



CAEPR Working Paper
#2007-007

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May 22, 2007

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**What's happened over the past 10 years to
the selection of retired CEOs as board
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JEL Codes: G34, G38, L10, L51

Keywords: Corporate governance, Board of director, Deregulation

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18th May 2007

Abstract

I analyze directorships held by CEOs who retired during 1989-1993 and during 1998-2002. My results suggest that retired CEOs became more popular on boards. Also, although pre-retirement accounting performance helps explain the number of outside directorships a retired CEO held in the 1989-1993 sample as Brickley, Linck and Coles (1999) found, it does not in the 1998-2002 sample. Third, a company's stock performance during a CEO's tenure affects whether he became an inside director of that company after retirement. A 25% change in stock price performance increased the probability by 11% in the 1989-1993 sample, and 51% in the 1998-2002 sample. Finally, if a retired CEO worked in a regulated industry, his probability of serving at least one outside directorship fell by 34% in the 1989-1993 sample, and 24% in the 1998-2002 sample.

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1 Introduction

Holmstrom and Kaplan (2003) and Holmstrom (2005) point out that the enormous increase in equity-based payment and shareholder activism are two notable changes in U.S. corporate governance over the past 20 years. Linck, Netter and Yang (2006a) show that the structure of boards has changed, too. This trend is in response to both internal and external environment which include globalization, shareholder activism, and corporate scandals. The size of boards declined from the early 1990s to the late 1990s but this trend shows a break after the Sarbanes-Oxley Act passed. The proportion of outside directors on boards increased over the last 15 years.

The goal of this paper is to study what has happened over time to the selection of retired CEOs as board members. For that purpose, I revisit Brickley, Linck and Coles (1999). They identify 277 retired CEOs from U.S firms during 1989-1993 and analyze the directorships they serve after retirement¹. First of all, I construct a more recent sample following their method to look at what changed. I compare the two samples, as well.

I find that retired CEOs became more popular on boards. The percentage of retired CEOs who hold at least one board directorship (inside or outside) 2 years after retirement in the full sample increased from 75.1% in 1989-1993 to 94.4% in 1998-2002. The cause is the increase in the number of outside directorships to be filled. The average number of directorships retired CEOs hold has also increased significantly from 1.8 to 2.53, which implies that the total number of retired CEOs on boards has risen²³.

The second finding is that pre-retirement accounting performance explains the num-

¹The main contributions of Brickley, Linck and Coles (1999) are that (1) they provide evidence on a previously unidentified source of managerial incentives (2) they suggest that firms consider ability in choosing board members. The quality of CEO has positive effects on the probability of serving directorships after retirement. They also explore other factors (firm size, regulation and so on) to have effects on the selection of board members.

²It is hard to discuss the change in the proportion of retired CEOs on boards. Lehn, Patro and Zhao (2004) show evidence that mean board size has declined in 1990s. Mulherin (2005) also shows that the average number of directors has a downward trend. Linck, Netter and Yang (2006a), however, provide different evidence for the size of board. They show that there is a general decline in board size from the early 1990s to the late 1990s, but it begins to rise at 2002, especially in large firms. Their data confirms that the average size of board during 2000-2004 is smaller than that during 1991-1995 in large firms, which is exactly overlapped with my time frame. However, if we also take into account middle- and small-sized firms, we cannot conclude that the current board size is smaller than that during 1989-1993.

³In a slightly different angle, Ferris, Jagannathan and Pritchard (2003) provide evidence that the mean number of directorships held by outside directors (current CEO, retired CEO, lawyer, professor and so on) is 1.89 based on 1995 board data sets. The average number of directorships (inside or outside) retired CEOs who have at least one outside directorship hold is 3.03 during 1998-2002, compared to 2.8 during 1989-1993. We can conjecture that retired CEOs tend to have more directorships than mean level of directorships held by outside directors.

ber of outside directorships CEOs hold two years after retirement in the 1989-1993 sample well. In contrast, it has no explanatory power in the 1998-2002 sample. A 5.6% increase in accounting performance produces a 7% increase in the probability of holding at least one outside directorship after retirement in the 1989-1993 sample. It is, however, not significantly correlated with the number of outside directorships in the 1998-2002 sample.

Third, the stock price performance (abnormal stock return) of his company while he was a CEO affects whether an ex-CEO becomes a chairman or insider director on his own board after he retires, especially in the 1998-2002 sample. If the stock price performance increases by 25%, the probability that CEO will serve as a chairman or inside director during 1998-2002 goes up by 51%, compared to 11.4% during 1989-1993. This finding is consistent with Holmstrom and Kaplan (2003). They point out that "CEO pay to market-performance sensitivity" has risen more than tenfold from 1980-1999 due to the increase in equity-based compensation. Since the retention of CEOs on their own boards is an implicit incentive to mitigate horizon problems, this trend (the increase in "pay to market performance" sensitivity) could show up here.

Finally, both samples share the common feature that if retired CEOs' original firms are regulated (utility, depository institution and insurance), the probability of their serving as outside directors decreases, though this negative effect has been declining over time. If retired CEOs worked in regulated industries, their probability of serving at least one outside directorship 2 years after retirement falls by 34.1% in the 1989-1993 sample, compared to 24% in the 1998-2002 sample. Moreover, retired CEOs from regulated sectors have significantly more directorships during 1998-2002 time period than those in the 1989-1993 sample. For instance, retired CEOs from regulated sectors hold 1.89 outside directorships during 1998-2002, compared to 0.73 during 1989-1993. Brickley, Linck and Coles (1999) argue that the reason why retirees from regulated sectors tend to have less outside directorships is that regulated sectors are less visible or the retirees accumulate human capital which is less related to competitive markets. Following this logic, the deregulation of regulated sectors might explain the increasing directorships for CEOs from regulated industries⁴. Many studies compare the governance structure before

⁴The regulated sectors, especially the utilities, financial, and insurance sectors, have experienced a deregulation process which was designed toward more competitive markets. In the utility sector, the Energy Policy Act of 1992 was passed on October 1992 to delegate the power to increase competition in the transmission and generation of electricity. Two major FERC ruling took place in 1993 and 1996.

and after the deregulation process. Crawford, Ezzell and Miles (1995) show a significant increase in pay-performance sensitivities from a sample of the regulated period to a sample of the deregulated period in U.S. bank industries. Palia (2000) studies the initial entry of CEOs into the market and finds that lowerly educated CEOs are slotted into utility (regulated) sectors, while airlines have highly qualified CEOs after deregulations. Cunat and Guadalupe (2003) find that the total pay of executives increases according to a degree of product market competition by exploring the deregulation stories in bank and financial sectors. Definitely, we can hypothesize that we continue to experience the effect of deregulation because currently, the market would be more likely to recognize retired CEOs from regulated industries as more talented candidates for board members than CEOs who worked in regulated industries before deregulations.

