, a takeover rumor, the adoption of an antitakeover measure, a board shake-up, a change in ownership requiring the filing of a Schedule 13D form with the Securities and Exchange Commission, or any similar activity. Although not reported in Table I, our findings are consistent with the general increase in takeover activity during the 1980s. The percentage of firms experiencing this type of activity prior to turnover increased from 2.0 percent in the 1971 to 1976 sub-period to 6.9 percent in the 1977 to 1982 sub-period and then to 12.3 percent from 1983 to 1988 before declining to 6.3 percent in the 1989 to 1994 sub-period.

#### *B. Forced Turnover and Outside Succession Frequencies*

Table II reports descriptive statistics on CEO turnover, forced turnover, and successor origin for each year (Panel A) and for each of the four six-year sub-periods covered by our sample (Panel B). These statistics suggest that the nature of CEO turnover has changed over time. The likelihood that a turnover is forced, that the new CEO comes from outside the firm, and that an outsider replaces a fired CEO all increase over the sample period. These trends are particularly evident when viewed across sub-

periods as in Panel B.

[Insert Table II about here]

Panel B shows that the frequency of forced turnover increases monotonically across the four sub-periods. Forced turnovers represent 23.4 percent of all turnovers in the 1989 to 1994 sub-period, a 6.4 percentage point increase over the 1983 to 1988 sub-period and a 13.2 percentage point increase over the 1971 to 1976 sub-period. The differences in the proportions of turnovers that are forced are statistically significant when the first half of the sample period is compared with the latter half and when the 1983 to 1988 sub-period is compared with the 1989 to 1994 sub-period. The increase in the frequency of forced turnover over time may reflect a change in internal monitoring or it may simply reflect a change in the way that turnovers are reported in the financial press. We examine these alternative explanations in Section III E.

The increase in the percentage of outside successions suggests that there has also been a material change in the CEO selection process. Thirty percent of the departing CEOs in the 1989 to 1994 sub-period are replaced by executives who have been employed at the firm for one year or less (Panel B of Table II). In contrast, the frequency of outside appointments is only half as large in the 1971 to 1976 sub-period. This change is evident in both voluntary and forced successions. While not explicitly reported in Table II, the percentage of voluntary successions in which an outsider is appointed increased from 11.3 percent (30 of 265 turnovers) in the first sub-period to 21.2 percent (52 of 245 turnovers) in the latest sub-period. The relatively large proportion of fired CEOs who are replaced by outsiders is consistent with evidence reported by Gilson and Vetsuypens (1993), who find that financially distressed firms are more likely to appoint an outsider to the CEO position.

The increase in the proportion of forced/outside successions from the first two sub-periods to the latter two sub-periods may indicate that boards made better replacement decisions in the latter part of the sample period. Although the increase could reflect a response by firms to changing labor market conditions, our evidence suggests otherwise. An examination of the previous employment experience of the outsiders who are appointed CEO indicates that the candidate pool for the large firms in our sample

has not substantially changed over time.<sup>4</sup>

### *C. The Turnover-Performance Relation*

We use three different measures of firm performance to examine whether there has been a change in the CEO turnover-firm performance relation across our sample period: (1) the industry-adjusted level of accounting performance; (2) the change in the industry-adjusted level of accounting performance; and (3) the industry-adjusted stock return. The first measure, the industry-adjusted level of EBIT/book assets (ROA) in the year preceding the turnover announcement provides an indication of recent accounting performance relative to other industry firms. The second measure, the change in ROA during the year preceding turnover, provides a different perspective. This latter measure shows the trend in accounting performance, relative to other industry firms, leading up to the turnover. Finally, the industry-adjusted stock return provides an indication of how well a firm's stock performed, again relative to the industry, prior to the turnover announcement.

ROA is calculated for the annual periods that best reflect the information available to internal monitors when the succession decision is made. If the succession is announced before the middle of the fiscal year, the accounting measure for the previous year is used. If it is announced in the second half of the fiscal year, the measure is for the fiscal year in which the announcement is made.<sup>5</sup>

The data indicate that turnover tends to occur when accounting returns are above the industry median, but when the industry-adjusted level of accounting performance has declined and stock returns have recently been negative. For the total sample, the median level of ROA in the year immediately preceding turnover and the median change in the level of ROA during the three years preceding turnover are 0.64 percent and -0.62 percent, respectively. The median industry-adjusted stock return, while positive (0.52 percent) over the 24 months leading up to the turnover announcement, is -0.66 percent

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<sup>4</sup> For our sample of 250 outside appointments, the percentage of new CEOs who have recently been employed as a senior executive at another firm on the *Forbes* survey or are already a director at the firm when they are hired ranges from 77.1 percent to 87.1 percent across the four sub-periods, with no apparent trend. In addition, the percentage of new CEOs who are hired from another two-digit industry ranges from 42.9 percent to 48.9 percent across the four sub-periods and also displays no trend.

<sup>5</sup> Quarterly accounting data would provide a more precise measure of the information available to internal monitors when the succession is announced. However, those data are not available from 1969, the first year for which performance measures are calculated.

during the 12 months before turnover.

The decline in ROA and the negative 12-month stock return for the total sample are attributable to the forced turnover sub-sample. In this sub-sample, the median level of ROA declines from 0.64 percent four years before the announcement to -3.26 percent in the year prior to the turnover. The mean and median levels of accounting performance and mean and median changes in this level during the three years preceding forced turnover are similar across the sub-periods that we examine.

The median industry-adjusted stock returns over the 24- and 12-month periods preceding turnover announcements are -19.67 percent and -10.86 percent, respectively, for the forced turnover sub-sample. In contrast to the accounting performance, the median stock return prior to forced turnover does vary considerably across the sub-periods. While the 6-, 12-, 18-, and 24-month returns are negative in all periods, the median 6- and 12-month returns are significantly less negative (at the two percent level) in the 1983 to 1988 sub-period (-2.74 percent and -1.42 percent, respectively) than in the 1989 to 1994 sub-period (-9.10 percent and -21.33 percent, respectively). Unfortunately, it is difficult to draw conclusions concerning these differences because the less negative returns occurred during the period in which the takeover market was particularly active. Even if the operating performance of the firms experiencing turnover in the 1983 to 1988 sub-period was comparable to the operating performance of the firms experiencing turnover in the other periods, the prospect of a takeover bid may have prevented stock prices from declining to a similar extent.

To obtain additional insights into how the turnover-performance relation and CEO replacement decisions have changed over the sample period, we examine differences in the frequencies of turnover, forced turnover, and outside succession by performance quartile across the four six-year sub-periods. Figures 3, 4, and 5 illustrate these frequencies for performance quartiles based on the level of accounting performance during the year preceding turnover.

