

CEO Turnovers and Corporate Governance: Evidence from the Copenhagen Stock Exchange

by

Robert Neumann and Torben Voetmann*

Department of Finance, Copenhagen Business School

Abstract:

This paper examines the relationship between performance and CEO turnovers using a sample of 81 turnovers and 81 matching companies listed on the Copenhagen Stock Exchange. We find that poor performance increases the probability of management replacements and that forced layoffs are value-increasing events while voluntary resignations are value-decreasing events. Institutional investors as active monitors, or part of corporate control, are not exhibited in the analysis of CEO turnovers. If institutional investors have any influence on CEO turnovers, then it is not revealed in our data. But, the results suggest that institutional investors' equity holdings tend to protect managers from replacement.

Keywords: CEO Turnovers; Corporate Governance; Ownership Structure;
JEL classification: G14, G23, G32

* Corresponding author. The Copenhagen Business School and the Wharton School of the University of Pennsylvania. Rosenørns Allé 31, DK - 1970 Frederiksberg C, Denmark, Phone (+45) 3815 3780, Fax: (+45) 3815 3600, E-mail: voetmann@wharton.upenn.edu. This paper has been presented at the 26th Annual Meeting of the European Finance Association 1999. We are grateful to our discussant Werner De Bondt for his insight and also to Tracey E. Hall for her editorial assistance. We have benefited from the comments of the Lunch workshop of the Finance Department at the Copenhagen Business School. Any comments are gratefully appreciated. The usual disclaimer applies.

I. Introduction

Corporate management successions and corporate control issues attracts substantial attention in the business community and the academic literature. Management successions may be value-increasing events that are the results of poor performance and changes in corporate policies. This paper contributes with evidence on the relationship between chief executive office (CEO) turnovers and corporate control transactions. It examines whether the corporate governance system in Denmark, without an active market for takeovers but with non-trivial equity holdings by institutional investors, demonstrates a quantifiable relationship between performance and management replacements. In particular, it focuses on whether a threat of involuntary resignation may provide the management with an incentive to align their actions with the interest of shareholders. The paper addresses whether the increase in institutional investors' equity holdings leads to more forced layoffs and active focus on shareholder value.

We collected a sample of management successions from firms that are listed on the Copenhagen Stock Exchange over the period 1994 to 1998. In the Danish corporate governance system, the distinction between the role of the executive board (decision rights) and the board of directors (control rights) is legally restricted which makes it possible to analyze replacements as corporate control transaction. This paper shows that an inverse relationship exists between past stock price performance and CEO turnovers. The results imply that poor performance tends to increase the probability of a CEO turnover. We also arrive at a similar conclusion by using earning per share (*EPS*) or free-cash flows (*FCF*) as a proxy for a performance benchmark. The inverse relationship arises when comparing the average performance of firms with CEO turnovers to the performance of firms in a control group. The control firms are found by matching size, in terms of market capitalization, and industry classification. The results in this paper are consistent with the empirical literature, which is primarily based on data from the United States (Weisbach, 1988, and Warner, Watts and Wrucks, 1988).

Evidence from the United States suggests that the CEO turnover decisions are affected by the composition of the board (Weisbach, 1988). Also, the likelihood of a forced layoff is greater in firms with a higher proportion of outside board members. This is not a plausible explanation of the corporate governance system in Denmark because companies are governed by a two-tier system. The CEO's duty is to perform operational

decisions whereas the board of director's competence is devoted to general strategic issues, long-term policies, and control functions. Furthermore, the CEO and the chairman of the board cannot be the same individual.^{1,2} The CEO may still control the board of directors because the CEO can promote and appoint board members. However, it is not possible for us to account for the CEO's ability to influence control rights. Hence, the institutional investors are more likely to be candidates as external corporate monitors and the increasing holdings of equity may imply that they can influence central corporate control decisions. In addition, the relative size of institutional investors' equity holdings provides them with an incentive and position to exercise corporate control. This means that larger shareholders (e.g. block ownership, management competition, and board monitoring) are interrelated factors that affect management turnovers.

Using a sample of private and public firms in Denmark, Lausten (1998) reports an inverse relationship between CEO turnovers and the pre-tax accounting profit to sales. However, Lausten does not adjust for confounding financial events that may explain the established relationship. Furthermore, she does not distinguish between the different reasons for the turnovers. A problem with the results in Lausten's (1998) is that without any proxy for confounding information the CEO turnover may very well be firms in which the owner(s) voluntarily resign(s) because of the lack of business opportunities (stressed assets) rather than a result of corporate control transactions.³ In contrast to Lausten (1998), we use stock market performance to examine CEO turnovers from firms listed on the Copenhagen Stock Exchange. We develop a simple proxy to assess the reason for the management change and focus on the potential role of institutional investors. Using this approach, the results in this paper are comparable primarily to Denis et al. (1997). Their sample does not display a relationship between institutional investors' ownership and CEO turnovers. Although, top executive turnovers are significantly and positively related to the presence of an outside block holder.