As for the first finding, there are four potential explanations why retired CEOs became more common on boards. First, the total size of outside directors might have been increased. Second, firms begin to strongly prefer retired CEOs as independent board members because retired CEOs have enough skills and experience to advise executives. Holmstrom (2005) describes the reason why current CEOs and retired CEOs serve other firms' board. They are more knowledgeable to understand the firm's strategy and information. In this sense, more uncertain managerial environments due to the globalization and mergers could increase the demand for retired CEOs as directors to invite better advice for the management. The organizational complexity of firms due to globalization (diversification) and mergers over the past twenty years could make retired CEOs more attractive as board members because they may have greater knowledge about the management, organization of firms, or about the global managerial environment, making them optimal choices for better monitoring. Third, shareholder activism mainly criticizes multiple directorships of directors with full time jobs (current CEO, lawyer, professor and so on), making it hard to hire qualified directors with full time jobs, which implies that retired CEOs without full time jobs become more popular in the market for outside directors. Finally, since the amount of work assigned to board members might have been increased, other candidates for outside directors with full time jobs have less

In financial sectors, the 1994 Riegle-Neal Interstate Banking and Branching Efficiency Act allows all commercial banks to operate branches across states, and the Gramm-Leach-Bliley Act (GLBA, 1999) eliminates barriers among banking, insurance, and securities underwriting.

time to devote as a board member. It could be the case that Institutional Investors actively communicate with executives and board members to put a great deal of pressure on boards. Alternatively, increased work burden could come from corporate scandals. Holmstrom and Kaplan (2003) suggest that the Sarbanes-Oxley Act increases the responsibility of managers and board members. Subsequently, it increases the workload and risk of boards. Linck, Netter and Yang (2006b) find evidence that after the Sarbanes-Oxley Act, firms pay more directors fees, which is consistent with the theory that the Sarbanes-Oxley Act places large burdens on boards. My data sets cover retired CEOs during 1998-2002, and I focus on the number of directorships 2 years after retirement, so my time frame partially overlaps with the post-Sarbanes-Oxley Act (2002).

2 Sample design and comparison

2.1 Sample selection

I identify retired CEOs by reviewing the S&P Compustat. I download a CEO list of approximately the 500 largest firms in the U.S in terms of sales, assets and market value on 1997 year base. Then I sort CEOs who left CEO positions during 1998-2002. Through this process we identify CEOs who potentially retired. I eliminate CEO departures that occur (1) around bankruptcies, going-private transactions, and other reasons where public information is not available, and (2) due to death. I thus identify 250 CEOs who left the office during 1998-2002. For comparison, I briefly describe the sample selection in Brickley, Linck and Coles (1999) (hereafter, "the old data set or "the 1989-1993 sample"). They identify retired CEOs by reviewing the Forbes annual executive compensation surveys, which contain approximately 800 CEOs with the 500 largest U.S companies. Through this process, they identify 315 CEOs who potentially retired. They also eliminate CEO departure following criteria (1) and (2) above. Finally, they have 277 CEOs who left office during 1989-1993.

Table 1 shows the distribution by industry, as classified by Standard Industrial Classification (*SIC*) codes from the Compustat data base. The number of observations (N) represents the number of firms at which CEOs worked before retirement in each industry.

The distribution of Brickley, Linck and Coles (1999)'s data set⁵ (the 1989-1993 sample) is in parenthesis.⁶ My data set (hereafter, "the current data set" or "the 1998-2002 sample") contains many more service industries (*SIC code 73*) and many fewer utilities (*SIC code 49*), depository institutions (*SIC code 60*) than Brickley, Linck and Coles (1999)'s data (the 1989-1993 sample).

2.2 Performance and other data

I collect the accounting information from the S&P Compustat and stock returns from the Center for Research in Security Prices (CRSP). I define pre-retirement performance as the CEO's total tenure or his last four years in office, whichever is less. Brickley, Linck and Coles (1999) acquire accounting and stock information by similar methods. The primary reason to stress the most recent four-year performance period is to compare my outcome to that of Brickley, Linck and Coles (1999). I use return on asset (ROA), industry-adjusted ROA, and abnormal stock returns as measures of performance. Industry-adjusted ROA is the average annual return on assets, net of the median return⁷ on assets for all firms in the industry including sample firms⁸. The abnormal stock return is the compound average annual stock return minus the CRSP value-weighted index.

Table 2 provides descriptive statistics of CEO and characteristics for the firm at which the CEO worked before retirement. Following Brickley, Linck and Coles (1999), I divide the 1998-2002 sample into two sub-samples. The first sub-sample ($Age \geq 60$) includes CEOs who retired at the age of 60 and older. The second sub-sample ($64 \leq Age \leq 66$) covers CEOs who left their position between aged 64 and 66. Both sub-samples are classified as normal retirement age. A difference-in-mean test shows that only in the 1989-1993 sample, is ROA significantly higher for the normal retirement age group.

The descriptive statistics by tenure as a CEO are reported in *Table 3*. While 82 CEOs (29.6% in the full sample) have tenure of less than 5 years during 1989-1993, only

⁵James Linck provides Brickley, Linck and Coles (1999)'s full dataset, so that I can show descriptive statistics and estimates not present in Brickley, Linck and Coles (1999) using their original data set.