[Insert Figure 3 about here]

Figure 3 reveals no consistent pattern across the sub-periods. The change in the frequency of turnover is monotonic across the accounting performance quartiles only in the 1983 to 1988 sub-period. Comparing the 1984 to 1988 period with the 1989 to 1993 period, Mikkelsen and Partch (1997) find a

lower frequency of turnover in the highest accounting performance quartile and a higher frequency of turnover in the lowest accounting performance quartile during the 1984 to 1988 period. Their evidence is consistent with the evidence that we report in Figure 3 for the last two sub-periods in our sample. However, because we also report turnover frequencies for earlier periods, our data provide additional perspective. Comparison across the sub-periods in Figure 3 reveals that the turnover frequency in quartile 4 is low during the 1983 to 1988 sub-period relative to those frequencies in all other sub-periods. The frequency of 6.8 percent indicates that, on average, only one in 14.7 CEOs in that performance quartile retired in a given year. In contrast, the corresponding frequencies are 10.6 percent, 11.8 percent, and 9.8 percent for the 1971 to 1976, 1977 to 1982, and 1989 to 1994 sub-periods, respectively. Furthermore, the lower turnover frequency at successful firms during the 1983 to 1988 sub-period is not apparent in our data if we employ the alternate performance measures, stock returns or changes in the level of accounting performance.

[Insert Figure 4 about here]

The turnover evidence in Figure 3 suggests that the 1983 to 1988 sub-period was different from the other sub-periods. However, examination of forced turnovers (Figure 4) and outside successions (Figure 5) reveals little evidence to support the contention that monitoring mechanisms were more effective during this period as suggested by Mikkelsen and Partch (1997) (Mikkelsen and Partch do not differentiate by type of turnover or successor). For example, the large difference in the frequency of turnover between the first and fourth accounting performance quartiles during the 1983 to 1988 sub-period in Figure 3 is not reflected in a proportionate increase in the frequency of forced turnover in the lowest performance quartile (Figure 4). In fact, Figure 4 suggests that CEOs of firms in the lowest performance quartile are more likely to be fired during the 1989 to 1994 sub-period than during any other period. The frequency of forced turnover is uniformly higher in the lowest performance quartile, regardless of the performance measure used to partition the sample during that sub-period, than in any other period. This frequency is also higher during the last two sub-periods as compared to the first two sub-periods. Figure 5 shows that the frequency of outside appointments at firms in the lowest performance quartile was also higher in the 1989 to 1994 sub-period than in earlier sub-periods.

[Insert Figure 5 about here]

To further examine how the firm performance-turnover relation and CEO appointment decisions have changed over time, we use a logit analysis. Table III presents coefficient estimates for models in which the dependent variable equals one if there is turnover and zero if there is no turnover. These models, which are all estimated using 8,424 firm-years of data during the tenures of CEOs who are in office for at least three years, include control variables for CEO age, whether the CEO is a member of the founding family, and the natural log of sales. Model 1 is estimated with the level of ROA as the performance measure, Model 2 is estimated with the change in ROA, and Model 3 is estimated with the industry-adjusted stock return during the 24 months preceding the month in which the succession is announced.<sup>6</sup> Because it is necessary to measure past performance of a firm under a CEO's direction, any CEO who is in office for less than three years is excluded from this analysis. Dummy variables and interaction terms with the performance measures are used to test for differences, across the sub-periods, in the relations between firm performance and the likelihood of turnover. Dummy variables are included for the 1971 to 1976, 1977 to 1982, and 1989 to 1994 sub-periods to allow for direct comparison of the relations for these sub-periods with that for the 1983 to 1988 sub-period, when the takeover market was especially active. Results similar to those reported in Table III are obtained from models that include all three performance measures and their associated interaction terms simultaneously.

[Insert Table III about here]

A CEO age dummy is included in the models to capture the effect of the normal succession process on the likelihood of turnover. Consistent with the criteria used to identify forced departures, this dummy variable equals one if the departing CEO is 60 years of age or older and zero otherwise. We use a cut-off age of 60 rather than the typical retirement age of 65 because we are focusing on the point at which the CEO title is relinquished, and not necessarily the point at which the incumbent CEO leaves the

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<sup>6</sup> We use 24-month stock return for several reasons. First, this period encompasses the periods over which ROA is computed. In some instances, ROA is computed for the period covering 18 to six months preceding the announcement. Second, because stock returns reflect changes in expected operating performance, this measure should cover a period preceding the year in which accounting performance is measured. Finally, Warner, Watts, and Wruck (1988) report evidence that stock returns predict forced turnover as much as 18 months before it occurs.

firm. Vancil (1987) notes that a chairman who is CEO often passes the CEO title to his or her successor several years before retirement in order to facilitate an orderly succession process. The coefficients for the CEO age dummy in Table III reflect the influence of age on the normal retirement and succession process; the coefficients are positive and significant in every model.

A founding family dummy and the natural log of sales are included in all models to capture the effects of CEO and institutional stock ownership, board composition, managerial depth, and formal succession processes on the likelihoods of the various outcomes. Actual CEO and institutional stock ownership and board composition data are not used due to the high cost of collecting this data for the 8,424 firm-years used to estimate the models.

Founding family members are identified from the *Wall Street Journal* succession announcements, corporate proxy statements, and articles in the business and trade press. The founding family dummy variable equals one if the incumbent CEO is a member of the founding family and is zero otherwise. A review of proxy statements for firms headed by a CEO who is a member of the firm's founding family indicates that the median founding family CEO directly or indirectly controls over five percent of the firm's shares. The negative coefficient estimates for the founding family dummy across all three models of Table III are consistent with the notion that the relatively large blocks of stock controlled by founding family members enable them to retain their positions longer than other CEOs. These relations are also consistent with those reported by Morck, Shleifer, and Vishny (1989), and Parrino (1997).

We expect the natural log of sales to be negatively related to the percentage of shares owned by the CEO (Jensen and Murphy (1990)) and positively-related to the proportion of outside directors (Parrino (1990), and Bacon (1990)) and institutional ownership (Sias and Starks (1997)). We also expect the log of sales to be positively related to managerial depth and the presence of a well-defined succession process (Dalton and Kesner (1985)). Examination of simple correlations in our data confirms that the natural log of sales is a reasonable proxy for CEO and institutional stock ownership and board composition. The natural log of sales is negatively correlated with CEO ownership and positively correlated with the percentage of outside directors and institutional ownership. We also find that the natural log of sales is negatively correlated with ownership by officers and directors other than the CEO and positively correlated with the

number of directors on the board. The positive coefficient estimates for the natural log of sales in all three models in Table III are consistent with the notions that low fractional ownership reduces the ability of a CEO to resist efforts to replace him or her, that greater institutional ownership is associated with a greater likelihood of turnover, and that outside directors are more likely to replace a CEO.