¹ Corporate Law ("Aktieselskabsloven") § 56(1)(3). The rule was a reaction to the Nordisk Fjer's bankruptcy in which the CEO also was the chairman of the board of directors. This limited external monitoring of the CEO which made it possible to perform fraud in a large scale.

² In banks the CEO is not, even, allowed to be a member of the board of directors. However, the board members can perform the CEO's function in a limited period, but they lose the voting right while they have this double function.

³ Lausten's (1998) data sample consists of more than 90 percent unquoted firms. Small firms are primary privately held and the major of control issue is creditor protection in the case of default. To the best of our knowledge, Lausten (1998) analysis is the first to establish the inverse relationship between performance

We also investigate whether institutional investors ownership affects the likelihood of management replacements in quoted Danish companies. But, our findings do not confirm Hudson et al.'s (1998) hypothesis that institutional investors' activism influences management successions. In fact, the results indicate that an increase in institutional ownership may protect top executives from monitoring activities. Institutional investors' influence on new corporate policies is not reflected in the process of management replacements in a measurable or positive way. The presence of institutional investors seems to limit the effect of corporate discipline mechanisms rather than empowering sanctions. This result is robust to different specifications of the empirical model. The results also show that top executive turnovers are unrelated to institutional ownership, which is similar to the findings by Denis et al. (1997).

The presence of institutional investors could be interpreted as a proxy for the lack of other investors, i.e. an ownership structure dominated by institutional investors could reflect that there is no entrepreneur, family owner, or foundation. To thoroughly investigate whether performance is related to ownership, we distinguish between institutional and strategic investors.⁴ We therefore design control variables to capture the influence from institutional investors' participation in the daily operations and strategic investors' involvement. However, the results suggest an inverse relationship between strategic and institutional investors' equity holdings. These are surprising results considering the increasing focus that is devoted to the potential influence of institutional investors on the corporate sector. The skeptical point of view states the potential risks that blue chip companies are increasingly influenced or even governed by pension fund managers. This may produce some comfort to the skeptics because their concerns are not supported by our results. However, our findings may very well reflect aspects of fiduciary rules that restrict pension funds and insurance companies' ability to invest resources in active monitoring. The results seem to be the expected outcome of the explicit restrictions surrounding institutional investors in Denmark. For example, the restrictions on institutional investors states that the Labor Market Supplementary

and turnovers in privately held firms in Denmark.

⁴ Institutional investors represent insurance companies, pension funds and strategic investors represent as foundations or industrial investors. The reason for studying these two types of investors is that the group of strategic investors has the opportunity to intervene according to the Danish legal system whereas institutional investors are bounded by several restrictions.

Pension Scheme and the Employers Retirement Scheme are not allowed to have dominant positions in any given firm either separate or together. The results confirm that the legal rules in the Danish corporate governance system work effectively as intended. Nonetheless, the desirability of the restrictions on the corporate governance system is questionable if the objective is an effective market for corporate control transactions.

The structure of the paper is as follows. Section II discusses prior research in the area of corporate management succession. Section III presents the data material and the applied methodology. Section IV shows the empirical results of logistic regressions of CEO turnovers. Section V analyzes the share price movements when CEO turnovers are announced. Finally, section VI provides concluding comments.

II. Related Research

The academic literature devotes much attention to examining the CEO's contractual setup in blue chip corporations. Empirical evidence indicates an inverse relationship between various performance benchmarks and the probability that the CEO is laid off.⁵ Wiesbach (1988) find that the inverse relationship is more pronounced for firms with a high fraction of outside directors. It suggests that the board of directors serves as a control mechanism. This is an interesting observation since Berle and Means's (1932) argue for the separation of control and ownership, which suggests that the management have de-facto control. Weisbach's finding could indicate that the CEOs' concern for their reputation in the managerial or directorial labor market causes them to perform self-monitoring. However, Denis et al. (1997) does not confirm Wiesbach's (1988) conclusions. Instead, Denis et al.'s find that a stronger relationship between CEO turnover and performance in outsider-dominated board of directors does not exist.⁶

Studies of management succession raise an important problem because CEO turnover decisions are often related to other structural changes in firms that could introduce

⁵ See Coughlan and Schmidt (1985), Weisbach, (1988), Warner, Watts and Wruck (1988), Jensen and Murphy (1990), and Parrino (1997).