⁶Brickley, Linck and Coles (1999) obtains SIC codes from the Center for Research in Security Prices (CRSP) tapes. Since there are differences between SIC codes on Compustat and CRSP I re-classify Brickley, Linck and Coles (1999)'s data set based on SIC codes of Compustat for the consistency between two samples.

⁷While Brickley, Linck and Coles (1999) compute the median industry return based on 2-digit CRSP SIC code, I did it based on 2-digit SIC code from Compustat.

⁸When Brickley, Linck and Coles (1999) compute the median return they exclude the sample firm.

32 CEOs (13.01%) stay in office less than 5 years in the 1998-2002 sample. The old data set contains 103 CEOs (37.18%) who work at least 10 years, compared to 127 CEOs (51.63%) in the current data set⁹. In other words, more than half of retired CEOs have at least 10 years tenure¹⁰ in the 1998-2002 sample.¹¹

2.3 Directorship data

While Brickley, Linck and Coles (1999) gather information from the Compact Disclosure (D/SEC) CD-Rom per year from 1990-1996 and Standard and Poor's register of directors and executive directors to identify the number of post-retirement director positions held by retired CEOs, I use the Securities and Exchange Commission (SEC) filings and Forbes website. To determine positions, I search each firm's proxy statement (filing form: DEF 14A). Based on the proxy statement, I calculate board positions held in *+2 years*, where *+2 years* represents the second year after CEOs retire.

Table 4-A shows that the percentage of CEOs who serve at least one board directorship 2 years after retirement in the full sample has increased from 75.1% in 1989-1993 to 94.4% in 1998-2002 (See *Total +2 years > 0* in *Table 4-A*). Also, the percentage of CEOs who serve at least one outside directorship in the full sample has increased from 58.1% to 78% (See *Outside + 2 years > 0* in *Table 4-A*). As *Table 4-B* shows, the average number of directorships retired CEOs hold has increased significantly (*Total + 2 years, from 1.8 to 2.52 directorships*), which is mostly driven by the increase in the number of outside directorships (*Outside + 2 years, from 1.3 to 2.08*).

3 The selection of outside directors

Brickley, Linck and Coles (1999) show that the accounting performance (ROA and industry-adjusted ROA) has an economically significant effect on the number of out-

⁹One might conjecture that the takeover boom of the 1980s could explain the shorter tenure of retired CEOs during 1989-1993. Holmstrom and Kaplan (2001), however, show that the takeover activity in the late 1990s is very high.

¹⁰Hudson and Starks (2001) present evidence on CEO turnover decisions from 1971 to 1994 and show that the incidence of forced turnover is the highest during 1989-1994. However, there is no data as to whether this increased turnover continued or not. In addition, the distribution of retired CEOs' age is very similar between the two time frames, so it is hard to say that the shorter tenure during 1989-1993 could be due to frequent forced turnovers.

¹¹This finding is not consistent with the prediction of Hermalin (2005). He predicts that CEOs' tenure would be shorter due to the current trend in corporate governance, a greater board diligence.

side board seats in 1989-1993.¹² My result contradicts this finding for 1998-2002. *Table 5* provides the estimate of ordered logit models. The dependent variable takes on the value 0,1,2,3,4 which means the number of outside directorships CEOs hold two years after retirement. If an executive has more than 4 directorships, the value 4 is assigned. The explanatory variables are the performance over the four years before retirement, the natural logarithm of total assets, and a regulation dummy which equals one if the firm is a utility, depository institution or insurance company¹³. The outcome of the 1989-1993 sample is in parenthesis. In this setup, there is no difference between Brickley, Linck and Coles (1999) and my regression except for the time period. The estimated coefficients on *Return on asset*¹⁴ and *Industry adjusted ROA* are insignificant and on *Abnormal stock return* is significantly negative in the 1998-2002 sample. This implies that accounting performance¹⁵ does not have an effect on the number of outside board seats, and stock price performance (*abnormal stock return*) has a negative effect. Firm size (*LnAsset*) and the regulation dummy (*Regulated dummy*) have similar effects in both samples. The number of outside directorships is highly correlated with the size of the firm at which the CEO had worked before retirement. The number of outside directorships decreases when the CEO's original firm is regulated. Brickley, Linck and Coles (1999) conjecture that regulated firms are less visible than unregulated firms, or that the CEO in the typical regulated company has human capital less related to competitive markets.

¹²Brickley, Linck and Coles (1999)'s potential explanation for the strong relationship between the accounting returns and the number of outside directorships is for the following: "there are at least two reasons why a superior CEO's ability might be reflected in superior accounting returns. First, if the CEO's skills are specific to the firm, the firm might share in the difference between CEO's value to the firm and his second highest-valued use. Second, accounting numbers do not reflect all a firm's compensation cost....Therefore, if firms want CEOs with known high ability as outside directors, the likelihood of being asked to serve on another firm's board is more likely to be correlated with ROA over the final four years than with abnormal stock returns." (Brickley, Linck and Coles (1999), page 371)

¹³As I mentioned before, while I obtain SIC codes in 1998-2002 samples from Compustat, Brickley, Linck and Coles (1999) use in 1989-1993 samples from CRSP. To make the category of regulated sectors be consistent between two data sets I classify utility, depository institution, and insurance firms on both samples as regulated firms and this classification is based on SIC code of Compustat. SIC codes are 49 (utility), 60 (depository institution), and 63 (insurance). Brickley, Linck and Coles (1999) classify utility (SIC code 49 on CRSP), bank (SIC code 6023, 6025 on CRSP), and insurance (SIC code 63 on CRSP) as regulated sectors in their paper.

¹⁴*Table 6* presents that the estimated coefficient on *Return on asset* in the 1989-1993 sample is significantly positive. I run the regression excluding the retired CEOs who hold 4 or more outside directorships in the 1989-1993 sample. It shows that the coefficient on *Return on asset* is not significant, which implies that the effect of pre-retirement accounting performance is mostly driven by retired CEOs who hold 4 or more outside directorships. The number of retired CEOs who hold 4 or more is 27 out of 277 retired CEOs in the 1989-1993 sample.