The negative coefficient for ROA in Model 1 of Table III is consistent with evidence from other studies that poorly-performing CEOs are removed from office (see, for example, Coughlan and Schmidt (1985), Warner, Watts, and Wruck (1988), and Weisbach (1988)). The coefficient estimates for the interaction terms with ROA indicate that at the five-percent level, there are no significant differences in the relation between the likelihood of turnover and the level of accounting performance over the sample period. In particular, the statistically insignificant coefficient for the interaction term between ROA and the 1989 to 1994 sub-period dummy variable is inconsistent with the evidence reported by Mikkelson and Partch (1997) who find no relation between the industry-adjusted level of accounting performance and the likelihood of turnover in the 1989 to 1993 sub-period.<sup>7</sup> Similarly, examination of the sensitivity of turnover to changes in accounting performance in Model 2 indicates that the likelihood of turnover is at least as sensitive to the *change* in accounting performance during the 1989 to 1994 sub-period as it was in the 1983 to 1988 sub-period.

The relation between the likelihood of turnover and stock returns during the two years preceding turnover is negative and significant in the 1983 to 1988 period (Model 3). This is inconsistent with the evidence reported by Mikkelson and Partch (1997), but consistent with the significant negative relations documented in other studies such as Warner, Watts, and Wruck (1988). The insignificant coefficient estimates for the interaction terms suggest that stock returns are not significantly more strongly related to the likelihood of turnover in the 1983 to 1988 sub-period than in any other period we examine. This suggests that internal monitoring is no less effective when the disciplinary takeover market is weak than when it is active. Furthermore, internal monitoring is no more effective in the 1989 to 1994 sub-period, despite the substantial changes we have observed in the internal monitoring mechanisms.

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<sup>7</sup> When Model 1 is re-estimated with dummy variables and interaction terms for the first three sub-periods, the coefficient estimate for ROA (-1.553) is significant with a two-tailed p-value of 0.055.

The logit models in Table III provide evidence for all turnovers. In order to obtain additional insights on the performance-turnover relation, we estimate multinomial logit models in Table IV that separate voluntary from forced turnovers. The coefficient estimates for the voluntary turnover outcome in Models 1, 2, and 3 reveal that, with the exception of the 1983 to 1988 sub-period, there is no evidence of a significant relation between the likelihood of voluntary turnover and performance. During the 1983 to 1988 sub-period, voluntary turnover is more likely at firms with low levels of accounting returns and poor stock performance. This evidence for the level of accounting performance in Model 1 is consistent with the large difference, across accounting performance quartiles, in the overall turnover frequency illustrated in Figure 3.

[Insert Table IV about here]

Forced turnovers, on the other hand, are negatively related to the level and the change in ROA as well as to industry-adjusted stock returns in all four sub-periods. It is worth noting that the estimated relation with the level of ROA is stronger in the 1977 to 1982 sub-period than in the 1983 to 1988 sub-period (Model 1). This suggests that the relation between the level of accounting performance and the likelihood of forced turnover actually weakened during the active takeover market of the 1980s. Furthermore, the negative and marginally significant coefficient estimate for the interaction term for the 1989 to 1994 sub-period in Model 2 indicates that managers of firms that experienced a decline in accounting performance were more likely to be fired for poor performance in the last sub-period than when disciplinary takeover activity was at its peak. Together, the results for forced turnovers in Table IV suggest that the observed changes in external and internal governance mechanisms have no discernable impact on the effectiveness of internal monitoring.

We also estimated models, similar to those in Table IV, in which we distinguish between turnovers based on whether the replacement CEO came from inside or outside the firm. This partition is used to capture the notion that outside appointments are more likely when the board desires a significant change from the policies of the departing CEO. Here we used successor choice, rather than the voluntary/forced distinction, as an indicator that the board desires change. The evidence from these models, which is not presented in a table, reveals that the likelihood of an outside appointment is significantly higher in the

1989 to 1994 sub-period than in any of the previous sub-periods and is significantly negatively related to accounting and stock returns in all sub-periods. However, as with the evidence for forced turnover, the relations between the likelihood of outside succession and the performance measures do not vary significantly across the four sub-periods. This suggests that although the frequency of outside succession has increased, this increase is not related to an increase in the likelihood that an outsider is appointed to replace the CEO of a poorly performing firm when we control for CEO and firm characteristics.

One possible explanation for the generally insignificant coefficient estimates for the interaction terms in Tables III and IV is lack of power. However, we do not believe that lack of power explains the evidence for several reasons. First, since our sample is considerably larger than those used in other studies (e.g., Mikkelsen and Partch (1997), and Hadlock and Lumer (1997)) there is no a priori reason to expect that the tests we report have less power than those reported in other studies. Second, examination of the pre-turnover performance distributions in each sub-period shows them to be similar. If turnover were more sensitive to performance in the different sub-periods, we would expect the pre-turnover performance distributions to systematically vary across the sub-periods. Finally, examination of the probabilities of forced turnover implied by the models in Table IV suggests that differences in the performance-turnover relation over time are not economically significant and that there is no systematic change in this relation over time. Table V reports these implied probabilities for the forced turnover outcomes in each of the models in Table IV.

[Insert Table V about here]

#### *D. Board Composition and Size, Stock Ownership, and the Nature of Turnover*

We have discussed evidence on changes in the nature of CEO turnover and suggested that the changes we document are related to changes in governance variables. However, we have not yet reported evidence of a direct link between forced turnover or outside succession probabilities and the governance variables that we discuss in Section I. We do this in Table VI where we report coefficient estimates for bivariate probit models. The dependent variable in the first regression of each of these models equals one if there is turnover and zero otherwise. This regression is estimated using all firm-

years for which the required data are available. The dependent variable in the second regression varies across the four models. In Models 1 and 2, the dependent variable in the second regression equals one if the turnover is forced and zero otherwise. In Models 3 and 4, the dependent variable in the second regression equals one if an executive from outside the firm is appointed CEO and zero otherwise. The second regression in each model is estimated using data for turnover years only.<sup>8</sup> In the interest of brevity, we report the coefficient estimates only for the second regression in each model. These coefficients represent marginal effects, conditional on CEO turnover taking place.

[Insert Table VI about here]

Model 1 is estimated using data for turnovers where proxy and institutional ownership data are available. The coefficient estimates for this model indicate that the likelihood of forced turnover is positively related to the fraction of shares held by officers and directors other than the CEO and negatively related to CEO fractional ownership. The ownership of officers and directors (including the CEO) influences the likelihood of forced turnover. One possible explanation for the insignificant coefficient estimates for the board composition, board size, and institutional ownership variables in Model 1 is that, with only 68 forced turnover observations, the power of the tests is low.<sup>9</sup> To examine this possibility, we estimate Model 2 using the board size and composition data from the *Million Dollar Directory* and the natural log of sales as a control for ownership structure. Doing this enables us to expand the forced turnover sample to 115 observations. The significant positive coefficient estimate for the non-employee director variable in this model is consistent with the notion that outside directors are more likely to fire a CEO than inside directors.

Models 3 and 4 in Table VI are estimated to examine how governance variables influence the CEO replacement decision. The coefficient estimates for Model 3, which are estimated using data for turnovers where proxy and institutional ownership data are available, suggest that governance variables

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<sup>8</sup> Borokhovich, Parrino, and Trapani (1996) discuss the use of bivariate probit models in examining CEO turnover.