⁶ However, the difference could be due to the fact that Denis et al. (1997) uses a two-tail test and Wiesbach (1988) employ a one-tail test. Re-estimating their results with a one-tail test, Denis et al. (1997) is able to reproduce Wiesbach's results (at a 10 percent level of significance).

biases due to confounding information. Several papers suggest that management turnovers are connected to financial events, e.g. proxy fights or bankruptcies DeAngelo and DeAngelo, (1989) and asset changes Asquith, Gertner and Scharfstein, (1991). In addition, Weisbach (1995) finds, at the time of a management change, an increase in the probability of divesting an acquisition that is publicly considered unprofitable. Moreover, Parrino (1997) provides evidence suggesting that the likelihood of both CEO turnovers and outside succession varies across industries, which implies that industries characterized by homogeneous firms have a greater likelihood of CEO turnovers, forced layoffs and outside successions. This is a sensible result since it is less costly and more accurate when the corporate monitors identify and replace a poor CEO in comparable firms. Similarly, CEO's in a homogeneous industry possess more human capital that is relevant to other firms in the industry. Also, knowledge of production technologies and business conducts makes job changes more likely. Therefore, the potential benefit of replacing a CEO increases with the quality of the pool of potential successors. This implies that CEO turnovers are less costly in homogenous industries.

The established inverse relationship seems to be an econometric fact, although to what extent the CEO is forced to leave his position is unknown. Denis and Denis (1994) point out that active monitoring parties other than the board of directors precede 68 percent of forced top executive dismissals in the year prior to the turnovers. Moreover, 56 percent of the forced layoffs are targets of corporate control transactions, e.g. block investment, takeover, and levered buyout. This evidence suggests that it is too narrow only to focus on the board of directors as corporate monitors. Nevertheless, the announcement of CEO turnovers assumes to convey relevant information. For example, Warner, Watts and Wruck (1988) report that the variance of the event-day residual is abnormally high. This reflects poor prior performance or positive expectations about the management succession as a value-increasing event because the abnormal return may increase. However, the net effect of the market response to a replacement and the discounting of the expected consequences of the successor's actions are not obvious. Thus, the appropriate inference from such observations is not clear. A general problem with the existing signal literature is that very different or competing explanations are used without having established any empirical relationship to discriminate among different hypotheses. Denis and Denis (1994) emphasize another line of explanations, that changes in accounting policies and results improve the operational performance after

management dismissals. They also find better improvements in operating performance after forced layoffs. A clear advantage of the earnings data is its ability to measure the CEO's performance, e.g. the benchmark short-term profits, whereas stock price as a benchmark may discount different elements that are not necessarily related to the CEO turnover. However, using accounting data exposes findings to many well-described problems such as the chosen depreciation scheme.⁷

Hudson et al. (1998) shows that the frequency of forced layoffs increased in the nineties compared with the seventies. Also, the nineties reflects an evolution in internal monitoring mechanisms. Hudson et al. (1998) argues that there are two reasons for this development. First, the size and composition of the board of directors are more independent and streamlined. Second, the influence of institutional investors increases through their equity holdings. In the United States, the total equity holdings of institutions, such as mutual funds, private pension plans, government retirement funds, and insurance companies increased from 19.8% in 1971 to 43.9% in 1994. The largest increase in Hudson et al.'s (1998) sample occurred between 1989-1994. Also, public funds and coordinated shareholder groups have initiated 616 shareholder proposals over the 1989-94 period compared with 60 proposals during 1984-88 (Gillian and Starks, 1997). This confirms a more active profile of public pension funds in the United States. Similarly, McConnell and Servaes (1990) find a positive relationship between institutional investors' ownership and Tobin's q . However, they note that this could reflect institutional investors' preference for stocks that historically have outperformed the market.

Mikkelsen and Partch's (1996) results indicate that the decline in the active takeover market in the late 1980s is associated with a decline in the relationship between performance and replacements. Mikkelsen and Partch (1996) argue that the relationship between CEO turnovers and performance in the less active period of the early nineties does not exist. This view seems consistent with Hadlock and Lumer (1996) who investigate an inactive period in the United States takeover market. Historically, they find no relationship between stock market return and management turnover between

⁷ The accounting rate of return only under very unlikely conditions is consistent with the economists' definition of profit. For example, is it unlikely that the depreciation scheme is chosen, in such a way, so that the value of the investment is calculated as the present value at the economic rate of return of the stream of benefits remaining. See other similar problems in Fisher and McGowan (1983).