¹⁵I also utilize Return on Equity (ROE) as an explanatory variable. ROE does not have any explanatory power for the number of outside directorships, either.

Next, I compare the size of the effect. A 5.6% increase in return on assets (the standard deviation), taking all other variables at their means, produces a 7% increase in the probability of holding at least one outside directorship after retirement in the 1989-1993 sample. There, however, does not exist a significant correlation between the two variables in the 1998-2002 sample. If the log of assets increases by 1.28 (its standard deviation), the probability that a CEO will serve one or more outside directorships during 1989-1993 increases by 18.82%, compared to 11.6% during 1989-1993. However, if the log of assets goes up by the same amount, the probability that a CEO will serve three or more outside directorships during 1989-1993 rises by 10.75%, compared to 17.28% during 1998-2002. Finally, consider the regulation dummy. Working in regulated industries decreases their probability of serving at least one outside directorship by 34% in the 1989-1993 sample, compared to 34% in the 1998-2002 sample.

3.1 The deregulation effect

I start by reconsidering regulated sector-specific effects. *Table 6* provides evidence on the mean difference in total number of outside directorships retired CEOs hold 2 years after retirement, pre-retire performance, assets and CEO tenure between regulated and non regulated sectors in both the 1989-1993 sample and the 1998-2002 sample. The difference-in-mean test and the Wilcoxon rank-sum test suggest that the mean difference in the number of outside directorship between regulated and non-regulated sectors is significant only in the 1989-1993 sample, but the mean difference in *Return on asset* between regulated sectors and non-regulated sectors is significant in both samples¹⁶¹⁷.

Here, we can find an another noticeable change between the two time periods. The number of outside directorships of CEOs who worked in regulated industries has increased significantly (See *Total Outside +2 years* in *Table 7-A*)¹⁸. Retired CEOs from regulated

¹⁶The mean difference in ROA between regulated sectors and non-regulated sectors is mostly driven by the difference between depository institution and complements. The reason why depository institutions have lower ROA is that loans of bank are classified as an asset, so that depository institutions tend to have the larger firm size (total value of assets) than non-depository institutions.

¹⁷There does not exist a significant mean difference in the total number of outside directorships between *depository institution (insurance)* and *non-depository institution (non insurance)* in the 1998-2002 sample. During 1989-1993, CEOs who retired from *depository institution and insurance industry* have significantly lower outside directorships than those of complements, which is not consistent with the 1998-2002 sample

¹⁸As I mentioned before, the average number of outside directorships retired CEOs hold has increased significantly over time. This significant increase is mainly driven by regulated sectors.

sectors hold 1.89 outside directorships in the 1998-2002 sample, compared to 0.73 in the 1989-1993 sample. It can be easily seen that an increase in the number of outside directorships is evenly due to an increase in "*Utility*" (*Outside +2 years, from 0.89 to 2.2*), "*depository institution*" (*Outside +2 years, from 0.66 to 1.71*) and "*insurance industry*" (*Outside +2 years, from 0.63 to 1.93*). To provide more evidence, I test the mean difference in *financial sectors* between the two time periods. Both the difference-in-mean test and the Wilcoxon rank-sum test confirm a deregulation effect (See *Outside +2 years* in *Table 7-B*).

Table 8 presents the ordered logit model which includes the industry dummy¹⁹. If retired CEOs worked as CEOs in the utility industry their probability of holding at least one outside directorship decreases by 21% in the 1989-1993 sample. However, I cannot find such a regulation effect in utility sectors during 1998-2002. The insurance industry also has experienced deregulations. The working experience in the insurance industry decreases their probability of holding outside directorships by 21% in the 1998-2002 sample, which is lower than the 37.5% in the 1989-1993 sample. Working for a depository institution has a similar effect in both samples. In the 1998-2002 sample, if retired CEOs worked as a CEO in depository institutions their probability of holding outside directorships declines by 39.2%, similar to the 37.8% in the 1989-1993 sample.

4 Chairman/inside director

In this section, I explore factors which affect the probability of retired CEOs serving on their own boards 2 years after leaving office. *Table 9* presents the mean pre-retirement performance and firm size at which CEO worked before retirement by whether a CEO has a chairman/inside directorship or not. The pre-retirement performance measured by abnormal stock return is significantly better for CEOs who hold a chairman/inside directorship during both time periods. The Wilcoxon rank-sum test, however, suggests that pre-retirement return on asset averaged over CEOs who have a chairman or insider directorship is significantly higher than pre-retirement return on asset of complement

¹⁹The negative coefficient of the regulation dummy in *Table 6* is mainly originated from depository institutions and insurance sectors during both time periods. The financial industry dummy on specification (1) mainly captures the effect of depository institution and insurance. Specification (2) in *Table 9* separately shows the effect of both industries.

only during 1989-1993.

Table 10 shows the main outcome of the logit estimation. Abnormal stock return explains the probability of a CEO's serving as chairman or insider director on his own board very well, which is similar to Brickley, Linck and Coles (1999).²⁰ However, the size of the effect is much larger during 1998-2002. The length of the tenure as a CEO has a significantly positive effect during both time periods. Brickley, Linck and Coles (1999) argue that this outcome is consistent with the theory that the longer tenure is related with better performance and more CEO power. The difference in the size of the effect between two samples is interesting. If the stock price performance rises by 25% (its standard deviation), taking all other variables at their means, the probability that a CEO will serve as a chairman or inside director during 1989-1993 increases by 11.4%, compared to only 51% during 1998-2002. This finding is consistent with Holmstrom and Kaplan (2003). They point out that "CEO pay to market-performance sensitivity" has increased by more than ten fold from 1980-1999 due to the increase in equity-based compensations. Since the retention of a CEO on his own board is an implicit incentive, this trend could show up here.