<sup>9</sup> Although we find no relation between the level of institutional ownership and CEO turnover, Parrino, Sias, and Starks (2000) find that changes in institutional ownership over the two years preceding a turnover predict forced versus voluntary turnovers. This evidence is consistent with the hypothesis that institutional investors influence board decisions.

influence the choice between an insider and an outsider. The likelihood that an outsider is appointed CEO is positively related to the percentage of outside directors and the percentage of the firm's shares owned by officers and directors other than the CEO. The coefficient estimates for Model 4, which is estimated using the board size and composition data from the *Million Dollar Directory*, also suggests that the likelihood of an outside appointment is also positively related to the proportion of non-employee directors on the board. The significant relations between the likelihood of outside succession and board composition and officer and director ownership in Models 3 and 4 suggest that the increase in the frequency of outside appointments over the sample period does not simply reflect a response by firms to changing economic conditions or changes in labor market conditions.

The significant positive coefficient estimates for the 1989 to 1994 dummy variable in Models 1, 3, and 4 of Table VI indicate that there is also a general increase in the fraction of turnovers that are forced and in which an outsider is appointed from the 1983 to 1988 to the 1989 to 1994 sub-periods. These increases are not related to the proxies for internal governance that we use in our analysis. As discussed earlier, one possible explanation for the increase in the frequency of forced turnover is simply that CEO firings have been more widely reported by the financial press in recent years. Improved press coverage may have resulted in more accurate reporting of the nature of CEO successions in the 1980s and 1990s than in the 1970s. We report evidence on this explanation in the following section.

#### *E. Has There Been a Change in the Manner In Which Turnovers Are Reported in the Press?*

To obtain insight as to whether the increase in the frequency of forced turnover in our sample simply reflects a change in the manner in which turnovers are reported in the press, we first examine the press articles describing each of the 213 forced turnovers in our full sample. Our sample of forced turnovers includes both turnovers that were reported in the financial press as having been forced and turnovers that were not reported as having been forced.<sup>10</sup> If the manner in which turnovers are reported has changed so that more forced turnovers are identified correctly by the press, we would expect the

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<sup>10</sup> Recall that a turnover is classified as forced even if it is not identified as forced in the financial press when the CEO departs prior to age 60 and does not leave for other employment or for health reasons.

proportion of forced turnovers in our sample that are classified as forced due to the information reported in the *Wall Street Journal* to increase over time. It does not. The percentages of forced turnovers with direct evidence of being forced and without direct evidence of being forced (in parentheses) for each of the four sub-periods we examine are 76.7 percent (23.3 percent), 69.8 percent (30.2 percent), 75.4 percent (24.6 percent), and 76.0 percent (24.0 percent), respectively. The absence of a trend in these proportions is inconsistent with the theory that changes in the manner in which turnovers are reported is responsible for the increased frequency of forced turnover that we observe.

We also examine how average stock price reactions to turnover announcements change over time to gain insight as to whether the fundamental nature of CEO turnover changed in recent years or whether there has simply been a change in the accuracy of turnover reporting. Table VII reports average two-day (0,1) cumulative abnormal returns for the entire sample period and for the four six-year sub-periods for the different types of turnover in Table II.<sup>11</sup>

[Insert Table VII about here]

The cumulative abnormal returns indicate that CEO firings in the most recent years tend to have greater stockholder wealth implications than firings in the 1970s. The average abnormal return around forced turnover announcements increases significantly during the last two sub-periods. Furthermore, the abnormal returns suggest that outsiders who replace fired CEOs in the 1989 to 1994 sub-period are perceived by the market as benefiting stockholders more than outsiders appointed in earlier periods.<sup>12</sup> This evidence indicates that, contrary to the argument that reporting accuracy has improved, there has been a material change in the nature of turnover decisions.<sup>13</sup>

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<sup>11</sup> The sample used in Table VII is restricted to CEO turnover announcements that do not have confounding events. However, the results are essentially the same when all turnovers are included in the analysis.

<sup>12</sup> Since the first two sub-periods also have low levels of takeover activity, the higher abnormal returns in the 1989 to 1994 sub-period are unlikely to reflect only lower takeover activity in this sub-period.

<sup>13</sup> The Chi Square test statistics reported in Table VII imply that outliers do not drive the differences between the abnormal returns in the 1983 to 1988 and 1989 to 1994 sub-periods for forced turnover and forced/outside succession. The right tail of the distribution for both sub-samples is significantly fatter in the 1989 to 1994 sub-period. The significant Chi Square test statistics for the total turnover sample reflect an overall increase in the dispersion of abnormal returns in the 1989 to 1994 sub-period.

#### **IV. Conclusion**

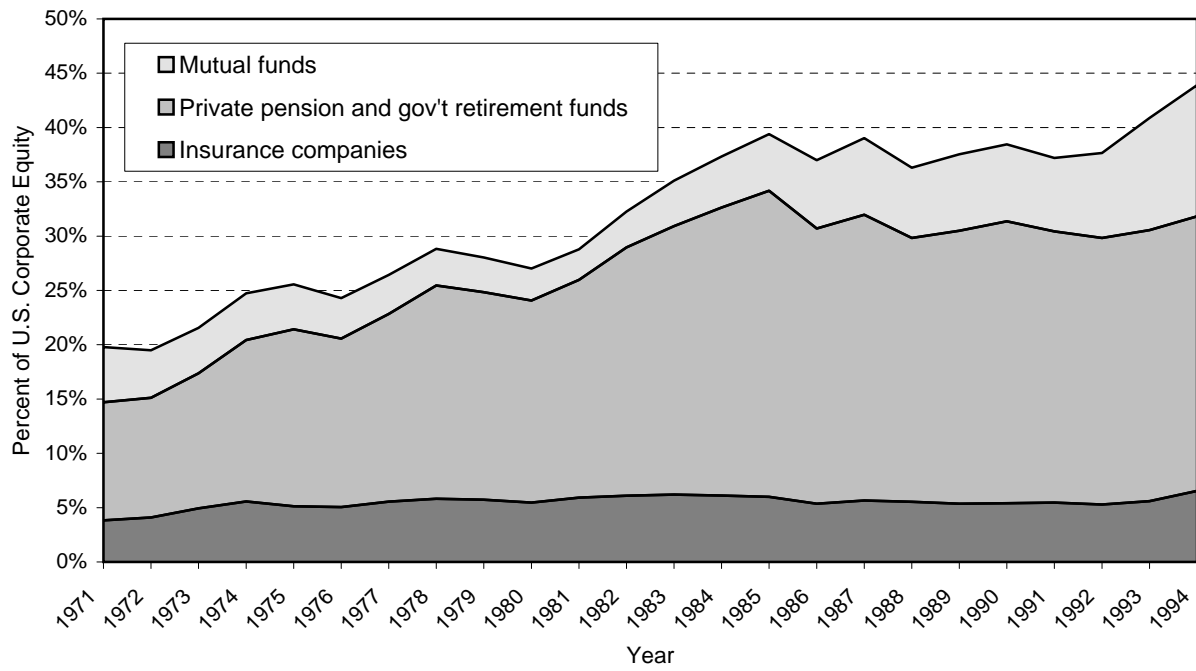
We examine the evolution and interrelation of internal and external monitoring mechanisms over time, from the early 1970s through the mid-1990s. We test whether changes in these mechanisms have resulted in changes in their effectiveness. We find that the frequency of forced CEO turnover and the frequency of outside succession have increased. We also document significant relations between board composition and director stock ownership and the likelihoods of forced CEO turnover and outside succession. However, we find that although there have been significant changes in internal mechanisms, the relation between the likelihood of forced CEO turnover and firm performance does not change significantly from the beginning to the end of the period that we examine. Thus, although the characteristics of internal monitoring mechanisms and the nature of CEO turnover have changed, overall there has been no significant change in the sensitivity of forced turnover to firm performance. Furthermore, contrary to the conclusions of previous studies that examine more limited time periods (Mikkelson and Partch (1997), Hadlock and Lumer (1997)), we find that the sensitivity of forced CEO turnover to firm performance does not vary with the intensity of the takeover market. Thus, the evidence is inconsistent with the theory that a more active takeover market strengthens internal control mechanisms.