1933-1941. The question is therefore whether the reduced effectiveness of external monitoring will be replaced by internal control? In other words, will a less active takeover market intensify the control by active investors or the board of directors? Or is an effective external market pressure a condition for the performance of internal control forces? The results from both Mikkelsen and Partch (1996) and Denis et al. (1997) indicate that the reduction in the external control mechanisms is also accompanied by a decline in the effectiveness of internal control.

III. Description of Data and Methodology

We construct the data set by gathering information of CEO turnovers from announcements submitted to the Copenhagen Stock Exchange and reports in *Reuters Business Briefing* during the period 1994 to 1998. The total sample consists of CEO turnovers from firms that meet the following three criteria: 1) the firm is listed on the Copenhagen Stock Exchange; 2) an announcement of resignation is submitted to the Copenhagen Stock Exchange that identifies the reason and the date of actual turnover; 3) the manager is the CEO or a member of the executive board. Applying these three criteria, we do not record the dismissals of chief executive officers of subsidiaries or any members of the board of directors. The two sources of information do not necessarily produce a complete sample regarding all resignations. However, any missing turnovers did not attract public attention around the time of the announcement. This may lead to a potential sample selection bias because forced layoff announcements attract more attention while voluntary resignations are often announced together with annual reports and several months prior to the actual resignation date.

We have no reason to believe that there exists a relationship between stock market performance and management successions because CEO turnovers occur for various reasons following good or bad performance. A potential bias against finding an inversely relationship between management changes and performance may be introduced if all observations are included without recording the reason of the resignation (Warner, Watts and Wruck, 1988). To overcome this potential problem, we identify the reasons for the CEO turnover and separate voluntary resignations from forced layoffs. Only a limited number of forced layoffs are public information.

Moreover, there is no obvious method to classify a resignation as forced if the press release or the report from *Reuters Business Briefing* does not include this information.⁸ Therefore, we applied three criteria to identifying forced layoffs: 1) announcements of sudden resignations in which a CEO left the firm immediately and does not leave for other employment, 2) mutual agreements between the CEO and the board of directors, 3) organizational changes such as divestments or a merger that leads to a turnover. In addition, we checked each announcement from *Reuters Business Briefing* to identify whether the CEO was forced to leave his or her position. This selection process provides a sample of 81 turnovers from 1994 to 1998 in which 39 turnovers are forced layoffs.⁹ We classified all other turnovers as voluntary resignations. Then we design a control group, identifying control firms with market capitalization (size) and industry classification similar to each observation of management succession at the time of the CEO turnover. We obtain information about the CEO's age from *Krak's* blue book and *Green's* "who is who".

The benchmarks of performance measurements are earnings per share (*EPS*), free-cash flow (*FCF*) and stock return. For each turnover and control firm, we calculate the market-adjusted stock performance and gather the accounting measurements for the six months period prior to the month of the turnover and the year before the year of the turnover using information from Account Data.¹⁰ We control for market effects by subtracting matching market returns, i.e. the measure of stock performance is the market-adjusted return. In addition, we calculate for each firm the price-to-earnings ratio (*PE*) and the price-to-free-cash flow (*P/FCF*) ratio for the six-month period prior to the month of the CEO turnover and for the year prior to the year of the CEO turnover.

[INSERT TABLE I]

⁸ In fact, we are only completely certain about two resignations. This concern the death of a CEO, which would be termed "voluntary" – may be not from his point of view.

⁹ Appendix A lists the CEO turnovers to stimulate further research. 70 percent of the sample represent an actual CEO. Therefore, we refer to turnovers of a CEO and an executive member as a CEO turnover.

¹⁰ Account Data is a database that contains information about all firms that are listed on the Copenhagen Stock Exchange. It includes annual reports and market information of each security listed on the Copenhagen Stock Exchange. The definitions of *EPS* and *FCF* are in accordance with the guidelines of calculating financial ratios from the Danish Association of Financial Analysts ("Finansanalytikerforeningens"), an association of analysts in Denmark.

Table I provides statistics for the numbers of CEO turnovers, the control firms, and the frequency of institutional investors ownership. The first and second line in table I show that of the 51 CEO turnover firms the institutional investors hold less than 40 percent ownership. This information is based on the reported cumulative equity holdings by institutional investors at the beginning of the year in which the CEO turnover occurs. The frequency of institutional investors' ownership in the control group shows that also of 51 control firms the institutional investors hold less than 40 percent ownership. Parum (1995) shows that the average ownership by institutional investors is about 33 percent in firms listed on the Copenhagen Stock Exchange, i.e. the ownership distribution in the CEO turnover firms appears to be representative. In addition, Parum's results suggest that the ownership level, by institutional investors in Denmark, is stable and insensitive to firm size or liquidity. In the United States, the total holdings by institutional investors increases from 19.8 percent in 1971 to 43.9 percent in 1994 (See Hudson et al., 1998). In Denis's et al.'s (1997) sample, the institutional investors own about 33.3 percent of equity while in Brickley (1994) the average ownership level is 32.9 percent. Hudson et al. (1998) find an increasing number of forced layoff from 1971 to 1994. In their sub-period 1989-94, the forced layoffs represent 23.4 percent while in our sample 48 percent of all CEO turnovers are forced layoffs.