5 The Cross Effect

Brickley, Linck and Coles (1999) already pointed out that there may be a "cross effect". A retired CEO who serves as outside director on other boards would be less likely to work as a chairman or inside director on his own board. To test the cross effect, let us revisit the estimation in *Table 10*. My first approach is to simply add the outside dummy to the list of explanatory variables. If a retired CEO holds at least one outside directorship 2 years after retirement, the outside dummy takes value 1. The coefficient on the outside dummy is significantly negative in the 1998-2002 sample (See the coefficient of *outside* in *Table 11*).²¹ The probability of serving as a chairman or inside director on one's own

²⁰Brickley, Linck and Coles (1999) explain why market performance during the final years is highly correlated with the probability of taking a chairmanship or inside directorship for the following: "the CEO's firm will want to provide incentives to the CEO in his last years, even though his ability is well known. One possible incentive mechanism is an implicit contract to retain the CEO on the board if stock-market performance is good in the final years. Since stock returns capture the long-run implications of a CEO's decisions, we would expect firms to weight stock returns more heavily than unexpected accounting performance in the CEO's final years." (Brickley, Linck and Coles (1999), page 371)

²¹I also test whether serving as a chairman/inside director on their own boards would have a negative

board increases by 21% given a discrete change in the outside directorship dummy in the 1989-1993 sample, compared to a 33% decrease in the 1998-2002 sample²².

There may be, however, an endogeneity problem in this specification. Whether a retired CEO takes a chairman position on his own board or not may affect the number of outside directorships held by him. For that reason, I use two-stage least square estimation to check the cross-effect. The instrument for the outside dummy is the regulation dummy. The results are reported in *Table 12*. The pre-retirement performance and firm-size (*LnAsset*) are assumed to have effects on both the probability of serving as outside directors and as a chairman after retirement. The outside directorship dummy has a significantly negative effect on the probability of serving as a chairman or inside director 2 years after retirement in the 1998-2002 sample. For instance, a 14% increase in the predicted probability of holding at least one outside director produces a 15.2% decrease in the probability of a retired CEO's serving as a chairman or inside director on his own boards 2 years after retirement.

6 Discussion for accounting performance

I find that the likelihood of serving as an outside director on the boards 2 years after retirement is not related to a CEO's performance over his last four years in office in the 1998-2002 sample, which is not consistent with the 1989-1993 sample. I used Return on asset (ROA) and industry adjusted ROA for performance variables, just as Brickley, Linck and Coles (1999) did. I have two suspects which could explain this puzzle. First, the career opportunities for the talented CEOs after retirement might have risen over time. In this case, we need to take into account other job positions after retirement to precisely measure the effect of pre-retirement performances²³. Second, firms increasingly put a more weight on the general skills rather than firm-specific skills when they select

effect on the outside directorships or not. Similarly, I add the chairman/insider dummy to the estimations in *Table 5*. The negative relationship exists only in the 1998-2002 sample. However, the two-stage least square estimation in *Table 12* shows that serving as a chairman/inside director does not have an effect on the probability of holding outside directorships in the 1998-2002 sample.

²²This is based on specification (2) in *Table 11*.

²³We can easily observe that many CEOs have several job positions after retirement except outside directorships (community board, government organization, officer in private firms, consultant and so on). Also, Ferris, Jagannathan and Pritchard (2003) show that 56% of outside directors declined an offer to serve on boards, with a lack of time as their reason for refusal. However, there is no clue that a time trend in the career opportunities exists.

board members. One of Brickley, Linck and Coles (1999)'s potential explanations for the strong relationship between the accounting returns and the number of outside directorship is that the accounting performance might reflect talented CEO's ability under the condition that the CEO's skills are specific to the firm because the firm could share the difference between CEO's value to the firm and his next highest-value. In this sense, if the firm increasingly requires the general skills to outside board members, the accounting performances might be less important in the selection of outside directors.

7 Conclusion

In this paper, I study what has happened to the choice of retired CEOs as board members over time. For that purpose, I analyze directorships held in the two years after retirement by 277 CEOs who left offices during 1989-1993 and 250 CEOs during 1998-2002. First, retired CEOs became more common on boards. Second, the pre-retirement accounting performance is highly correlated with the number of outside directorships in the 1989-1993 sample. In contrast, this relationship vanishes in the 1998-2002 sample. Third, a stock price performance (abnormal stock return) explains the probability of CEOs' serving as chairmen or insider directors on their own boards in both time periods, but the effect became much larger. Finally, the negative effect of working in regulated industries decreases during 1998-2002.

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Table 1 Sample distribution by industry

- (1) Industry is classified by Standard Industrial Classification (SIC) codes. Those are obtained from Compustat data base
- (2) Number of observation (N) represents the number of retired CEO who came from each industry
- (3) The 1989-1993 sample and 1998-2002 sample include some other industries which are not shown in this table. Those industries have small proportions in full sample
- (4) % is the percentage in full sample
- (5) The distribution of Brickley, Linck and Coles (1999)'s data set (1989-1993 sample) is in parenthesis

<i>Industry</i>	<i>SIC</i>	<i>N</i>	<i>%</i>
<i>Food</i>	20	8(11)	3.2(4.0)
<i>Chemical</i>	28	21(20)	8.4(7.3)
<i>Machinery & Equipment</i>	35	19(13)	7.6(4.7)
<i>Electric, other electric equipment</i>	36	6(7)	2.4(2.5)
<i>Transportation Equipment</i>	37	11(11)	4.4(4.0)
<i>Instrument, Device</i>	38	14(8)	5.6(2.9)
<i>Utility</i>	49	10(37)	4.0(13.4)
<i>Retails Store(General Merchandise Store)</i>	53	7(8)	2.8(2.9)
<i>Retail store</i>	59	8(2)	3.2(0.7)
<i>Depository Institution</i>	60	21(61)	8.4(22.1)
<i>Insurance</i>	63	15(19)	6.0(6.9)
<i>Service</i>	73	18(1)	7.2(0.36)
<i>Total</i>		250(277)	