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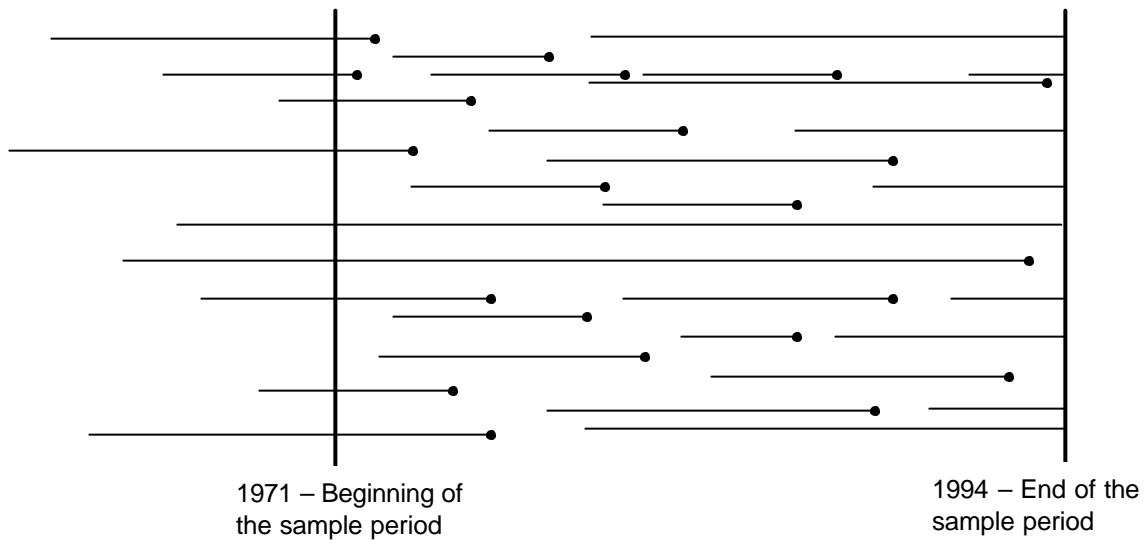
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**Figure 1. Institutional Ownership.** Percentage of U.S. corporate equity held by U.S. investors that is managed by mutual funds, private pension and government retirement funds, and insurance companies. Source: Federal Reserve Board, *Flow of Funds Accounts of the United States*.



**Figure 2. Sample Construction.** Each of the lines with a bullet on the end represents the tenure of a departing CEO, where the bullet represents the year in which turnover occurs. A line with no bullet at the end represents a CEO who is still in office at the end of the sample period.

**Table I**  
**Sample Firm Board and Ownership Characteristics**

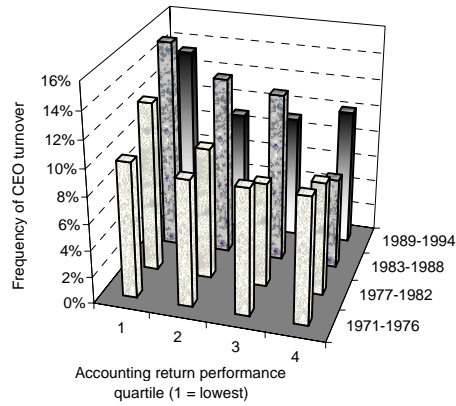
Board and ownership characteristics in the turnover year for 1,316 turnovers at large public firms between 1971 and 1994. Median tests are used to test differences in the median values and t-tests are used to test differences in mean values.

	Median (Mean) Number of Directors	Median (Mean) Percentage Non-Officer Directors	Median (Mean) Officer and Director Less CEO Stock Ownership	Median (Mean) Stock Ownership of Institutions	Median (Mean) Stock Ownership of Departing CEO
Panel A: Descriptive Statistics for Entire Sample and for Four Six-Year Sub-Periods:					
Entire period:					
1971-1994 (n=1316)	13.0 (14.3)	75.00% (72.31%)	1.35% (4.24%)	46.68% (44.79%)	0.19% (1.00%)
Sub-periods:					
1) 1971-76 (n=295)	13.0 (14.5)	69.20% (65.89%)	NA NA	NA NA	NA NA
2) 1977-82 (n=319)	14.0 (14.7)	71.40% (70.35%)	1.17% (4.01%)	37.24% (35.81%)	0.11% (0.61%)
3) 1983-88 (n=382)	14.0 (14.8)	77.80% (75.54%)	1.32% (3.85%)	44.34% (42.58%)	0.17% (0.63%)
4) 1989-94 (n=320)	12.0 (13.0)	78.60% (76.49%)	1.63% (4.84%)	54.41% (51.75%)	0.32% (1.70%)
Panel B: P-Values for Two-Tailed Tests that the Sub-Period Characteristics Are Equal:					
Tests that the median and mean in the first two sub-periods equal the median and mean in the last two sub-periods:					
Median	0.022	0.001	0.153	0.001	0.001
Mean	0.027	0.001	0.644	0.001	0.013
Tests that the median and mean in the third sub-period equal the median and mean in the fourth sub-period:					
Median	0.004	0.392	0.088	0.001	0.001
Mean	0.001	0.289	0.126	0.001	0.001

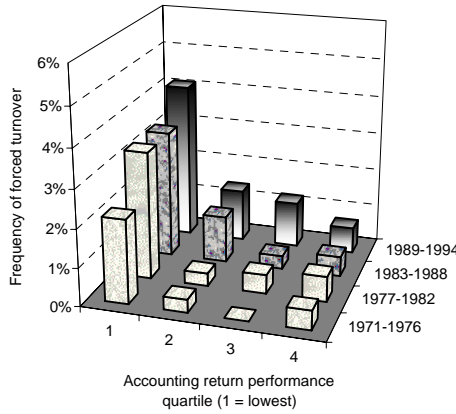
**Table II**  
**CEO Turnover, Outside Appointments, and Forced Turnover by Year**

Data is for 1,316 CEO turnovers at large public firms between 1971 and 1994. An outsider is a new CEO who has been employed at the firm for one year or less at the time of the succession. A turnover is classified as forced if the incumbent CEO departs prior to age 60 and does not leave for other employment or for health reasons or if the *Wall Street Journal* reports that the CEO was forced from the position. P-values are for two-tailed tests.