Panel B in table I shows the number of CEO turnovers distributed over the period 1994 to 1998. It shows that only 12 CEO turnovers in the sample occurred in 1994 while in 1998 a total of 28 CEO turnovers took place. Panel B also shows that the average market-adjusted return for CEO turnover and control firms is -6.08 percent and 2.34 percent, respectively. The average *EPS* for CEO turnovers and control firms is 12.32 and 25.52, respectively. Panel C in table I tests for differences in the benchmark of performance between CEO turnover firms and firms in the control group. The test shows a significant difference in the market-adjusted benchmark ($p\text{-value}=0.0058$) between CEO turnover firms and firms in the control group. The *EPS* are also significantly ($p\text{-value}=0.0193$) different between CEO turnovers and firms in the control group.

We design two control variables to capture large shareholders ability to influence management successions. The effect, identified by Denis et al. (1997) and Hudson et al. (1998), is captured by institutional investors' (*INSTI*) and strategic investors' (*STRAT*)

ownership.¹¹ This separation is designed to identify the impact of legal restrictions in the Danish corporate governance system. We expect that the institutional investors play a less active role compared to their counterparts in the United States. The information about institutional and strategic investors ownership is transformed to overcome potential problems that are associated with using compressed data within a narrow band because this may reduce errors in estimating levels of significance.¹²

$$INSTI = \left(\frac{\text{Institutional Ownership}}{100 - \text{Institutional Ownership}} \right)$$

$$STRAT = \left(\frac{\text{Strategic Ownership}}{100 - \text{Strategic Ownership}} \right)$$

The likelihood of a CEO turnover is calculated using a logistic regression that calculates the maximum likelihood estimates. The reason for not applying an ordinary least square (OLS) regression is because the estimates are inefficient when the dependent variables are dichotomous. The response variable is equal to one if a management succession takes place and zero otherwise. The form of the linear logistic model is:

$$\text{Logit}(p) = \log\left(\frac{p}{1-p}\right) = \mathbf{a} + \mathbf{b}'\mathbf{x} \quad (1)$$

where \mathbf{a} is the intercept parameter, and \mathbf{b} is the vector of slope parameters. \mathbf{x} is a vector of explanatory variables that may affect the probability of a CEO turnover and $p = \text{Pr}(Y=1/\mathbf{x})$ is the probability modeled.¹³ The significant difference in the benchmark

¹¹ The regulation of ownership disclosures on the Copenhagen Stock Exchange requires any investors to announce equity holdings surpassing multiple of five percent. Firms repurchasing shares in multiples of two percent until ten percent. The measurement of institutional and strategic investors' ownership are based on the individual firms' annual reports. This causes some inconsistency in the design of the control variable because of a time lack between turnovers and annual reports. Neumann and Voetmann (1998) discuss the construction of the control variables in detail.

¹² Since some of the firms can be characterized by having zero ownership by strategic investors, we could not take the natural logarithm to strategic investors' ownership.

¹³ Alternatively, a probit methodology could be applied, however, the results are similar to those of the maximum likelihood estimates from the logit estimation. The close similarity between the logit and probit model is confined to dichotomous variables while there may be major differences in the case of polytomous dependent variables. The logit function has slightly heavier tails than the cumulative normal. Thus, the choice of model only matters in cases in which the data are heavily concentrated in the tails. We test for this and reject it. Therefore, only results from the logit model are shown. The results using a probit model are consistent with the conclusions from the logit analysis.

measurement of CEO turnovers and control firms implies that the specified logit model can possibly distinguish between the two groups (see panel C in table I).

The second part of the analysis investigates the market response around the CEO turnovers. The data set provides a complete set of information on CEO turnovers to test whether "resignations" follow poor performance. Also, it is possible to compare the market responses across different event windows. To test the market responses, we apply a standard event study methodology (see appendix B). The abnormal returns are estimated using the market model. Parameters \mathbf{a}_i and \mathbf{b}_i for each firm i are estimated using daily returns between 260 trading days to 20 trading days before the CEO turnover announcement.

$$AR_{i,t} = R_{i,t} - (\mathbf{a}_i + \mathbf{b}_i M_t) \quad (2)$$

$R_{i,t}$ and M_t are the return of firm i at day t and the return of the market index at day t , respectively. $AR_{i,t}$ is the abnormal return of firm i 's stock at day t . The abnormal return measures the share price movements to the CEO turnover announcement. The section presents the empirical findings.