Table 2 CEO and Firm characteristics

- (1) Pre-retirement performance (%) represents 4 year average value before retirement or averaged value over tenure as a CEO, whichever is less
- (2) Industry adjusted ROA is the firm's return minus the median 2 digit SIC industry return based on SIC code of Compustat
- (3) Abnormal stock return is the compound average annual return minus the CRSP value weighted index
- (4) I provide results for difference in mean test (2- tailed test) between one sub-sample and complements: *, **and *** show that the mean level of one sub- sample is higher than that of complements at 1%,5% and 10% significant levels
- (5) The distribution of the 1989-1993 sample is in parenthesis

	Full sample	Retirement Age ≥ 60	$64 \leq$ Retirement Age ≤ 66
Number of observation	250(277)	165(198)	63(88)
<i>CEO's characteristics</i>			
Retirement Age	61 (61.2)	63.97(64.1)	64.51(64.4)
Tenure as CEO	11.3 (9.6)	12.12(10.7)	13.02(10.6)
<i>Firms' characteristics</i>			
Total Asset (\$ billion in 1997)	15.38(13.4)	18.35(13.7)	18.03(13.3)
<i>Pre-retirement performance</i>			
Return on asset	5.31(3.3)	5.52(3.7**)	5.41(4.5***)
Industry adjusted ROA	0.64	0.95	0.93
Return on equity	15.11	16.63**	17.3
Abnormal stock return	-2.6(-8.1)	-1.84**(-4.0***)	-1.82(-1.2***)

Table 3 Mean number of directorships, Mean financial performance, stock price performance and asset by tenure as a CEO

- (1) Number of observation (N) represents the number of retired CEOs who have less than 5 tenure years, 10 tenure years and 20 tenure years as a CEO
- (2) % is percentage in full sample
- (3) Chair +2 years > 0 stands for the number of retired CEOs who have a chairman or inside director position 2 years after retirement in each category.
- (4) Outside + 2 years > 0 stands for the number of retired CEOs who have at least 1 outside directorships 2 years after retirement in each group
- (5) Chair +2 years and Outside + 2 years are the mean number of chairman/ inside directorship and outside directorships retired CEOs have 2 years after retirement in each group
- (6) All financial and market performance are the average over last four years in office or the CEO's tenure, whichever is less
- (7) ROA is return on asset. Abnormal stock return (ABRET) is the compound average annual return minus the CRSP value weighted index
- (8) I provide results for difference in mean test (2-tailed test) within each sample: *, **and *** show that the mean level of one group is higher than that of complements at 1%,5% and 10% significant level
- (9) The distribution of the 1989-1993 sample is in parenthesis
- (10) All variables are mean level of each subsample

	Tenure<5	otherwise	Tenure<10	otherwise	Tenure<20	otherwise
N	32(82)	214(195)	119(174)	127(103)	216(246)	30(31)
%	13.01(29.6)	86.99(70.4)	48.37(62.82)	51.63(37.18)	87.8(88.81)	12.2(11.19)
Chair +2 years > 0	15(34)	95(103)	45(76)	65(61)	88(116)	22(21)
Outside + 2 years > 0	24(45)	171(116)	101(111)	94(50)	177(146)	18(15)
Chair +2 years	.47(.41)	.44(.53**)	.38(.44)	.51**(.59***)	.41(.47)	.73***(.68**)
Outside + 2 years	1.72(1.07)	2.17*(1.4*)	2.29*(1.44**)	1.94(1.08)	2.17**(1.33**)	1.63(1.06)
ROA	5.25(2.1)	5.39(3.78**)	5.11(3.1)	5.63(3.59)	5.09(3.18)	7.42**(4.1)
ABRET	-3.6(-13.1)	-2.57(-5.97**)	-3.53(-8.4)	-1.92*(-.7.5)	-2.98(-8.37)	-0.71*(-5.94)
Asset	7.84(12.82)	16.75(13.7)	18.17(14.93)	13.18(10.93)	16.45(14.5**)	9.41(5.07)

Table 4-A Post-retirement directorship

- (1) The first sub-sample includes CEOs who retired at 60 years old and older
(2) The second sub-sample covers CEOs who left an office between aged 64 and 66
(3) Chair +2 year>0 represents the number of retired CEOs who have a chairman or inside director position 2 years after retirement in the full sample and both sub-samples
(4) Outside +2 year>0 represents the number of retired CEOs who have at least 1 outside directorship 2 years after retirement in the full sample and both sub-samples
(5) Outside +2 year is the number of outside directorships
(6) Total +2 year>0 represents the number of retired CEOs who have at least 1 directorship 2 years after retirement in full sample and both sub-samples
(7) Total +2 year is the number of total directorships
(8) % is the percentage in the full sample and both sub-samples
(9) The distribution of the 1989-1993 sample is in parenthesis

	Full sample		Age ≥ 60		64 ≤ Age ≤ 66	
	N	%	N	%	N	%
Chair +2 year>0	113(137)	45.2(49.5)	78(113)	52.3(57.1)	31(61)	49.21(69.3)
Outside +2 year>0	195(161)	78(58.1)	128(124)	77.58(62.6)	50(60)	79.37(68.2)
Outside +2 year						
0	55(116)	22(41.88)	37(74)	22.42(37.37)	13(28)	20.63(31.82)
1	50(58)	20(20.94)	32(45)	19.39(22.73)	9(18)	14.29(20.45)
2	50(48)	20(17.33)	29(36)	17.58(18.18)	13(15)	20.63(17.05)
3	42(28)	16.8(10.11)	28(19)	16.97(9.6)	10(11)	15.87(12.5)
4 or more	53(27)	21.2(9.75)	39(24)	23.64(12.12)	18(16)	28.57(18.18)
Total +2 year>0	236(208)	94.4(75.1)	156(162)	94.55(81.8)	58(77)	92.06(87.5)
Total +2 year						
0	14(69)	5.6(24.9)	9(36)	5.45(18.2)	5(11)	7.94(12.5)
1	64(76)	25.6(27.4)	40(56)	24.24(28.3)	9(21)	14.29(23.86)
2	57(48)	22.8(17.3)	38(39)	23.03(19.7)	14(19)	22.22(21.59)
3	52(41)	20.8(14.8)	32(32)	19.39(16.2)	14(12)	22.22(13.64)
4 or more	63(43)	25.2(15.5)	46(35)	27.89(17.7)	21(25)	33.34(28.41)
Total	250(277)		165(198)		63(88)	