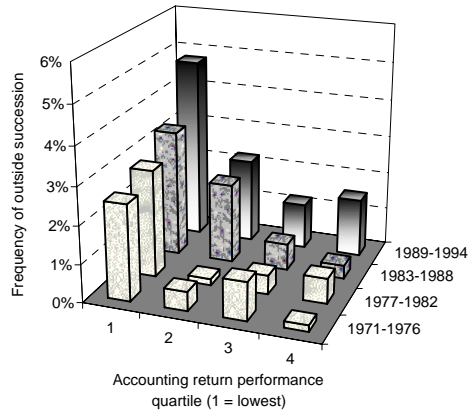
Year	Number of Successions	Number of Forced Successions (percent of total)	Number of Outsiders Appointed CEO (percent of total)	Number of Forced Successions in Which an Outsider is Appointed (percent of forced)
Panel A: Number of Observations by Year:				
1971	53	4 (7.5%)	8 (15.1%)	2 (50.0%)
1972	52	6 (11.5%)	9 (17.3%)	4 (66.7%)
1973	49	1 (2.0%)	7 (14.3%)	0 (0.0%)
1974	47	7 (14.9%)	9 (19.1%)	5 (71.4%)
1975	47	7 (14.9%)	6 (12.8%)	2 (28.6%)
1976	47	5 (10.6%)	6 (12.8%)	2 (40.0%)
1977	49	5 (10.2%)	5 (10.2%)	3 (60.0%)
1978	52	7 (13.5%)	8 (15.4%)	2 (28.6%)
1979	58	8 (13.8%)	10 (17.2%)	3 (37.5%)
1980	58	8 (13.8%)	8 (13.8%)	4 (50.0%)
1981	55	10 (18.2%)	6 (10.9%)	4 (40.0%)
1982	47	5 (10.6%)	2 (4.3%)	0 (0.0%)
1983	63	3 (4.8%)	5 (7.9%)	0 (0.0%)
1984	54	13 (24.1%)	9 (16.7%)	8 (61.5%)
1985	61	12 (19.7%)	16 (26.2%)	9 (75.0%)
1986	53	5 (9.4%)	5 (9.4%)	2 (40.0%)
1987	70	14 (20.0%)	14 (20.0%)	6 (42.9%)
1988	81	18 (22.2%)	21 (25.9%)	14 (77.8%)
1989	57	11 (19.3%)	16 (28.1%)	4 (36.4%)
1990	61	21 (34.4%)	22 (36.1%)	15 (71.4%)
1991	53	15 (28.3%)	18 (34.0%)	10 (66.7%)
1992	36	10 (27.8%)	10 (27.8%)	3 (30.0%)
1993	59	11 (18.6%)	19 (32.2%)	8 (72.7%)
1994	54	7 (13.0%)	11 (20.4%)	4 (57.1%)
	1316	213 (16.2%)	250 (19.0%)	114 (53.5%)
P-values for $\chi^2$ tests that the proportions of outside appointments and forced departures are equal in all years.		0.003	0.001	0.000
Panel B: Number of Observations by Six-Year Sub-Period:				
1971-76	295	30 (10.2%)	45 (15.3%)	15 (50.0%)
1977-82	319	43 (13.5%)	39 (12.2%)	16 (37.2%)
1983-88	382	65 (17.0%)	70 (18.3%)	39 (60.0%)
1989-94	320	75 (23.4%)	96 (30.0%)	44 (58.7%)
P-values for $\chi^2$ tests that the proportions of outside appointments and forced departures in the first two sub-periods equal the corresponding proportions in the last two sub-periods.		0.000	0.000	0.000
P-values for $\chi^2$ tests that the proportions of outside appointments and forced departures are equal in the third and fourth sub-periods.		0.058	0.000	0.174



**Figure 3.** Frequency of CEO turnover by performance quartile based on ROA (industry-adjusted EBIT/book assets) during the year preceding turnover.



**Figure 4.** Frequency of forced turnover by performance quartile based on ROA (industry-adjusted EBIT/book assets) during the year preceding turnover.



**Figure 5.** Frequency of outside succession by performance quartile based on ROA (industry-adjusted EBIT/book assets) during the year preceding turnover.

**Table III**  
**Changes in the Performance-Turnover Relation for all Turnovers**

Coefficient estimates for logit models that are estimated using data during the tenures of 946 CEOs who left that position at large public firms between 1971 and 1994 and during the tenures of 486 CEOs who were still in office as of the end of 1994. The dependent variable equals one if the CEO changes and zero otherwise. The models are estimated using only data for firm-years between 1971 and 1994, inclusive. The CEO age dummy equals one if the departing CEO is 60 years of age or older and zero otherwise. The founding family dummy equals one if the departing CEO is a member of the founding family and zero otherwise. Dum71-76, Dum77-82, and Dum89-94 are dummy variables that equal one if the data is from the 1971 to 1976, 1977 to 1982, or 1989 to 1994 period, respectively, and zero otherwise. ROA is the ratio of earnings before interest and taxes (EBIT) to beginning of period book assets less the median value of that ratio for all firms in the same two-digit Standard Industrial Classification (SIC) industry. Stock returns, RET, are industry-adjusted by subtracting the median returns for all firms in the same two-digit SIC industry during the appropriate 24-month period. P-values for two-tailed tests that the coefficient estimates equal zero are in parentheses.

	Model 1	Model 2	Model 3
Intercept	-3.5648 (0.000)	-3.7180 (0.000)	-3.6486 (0.000)
CEO age dummy	1.6048 (0.000)	1.6064 (0.000)	1.5977 (0.000)
Founding family dummy	-0.9817 (0.000)	-1.0088 (0.000)	-0.9706 (0.000)
Dum71-76: Dummy = 1 if observation is for a year between 1971 and 1976	0.0102 (0.927)	0.0520 (0.633)	0.0253 (0.823)
Dum77-82: Dummy = 1 if observation is for a year between 1977 and 1982	-0.1826 (0.078)	-0.1697 (0.094)	-0.2235 (0.030)
Dum89-94: Dummy = 1 if observation is for a year between 1989 and 1994	-0.0993 (0.339)	-0.1105 (0.271)	-0.0712 (0.502)
Natural log of sales	0.1077 (0.000)	0.1197 (0.000)	0.1188 (0.000)
ROA: EBIT/assets in previous year	-3.2796 (0.000)		
ROA*Dum71-76	2.1573 (0.098)		
ROA*Dum77-82	1.5232 (0.250)		
ROA*Dum89-94	1.7270 (0.144)		
Change in ROA during previous year		-0.5372 (0.634)	
Change in ROA*Dum71-76		-0.6860 (0.734)	
Change in ROA*Dum77-82		-1.3408 (0.485)	
Change in ROA*Dum89-94		-2.4787 (0.135)	
RET: Stock return during 24 months preceding announcement			-0.4167 (0.013)
RET*Dum71-76			0.1897 (0.448)
RET*Dum77-82			0.1676 (0.521)
RET*Dum89-94			0.0094 (0.968)
Number of turnovers	946	946	946
Number of firm-years	8424	8424	8424
Model $\chi^2$	647.32	632.33	640.94