IV. Empirical Results

The overall results are consistent with research based on data from the United States, which suggests that poor performance occurs prior to CEO turnover. However, before interpreting the results we perform a robustness test in order to assess the influence of individual CEO turnovers on the logistic regression. The influence of individual CEO turnovers on the maximum likelihood coefficients is tested with the Pearson's χ^2 statistics for ill-fitted observations (see appendix C). The results show that the parameters in the logistic regression are not heavily influenced by one single CEO turnover.

(INSERT TABLE II)

Table II presents the results of pooled cross-sectional and time-series logistic regressions for all CEO turnovers. The first column of the table shows that poor performance is strongly related to CEO turnover. The estimate in model 1 is negative

1.867 ($t\text{-test} = -5.67$), which is almost twice as large as the coefficient in Denis et al. (1997) model 1 (table 3). They estimate a coefficient on the prior year market-adjusted stock return to negative 1.06 ($p\text{-value}=0.00$). All regressions 1-4 show an inverse and significant relationship at least at a five-percent level between the market-adjusted return six months before the management change and the probability of a CEO turnover. The result indicates that the board of directors reacts relatively fast to poor performance.

Models 5-7 investigates the extent to which accounting based benchmarks for performance is related to CEO turnovers. *EPS* displays the same properties as the market-adjusted return. The reported *EPS* from the latest annual report before the CEO turnover is also inversely related to the probability of a management succession. The reported *FCF* has the same explanatory power as *EPS*, the estimated coefficients in model 5 are negative 0.008 ($t\text{-test} = -3.24$) and 0.008 ($t\text{-test} = -7.47$) for *EPS* and *FCF*, respectively. This shows that both *EPS* and *FCF* are inversely and significantly related to management dismissals. Security analysts primarily focus on free cash flow in their recommendation reports. However, the value of public accounting figures seems to have at least the same explanatory power as the more theoretical correct valuation benchmark.¹⁴ The accounting related measurements *P/FCF* and *PE* are inversely but not statistically related to CEO turnovers. The natural logarithm of size is expected to be positively related to the proportion of outside directors, managerial depth, and organizational complexity. The generally positive coefficient estimates are consistent with the perception that institutional investors are more likely to replace a poor-performing CEO. However, the natural log of the market capitalization (market price times the outstanding shares) is not statistically related to management successions. The included *AGE* dummy captures the effect of a natural management change process on the likelihood of CEO turnover. Similar to Hudson et. al (1998), we apply a cutoff of 60 years of age or older in which case the *AGE* dummy is equal to one. Alternatively, we could have used the typical retirement age but the turnover relationship depends on the exact time where the CEO relinquishes the position. The coefficients for the *AGE* dummy in table II confirms that a natural management replacement process takes place.

¹⁴ Even though basic corporate finance suggests that analysts should only pay attention to the free cash flow it is probably easier to manipulate than net profits. Changing the investment and finance decisions is an easy approach to change the level of cash flow. The classical procedure is to cut down on research and development when the cash from operations are drying out.

The coefficients are positive in every turnover outcome. A total of 19 CEO's of the 81 CEO turnovers are 60 years or older but only three of them are categorized in the forced layoff group.

Models 2-4 and models 6-7 test for the influence by institutional investors' ownership on the probability of a CEO turnover. The coefficients for institutional investors (models 2 and 3) are negative 0.052 ($t\text{-test} = -0.11$) and negative 0.051 ($t\text{-test} = -0.11$). The coefficients for model 4, which includes both market and accounting performance benchmarks, is negative 0.042 ($t\text{-test} = -0.06$). The results indicate that institutional investors' are negatively related to management successions. This may imply that large equity holdings by institutional investors' protect the management from replacements but the coefficients are not significant at any level. Denis et al.'s (1997) model 3 and 4 (in table 3), also show that institutional investors have no influence on the probability of CEO replacements. The coefficients are almost zero and clearly insignificant.

The control variable *STRAT* is included to capture the characteristics of other large "strategic" investors. Strategic investor represents the accumulated ownership of family owners, foundations or industrial investors. We find that the ownership by strategic investors' is positively related to the probability of a CEO being replaced. This result is consistent with the idea that strategic investors with special insights and knowledge about the firm are better monitors compared to institutional investors.