Table 4-B Mean difference between the 1989-1993 sample and the 1998-2002 sample

(1) I provide results for difference in mean test (2- tailed test) between the 1989-1993 sample and the 1998-2002 samples: *, **and *** show that the mean level of the 1998-2002 sample is higher than that of the 1989-1993 sample at 1%,5% and 10% significant levels

<i>Sample period</i>	<i>1989-1993</i>	<i>1998-2002</i>
<i>Number of observation</i>	277	250
<i>Outside +2 years</i>	1.30	2.08***
<i>Chair +2 years</i>	0.49	0.45
<i>Total +2 years</i>	1.8	2.52***
<i>Return on asset</i>	3.29	5.32***
<i>Abnormal stock return</i>	-8.1	-2.5***
<i>Tenure as CEOs</i>	9.59	11.3***

Table 5 Probability of serving as outside directors 2 years after retirement (Ordered logit)

- (1) The dependent variable: the number of outside directorships 2 years after retirement
- (2) The classes are 0,1,2,3,4+ outside directorships
- (3) Control variables are the natural log of 1997 years asset (*LnAsset*), and a regulation dummy (*Regulated dummy*) which takes the value 1 if the firm is a utility, bank or insurance company
- (4) The outcome of the 1989-1993 sample is in parenthesis
- (5) ***, **and * represent 1%, 5% and 10% significant levels
- (6) I do not have "Industry adjusted ROA" for the 1989-1993 sample

	1	2	3	4
<i>Return on asset</i>	-0.74 (5.26**)			.36 (5.58**)
<i>Industry adjusted ROA</i>		-1.14		
<i>Abnormal stock return</i>			-3.04** (0.28)	-3.1** (-0.16)
<i>LnAsset</i>	.59*** (.62***)	.59***	.61*** (.57***)	.61*** (.62***)
<i>Regulated dummy</i>	-1.27*** (-1.46***)	-1.25***	-1.25*** (-1.58***)	-1.24*** (-1.5***)

Table 6 Mean difference between regulated industries and non-regulated ones

- (1) Number of observation represents the number of retired CEOs from non-regulated and regulated sectors
- (2) Mean value for 1989-1993 sample is in parenthesis.
- (3) Outside +2 years represents the mean level of outside directorships retired CEOs have 2 years after retirement in each group
- (4) I provide results for difference in mean test (2-tailed test) between non-regulated and regulated sectors in the 1989-1993 sample and the 1998-2002 sample
- (5) The result for Wilcoxon rank-sum test (p-value) is in the last column of table: the value in parenthesis is the p-value for the 1989-1993 sample
- (6) I do not have "Industry adjusted ROA" and "Return on equity" for the 1989-1993 sample

	<i>Non-regulated firms</i>	<i>Regulated firms</i>	<i>p-value</i>
<i>Number of observation</i>	204(160)	46(117)	
<i>Outside +2 years</i>	2.12(1.73***)	1.89(0.73)	0.324(0.00)
<i>Performance measure</i>			
<i>Return on asset</i>	6***(4.6***)	2(1.4)	0.00(0.00)
<i>Industry adjusted ROA</i>	0.8	0.1	0.046
<i>Return on equity</i>	16	12	0.008
<i>Abnormal stock return</i>	-.2.8(-6*)	-16(-11)	0.4435(0.59)
<i>Other characteristic</i>			
<i>Asset</i>	9.88(14.16)	39.79***(12.45)	0.00(0.00)
<i>Tenure as CEO</i>	11.06(10.32**)	12.41(8.59)	0.0997(0.18)

Table 7-A Mean difference in regulated industries between two time periods (1989-1993 and 1998-2002)

- (1) Number of observations represents the number of retired CEOs who came from regulated sectors
- (2) Outside +2 years represents the mean level of outside directorships retired CEOs from regulated sectors have 2 years after retirement in 1989-1993 sample and 1998-2002 sample
- (3) I provide results for difference in mean test (2 tailed test) between the 1998-2002 sample and the 1989-1993 sample: *** represents 1% significant level
- (4) The result for Wilcoxon rank-sum test (p-value) is in the table

	Year	p-value		
		1989-1993	1998-2002	
Utility	Number of observations	37	10	
	Outside +2 years	0.89	2.2***	0.0046
depository institution	Number of observations	61	21	
	Outside +2 years	0.66	1.71***	0.067
Insurance	Number of observations	19	15	
	Outside +2 years	0.63	1.93***	0.011
Total	Number of observation	117	46	
	Outside +2 years	0.73	1.89***	0.00

Table 7-B Mean difference in financial sector between two time periods

Financial sectors(60,61,62,63)	p-value		
	1989-1993	1998-2002	
Year			
Number of observation	88	39	
Outside +2 years	0.8	1.82***	0.00

Table 8 Probability of serving as outside directors 2 years after retirement: Industry specific effect (Ordered logit model)

- (1) The dependent variable: the number of outside directorships 2 years after retirement
 (2) The classes are 0,1,2,3,4
 (3) The Financial industry dummy which takes the value 1 if the firm is a depository institution (SIC code 60), non-depository credit institution (SIC code 61), security and commodity brokers, dealers, exchanges, and services company (SIC code 62), and insurance (SIC code 63)
 (4) The estimation in parenthesis is based on the 1989-1993 sample
 (5) ***, **and * represent 1%, 5% and 10% significant levels

	1	2
<i>Return on asset</i>	.21(5.95**)	-.37(5.04*)
<i>Abnormal stock return</i>	-2.75*(-.22)	-2.58*(-.10)
<i>LnAsset</i>	.63***(.69***)	.68***(.69***)
<i>Industry dummy</i>		
<i>Financial industry</i>	-1.49***(-1.47***)	
<i>Food</i>		-.12(.3)
<i>Chemical product</i>		.14(.89**)
<i>Machinery & equipment</i>		1.37***(.85)
<i>Transportation</i>		-.041(-.59)
<i>Utility</i>		-.63(-.86**)
<i>General merchandise store</i>		-1.54*(.66)
<i>Depository Institution</i>		-1.88***(-1.6***)
<i>Insurance</i>		-1.1**(-1.59***)