**Table IV**  
**Changes in the Performance-Turnover Relation for Voluntary and Forced Turnover**

Coefficient estimates for multinomial logit models that are estimated using data during the tenures of 946 CEOs who left that position at large public firms between 1971 and 1994 and during the tenures of 486 CEOs who were still in office as of the end of 1994. All models have three outcomes: no turnover, voluntary turnover, and forced turnover. The models are estimated using only data for firm-years between 1971 and 1994, inclusive. Turnover is classified as forced if the incumbent CEO departs prior to age 60 and does not leave for other employment or for health reasons or if *The Wall Street Journal* reports that the CEO was forced from the position. All other turnovers are classified as voluntary. The CEO age dummy equals one if the departing CEO is 60 years of age or older and zero otherwise. The founding family dummy equals one if the departing CEO is a member of the founding family and zero otherwise. Dum71-76, Dum77-82, and Dum89-94 are dummy variables that equal one if the data is from the 1971 to 1976, 1977 to 1982, or 1989 to 1994 period, respectively, and zero otherwise. ROA is the ratio of earnings before interest and taxes (EBIT) to beginning of period book assets less the median value of that ratio for all firms in the same two-digit Standard Industrial Classification (SIC) industry. Stock returns, RET, are industry-adjusted by subtracting the median returns for all firms in the same two-digit SIC industry during the appropriate 24-month period. P-values for two-tailed tests that the coefficient estimates equal zero are in parentheses.

	Model 1		Model 2		Model 3	
	Turnover Outcome		Turnover Outcome		Turnover Outcome	
	Voluntary	Forced	Voluntary	Forced	Voluntary	Forced
Intercept	-3.9473 (0.000)	-5.1930 (0.000)	-3.9996 (0.000)	-5.9300 (0.000)	-3.9629 (0.000)	-5.5200 (0.000)
CEO age dummy	1.9754 (0.000)	-0.4745 (0.031)	1.9776 (0.000)	-0.4990 (0.021)	1.9731 (0.000)	-0.4866 (0.024)
Founding family dummy	-0.8687 (0.000)	-2.4441 (0.001)	-0.8747 (0.000)	-2.7466 (0.000)	-0.8581 (0.000)	-2.5070 (0.000)
Dum71-76: Dummy = 1 if observation is for a year between 1971 and 1976	0.0507 (0.669)	-0.4132 (0.234)	0.0871 (0.448)	-0.2136 (0.524)	0.0554 (0.644)	-0.4263 (0.229)
Dum77-82: Dummy = 1 if observation is for a year between 1977 and 1982	-0.2386 (0.033)	-0.4315 (0.187)	-0.1690 (0.114)	-0.2171 (0.475)	-0.2124 (0.051)	-0.6764 (0.058)
Dum89-94: Dummy = 1 if observation is for a year between 1989 and 1994	-0.1811 (0.108)	0.1237 (0.650)	-0.1392 (0.191)	-0.0503 (0.858)	-0.1355 (0.237)	0.1806 (0.491)
Natural log of sales	0.1008 (0.002)	0.1832 (0.031)	0.1013 (0.002)	0.2659 (0.001)	0.1024 (0.001)	0.2341 (0.005)
ROA: EBIT/assets in previous year	-2.4289 (0.008)	-8.1820 (0.000)				
ROA*Dum71-76	2.0332 (0.129)	-5.9564 (0.141)				
ROA*Dum77-82	3.1359 (0.021)	-9.1849 (0.003)				
ROA*Dum89-94	2.2897 (0.061)	-1.8372 (0.493)				
Change in ROA during previous year			0.4032 (0.740)	-5.7896 (0.011)		
Change in ROA*Dum71-76			-0.7234 (0.736)	-1.7272 (0.687)		
Change in ROA*Dum77-82			-0.0775 (0.970)	-6.5400 (0.066)		
Change in ROA*Dum89-94			-1.1326 (0.536)	-4.9819 (0.100)		
RET: Stock return during 24 months preceding announcement					-0.2932 (0.089)	-1.6996 (0.003)
RET*Dum71-76					0.2246 (0.376)	-1.4274 (0.189)
RET*Dum77-82					0.2973 (0.257)	-1.4900 (0.132)
RET*Dum89-94					0.0877 (0.711)	-0.2640 (0.738)
Number of turnovers	840	106	840	106	840	106
Number of firm-years	8424		8424		8424	
Model $\chi^2$	875.41		807.29		828.80	

**Table V****Implied Probabilities of Forced Turnover Across Performance Quartiles by Sample Sub-Period**

Implied probabilities are estimated using the models in Table IV. Median performance levels within the indicated performance quartiles and median values for non-performance variables are used to estimate the implied probabilities.

Panel A: Performance Quartiles Based on Industry-Adjusted EBIT/Assets					
	Median	Implied Probabilities			
	Performance Level	1971-76	1977-82	1983-88	1989-94
Quartile 1	-3.65%	2.30%	2.54%	2.68%	3.35%
Quartile 2	0.07%	1.37%	1.35%	2.07%	2.33%
Quartile 3	3.65%	0.83%	0.73%	1.55%	1.64%
Quartile 4	12.05%	0.26%	0.17%	0.79%	0.71%
Quartile 1 to Quartile 4		2.05%	2.37%	1.90%	2.64%

Panel B: Performance Quartiles Based on Change in Industry-Adjusted EBIT/Assets					
	Median	Implied Probabilities			
	Performance Level	1971-76	1977-82	1983-88	1989-94
Quartile 1	-4.36%	1.92%	2.31%	2.66%	3.71%
Quartile 2	-0.77%	1.47%	1.50%	2.18%	2.55%
Quartile 3	0.75%	1.31%	1.24%	2.00%	2.17%
Quartile 4	4.07%	1.03%	0.83%	1.65%	1.53%
Quartile 1 to Quartile 4		0.89%	1.48%	1.01%	2.18%

Panel C: Performance Quartiles Based on Industry-Adjusted Stock Returns					
	Median	Implied Probabilities			
	Performance Level	1971-76	1977-82	1983-88	1989-94
Quartile 1	-39.75%	4.65%	4.68%	4.01%	4.99%
Quartile 2	-2.98%	1.52%	1.50%	2.19%	2.49%
Quartile 3	18.59%	0.78%	0.76%	1.53%	1.64%
Quartile 4	65.00%	0.18%	0.17%	0.70%	0.67%
Quartile 1 to Quartile 4		4.47%	4.51%	3.31%	4.32%