Table III separates the sample into two sub-samples in order to draw attention to the reasons for the CEO turnover. It provides additional insights into the sensitivity of the likelihood of a CEO turnover that depend on whether the CEO is forced to leave his or her position or left the position voluntary.

(INSERT TABLE III)

Of the 81 turnovers, 39 are the results of forced layoffs while 42 left voluntary. Models 1-4 re-estimate the logistic regressions for the group of forced layoffs and models 5-8 re-estimate the results for the group of voluntary resignations. Overall, the results reveal - as expected that forced layoffs and performance is inversely related. In particular, the stock market performance in model 1 and 2 is inversely related with the negative

coefficients 3.62 ($t\text{-test}=-9.71$) and 3.63 ($t\text{-test}=-9.61$), respectively. These results are similar to Hudson et al. (1998) model 2, (table 5) in which forced layoffs are inversely related with a negative coefficient 1.28 ($p\text{-value}=0.028$) to stock market returns the year prior to the turnover.

Models 3 and 4 show that the accounting associated performance benchmark measured as *EPS* and *FCF* are significant and inverse related to CEO turnovers at a five-percent level of significance. Hudson et al.'s (1998) results also reveal a significant and inverse relationship between the ratio of previous earnings before interest and taxes to the beginning of the period book assets ($p\text{-value}=0.007$). However, Hudson et al. (1998) show that the likelihood of a turnover is positively and negatively related to accounting figures in their sub periods. In the 1983-88 sub-period, changes in accounting figures are unrelated to the likelihood of turnover, while the estimated relationship is negative and significant for the sub period 1989-94. Hudson et al. argue that the measurement used to evaluate the CEO turnover from the level of accounting performance to changes in accounting performance figures relates to the changes in internal monitoring after the active takeover market weakened in the late eighties.

Our sample of CEO turnovers does not allow us to draw conclusion from a long-term perspective. In addition, since the corporate governance system in Denmark practically never includes hostile takeovers, as a control option, the internal disciplinary mechanisms have always played an important role in management replacements. However, the relationship between institutional investors' ownership and forced layoff and voluntary replacements also becomes insignificant in table III. The *AGE* dummy in table III re-confirms the natural management replacement process. For voluntary resignations the coefficient is positive and for forced layoffs the coefficient is negative. This indicates that CEO's close to retirement are more likely to be replaced.

Finally, we consider if our findings may be due to the arbitrary selected estimation period and the use of market-adjusted stock performance, free-cash flow, and earnings per share as performance benchmarks. Therefore, the market-adjusted returns over the year prior to the year of the management succession are calculated as well as the lagged and transformed ownership by institutional investors, lagged free-cash flow, and lagged earnings per share. The results (not reported) of re-estimating models 2 and 6 in table III

reconfirms our findings, implying that CEO turnovers are inversely related to poor performing firms. Model 2 shows that the market-adjusted return₁ is statistically significant and negative 1.62 (*p-value*=0.04) while institutional ownership₋₁ is negative 0.06 (*p-value*=0.94). Model 6 shows that the free-cash flow the year prior to the turnover is negative 0.01 (*p-value*=0.00) and institutional ownership is negative 0.00 (*p-value*=0.97) while *EPS* is negative 0.00 (*p-value*=0.81). Estimating the market-adjusted return₁, free-cash flow the year prior to announcement, and institutional ownership₋₁ shows that the inverse relationship between CEO turnovers and poor performing firms are not only due to the performance immediately prior to management succession. The estimated coefficients are negative 1.27 (*p-value*=0.14) return₁, 0.01 (*p-value*=0.00) *FCF*₋₁, 0.00 ownership₋₁ (*p-value*=0.97), respectively. Second, we calculate the cumulative market-adjusted return over the three years prior to the year of the CEO turnover. The result (not reported) also shows that management succession is inversely related to poor performing firms. The coefficient is negative and statistically significant 0.56 (*p-value*=0.02). Denis, Denis and Sarin (1997) test the robustness of their findings for the arbitrariness of their logit specifications, benchmark, the effect of firm size, and lack of industry control. Their findings are robust to alternative performing specifications and industry-adjusted benchmark. Overall, their results also imply that the likelihood of a CEO turnover is inversely related to poor performing firms when adjusted for alternative performance benchmarks.

V. Share Price Movements

The analysis of the share price movements consists of two parts. First, we calculate the abnormal return using various event windows around the turnover announcements. Second, we use a cross-sectional regression to analyze possible explanations of the abnormal returns.