Table 9 Mean financial performance, stock price performance and assets by whether a CEO serves as a chairman or inside director 2 years after leaving office or not

- (1) Chair +2 takes value 1 if retired CEOs serve a chairman or inside director on their own boards 2 years after retirement. Otherwise, 0
- (2) I provide results for difference-in-mean test (2tailed test) within each sample: *, **and *** show that the mean level of one group is higher than that of complements at 1%,5% and 10% significant levels in the full sample and both sub-samples.
- (3) I also provide p-value for Wilcoxon rank-sum test (p-value)
- (4) All values are mean values
- (5) The distribution of the 1989-1993 sample is in parenthesis

	<i>Full sample</i>	
<i>Chair + 2years</i>	<i>0</i>	<i>1</i>
<i>Number of observation</i>	<i>137</i> <i>(140)</i>	<i>113</i> <i>(137)</i>
<i>Return on asset</i>	<i>5.25</i> <i>(2.3)</i>	<i>5.4</i> <i>(4.3***)</i>
<i>Industry adjusted ROA</i>	<i>0.51</i> <i>(0.2)</i>	<i>0.79</i> <i>(1.8)</i>
<i>Return on equity</i>	<i>16.17</i>	<i>13.84</i>
<i>Abnormal stock return</i>	<i>-4.8</i> <i>(-13.5)</i>	<i>0.05***</i> <i>(-2.6***)</i>
<i>Assets</i>	<i>19.8***</i>	<i>10.03</i>
<i>Tenure as CEO</i>	<i>9.71</i> <i>(8.26)</i>	<i>13.27***</i> <i>(10.95***)</i>
	<i>p-value</i>	
<i>Return on asset</i>	<i>0.23</i> <i>(0.00)</i>	
<i>Industry adjusted ROA</i>	<i>0.015</i> <i>(0.00)</i>	
<i>Return on equity</i>	<i>0.75</i>	
<i>Abnormal stock return</i>	<i>0.00</i> <i>(0.00)</i>	
<i>Assets</i>	<i>0.00</i>	

Table 10 Probability of CEOs' serving as chairmen or inside directors on their own boards 2 years after retirement (Logit model)

(1) The dependent variable: if retired CEOs serve as chairmen or inside directors on their own board 2 years after retirement value 1 is assigned and vice versa

(2) The financial and stock price performance are the average over last four years in office or the CEO's tenure, whichever is less

(3) Abnormal stock return is the compound average annual return minus the CRSP value weighted index

(4) Control variables are the natural log of 1997 years asset (LnAsset), tenure as CEO (Tenure as CEO), regulation dummy (Reg) which takes the value 1 if the firm is a utility, depository institution or insurance company

(5) Tenure (≥ 20 years) takes the value 1 if CEO tenure is longer than 19 years. Otherwise 0

(6) Tenure (≥ 10 years) takes the value 1 if CEO tenure is longer than 9 years. Otherwise 0

(7) The outcome for the 1989-1993 sample is in parenthesis.

(8) ***, ** and * represent 1%, 5% and 10% significant levels

Logit (2 years after retirement)	1	2	3	4
Abnormal stock return	8.25*** (1.87***)	9.66*** (1.55**)	9.49*** (1.6***)	9.45*** (1.66***)
Return on asset		-6.24* (3.23)	-5.17 (3.53)	-4.6 (3.28)
LnAsset	-.43*** (-.15)	-.47*** (-.13)	-.48*** (-.12)	-.49*** (-.13)
Tenure as CEO	.06*** (.04**)	.07*** (0.04**)		
Tenure (≥ 20 years)			1.22*** (.76*)	
Tenure (≥ 10 years)				.37 (.64**)
Reg	.56 (-.23)	.33 (-0.15)	.49 (-.16)	.48 (-.22)
Constant	2.83*** (1.12)	3.47*** (.79)	4.08*** (.99)	4.08*** (1.00)

Table 11 Probability of CEOs' serving as Chairmen or inside directors on their own boards 2 years after retirement (Logit model)

- (1) The dependent variable: if retired CEOs serve as chairmen or insider directors 2 years after retirement value 1 is assigned and vice versa
 (2) The financial and stock price performance is the average over the last four years in office or the CEO's tenure, whichever is less
 (3) Abnormal stock return is the compound average annual return minus the CRSP value weighted index
 (4) Control variables are the natural log of 1997 years asset (LnAsset), tenure year as a CEO, and a regulation dummy (Reg) which takes the value 1 if the firm is a utility, bank or insurance company
 (5) Outside dummy (Outside) is equal to 1 if the retired CEO has at least 1 outside directorship. Otherwise, 0
 (6) The outcome for the 1989-1993 sample is in parenthesis
 (7) ***, **and * represent 1%, 5% and 10% significant levels

Logit	1	2	3
Abnormal stock return	7.09*** (1.94***)	8.04*** (1.87***)	9.71*** (1.67***)
Return on asset			-6.64* (2.39)
LnAsset		-.3* (-.25**)	-.38*** (-.23**)
Tenure as CEO	.07*** (.05***)	.06*** (.05***)	.065*** (.05***)
Outside	-1.6*** (.74***)	-1.43*** (.89***)	-1.39*** (.85***)
Constant	.5 (-.77***)	3.02** (1.27)	3.94*** (1.01)

Table 12 Probability of CEOs' serving as outside directors and Chairmen/inside directors on their own boards 2 years after retirement: 2SLS

<i>Model</i>	<i>1989-1993 sample</i>	<i>1998-2002 sample</i>
<i>Constant</i>	0.98	4.43***
<i>Chair</i>		
<i>Outside</i>	0.72	-4.42**
<i>Return on asset</i>	2.59	-.04
<i>Abnormal stock return</i>	1.6***	7.29***
<i>Tenure as CEO</i>	.04**	.04
<i>LnAsset</i>	-.21	-.15