**Table VI**  
**Governance Variables as Predictors of Forced Turnover and Outside Succession**

The coefficient estimates are for data during the tenures of 946 CEOs who left that position at large public firms between 1971 and 1994 and during the tenures of 486 CEOs who were still in office as of the end of 1994. The dependent variables for the forced turnover models equal one if the CEO is forced from office and zero otherwise. Turnover is classified as forced if the incumbent CEO departs prior to age 60 and does not leave for other employment or for health reasons or if *The Wall Street Journal* reports that the CEO was forced from the position. All other turnovers are classified as voluntary. The dependent variables for the outside succession models equal one if the new CEO has been employed at the firm for one year or less at the time of the succession and zero otherwise. The percentage of independent outside directors, OUTDIR, excludes outside directors who may have a business relationship with the firm. ROA is the ratio of earnings before interest and taxes (EBIT) to beginning of period book assets less the median value of that ratio for all firms in the same two-digit Standard Industrial Classification (SIC) industry. Stock returns, RET, are industry-adjusted by subtracting the median returns for all firms in the same two-digit SIC industry during the appropriate 24-month period. The coefficients are estimated using bivariate probit models. The reported coefficient estimates are for regressions that are jointly estimated with turnover regressions in which the dependent variable equals one if there is turnover and zero otherwise. The turnover relation in all models is

$$P(\text{turnover}) = \beta_0 + \beta_1 \times \text{CEO age dum} + \beta_2 \times \text{Founding family dum} + \beta_3 \times \text{ROA} + \beta_4 \times \text{Chg. in ROA} + \beta_5 \times \text{RET} + \beta_6 \times \ln(\text{sales})$$

where CEO age dum is a dummy variable that equals one if the departing CEO is 60 years of age or older and founding family dum is a dummy variable that equals one if the departing CEO is a member of the founding family. P-values for two-tailed tests that the coefficient estimates equal zero are in parentheses.

	Turnover Outcome Model			
	Voluntary/Forced Turnover		Inside/Outside Succession	
	Model 1	Model 2	Model 3	Model 4
Intercept	-2.4659 (0.000)	-4.0780 (0.000)	-2.8302 (0.000)	-2.8938 (0.000)
Dum71-76: Dummy = 1 if observation is for a year between 1971 and 1976		0.0449 (0.681)		-0.0277 (0.838)
Dum77-82: Dummy = 1 if observation is for a year between 1977 and 1982	0.0280 (0.865)	0.0388 (0.702)	0.0233 (0.883)	-0.0252 (0.837)
Dum89-94: Dummy = 1 if observation is for a year between 1989 and 1994	0.2163 (0.055)	0.0214 (0.802)	0.2642 (0.023)	0.3273 (0.004)
OUTDIR: Percentage of independent outside directors	0.4208 (0.232)		1.2875 (0.000)	
NEDIR: Percentage of non-employee directors		0.8098 (0.003)		1.4463 (0.000)
TOTDIR: Total number of directors	-0.0023 (0.898)	0.0022 (0.173)	-0.0137 (0.485)	-0.0150 (0.232)
CEOSH: Percentage of firm's shares held by the CEO	-22.7207 (0.020)		-9.5849 (0.121)	
ODSH: Percentage of firm's shares held by non-CEO officers and directors	1.3126 (0.007)		1.8380 (0.009)	
INSTSH: Percentage of firm's shares held by institutional investors	0.0371 (0.906)		0.4599 (0.142)	
ROA: EBIT/assets in previous year	-1.9726 (0.002)	-2.6609 (0.000)	-2.0394 (0.000)	-2.7677 (0.000)
Change in ROA during previous year	-0.6311 (0.480)	-1.2066 (0.034)	-0.1658 (0.819)	-0.4207 (0.403)
RET: Stock return during 24 months preceding announcement	-0.3747 (0.006)	-0.2914 (0.000)	-0.3136 (0.006)	-0.1257 (0.174)
Natural log of sales		0.1587 (0.000)		0.0012 (0.977)
N (successions)	574	979	574	979
N (forced turnovers)	68	115		
N (outside successions)			91	144
N (firm years)	5752	8709	5752	8709
Sample period/sub-period	1980-94	1971-94	1980-94	1971-94
Log-likelihood	-1843.0	-3000.1	-1909.9	-3098.3

**Table VII**  
**Stock Price Reactions to CEO Turnover Announcements**

Two day cumulative abnormal returns (CARs) estimated for days zero and one relative to the turnover announcement. The abnormal returns are reported for the 854 announcements, from a total sample of 1,316, for which there are no confounding announcements in *The Wall Street Journal* between days -2 and 2, relative to the initial turnover announcement in *The Wall Street Journal*. Turnover is classified as forced if the incumbent CEO departs prior to age 60 and does not leave for other employment or for health reasons or if *The Wall Street Journal* reports that the CEO was forced from the position. All other turnovers are classified as voluntary. An outsider is a new CEO who has been employed at the firm for one year or less at the time of the succession. Abnormal returns are calculated using a market model that is estimated from data from days -300 to -50 relative to the turnover announcement. The CRSP equally-weighted return index is used as a proxy for the market portfolio. P-values for two-tailed tests that the mean abnormal returns equal zero are reported in parentheses.

	Sub-Period					P-Values for 1) test that mean CARs are equal, and 2) for $\chi^2$ test (in brackets) that the CAR distributions are equal in the first two sub-periods and the last two sub-periods.	P-Values for 1) test that mean CARs are equal, and 2) for $\chi^2$ test (in brackets) that the CAR distributions are equal in the third and fourth sub-periods.
	1971-94	1971-76	1977-82	1983-88	1989-94		
All turnovers:							
CAR	0.50%	0.41%	-0.03%	0.58%	0.94%	0.032	0.677
P-value	(0.000)	(0.027)	(0.551)	(0.004)	(0.001)		
Number of observations	854	174	203	248	229	[0.015]	[0.006]
Percent positive	51.17%	58.05%	43.84%	50.00%	54.59%		
Forced turnover:							
CAR	2.02%	1.12%	0.18%	1.75%	4.00%	0.000	0.051
P-value	(0.000)	(0.507)	(0.321)	(0.003)	(0.000)		
Number of observations	127	14	30	43	40	[0.363]	[0.001]
Percent positive	55.12%	57.14%	50.00%	53.49%	60.00%		
Outside succession:							
CAR	2.49%	1.91%	1.85%	1.55%	3.66%	0.937	0.009
P-value	(0.000)	(0.002)	(0.001)	(0.018)	(0.000)		
Number of observations	164	26	26	47	65	[0.121]	[0.178]
Percent positive	58.54%	65.38%	57.69%	55.32%	58.46%		
Forced/outside succession:							
CAR	4.13%	2.04%	3.06%	2.58%	6.91%	0.262	0.003
P-value	(0.000)	(0.329)	(0.002)	(0.001)	(0.000)		
Number of observations	71	7	12	27	25	[0.482]	[0.005]
Percent positive	64.79%	71.43%	58.33%	59.26%	72.00%		