A. Share Price Movements Around the CEO Turnover

It is often assumed that a CEO is removed due to poor performance. Therefore, an increase in value or a positive share price response is expected. Warner, Watts, and Wruck (1988) did not find any indication of significant market responses to the announcement of CEO turnovers using the market model to estimate abnormal returns.

But they confirmed an increase in the variance at the day of the announcement. Weisbach (1988) interprets this result as evidence that the announcement conveys relevant market information. The average cumulative abnormal returns around the announcement day broken down by forced layoffs, voluntary resignations, and a list of the firms in the control group are shown in table IV.

(INSERT TABLE IV)

The share price movement at the announcement period 0:+1 days is negative 0.1 percent ($t=-0.35$) and positive 0.5 percent ($t=1.85$) for voluntary resignations and forced layoffs, respectively. Similar to Warner, Watts, and Wruck's (1988), the average abnormal returns around management successions are not statistically significant. However, table IV shows that when the event window increases to -5:+5 days, -3:+3 days, and -1:+1 days the average cumulative abnormal return is statistically significant. For voluntary resignations $CAAR_{-5:+5}$ is negative 2.1 percent ($t=-2.47$) and $CAAR_{-1:+1}$ is negative 1.0 percent ($t=-2.31$). Forced layoffs experience a $CAAR_{-5:+5}$ of positive 2.4 percent ($t=2.85$) and $CAAR_{-1:+1}$ is positive 1.1 percent ($t=2.48$). The cumulative average abnormal returns for all event windows show that the voluntary resignations and the forced layoffs experience negative and positive share price movements, respectively.

Denis and Denis (1997) argue that firms with high managerial ownership are performing poorly prior to management succession and, as our results show, the market interprets CEO turnovers as value-increasing events. But, as noted in our discussion in section II, it is difficult to assess the net effect of CEO turnovers given the information effect and the real effect.¹⁵ Hence, we find positive stock price reactions to forced layoff announcements following prolonged poor performance and negative stock price reactions around voluntary resignations because the information effect is higher than the real effect. These results may suggest that the correction of prior errors dominate the short-term market reaction. This may reflect that the market recognizes the existence of

¹⁵ The information effect is the expected change due to the revealed information and the real effect is the observed effect. Bonnier and Bruner (1986) show the changes in the information and the real component for management changes with poor dividend and earnings performance. Warner, Watts, and Wruck (1988) argue that the abnormal return at announcement is the sum of the two components when the performance is unknown to the market. Hudson et al. (1998) argue that the turnover information after a long time of known poor performance reveals relative little new information to the market than for forced layoffs after a short period of poor performance. Therefore, the real component is likely to be positive.

firm specific knowledge, i.e. the negative net effect could express uncertainty or loss of a CEO's human capital.

Hudson et al. (1998) find similar results on the fact that the cumulative average abnormal returns around CEO turnovers move significantly for the period 1989 to 1994. They find positive and significant stock price movements for forced layoffs and negative and significant stock price movements for voluntary resignations. Parrino and Trapani (1996) find that share price movement is positive when an outside succession follows a forced layoff while an inside succession leads to negative share price movements. Our results show that the average cumulative abnormal returns are not significant for the succession of members of the executive board. The net effect of the forced layoffs market response and the voluntary resignations market response are on average zero. In addition, the findings show, not surprisingly, that the average cumulative abnormal returns of the control group are not statistically significant from zero in any event windows. The average cumulative abnormal returns for forced layoffs, voluntary resignations, and the control group are shown in figure 1.

(INSERT FIGURE 1)

Figure 1 shows that about five days before the CEO turnover announcement the cumulative average abnormal return decreases for forced layoffs and increases for voluntary resignations. The average cumulative abnormal return for the control group stays constant over the event period.

B. Cross-Sectional Explanation of the Market Responses

Cross-sectional regressions test for whether or not the abnormal returns can be explained by the market-adjusted returns and the *FCF* performance benchmark. We test $CAAR_{J:+1}$ for whether CEO turnovers improve the value of firms. This also indicates that forced layoffs are value-increasing events. In addition, we test for whether institutional investors' relative ownership can explain the abnormal return. The relationship between institutional investors' ownership and prior performance provides additional confirmation of the results above. The cumulative average abnormal return in event window -1:+1 days is regressed against forced layoff, size, institutional investors'

ownership, market-adjusted, and *FCF* stock performance.

(INSERT TABLE V)

The first regression in table V confirms that forced layoffs and voluntary resignations experience different market reactions. The coefficient for the dummy variable, D_{Layoff} , for forced layoffs is positive 0.007 ($t=0.89$) but not statistically significant at any level. The coefficient of the market-adjusted abnormal return is positive 0.042 ($t=1.83$) and statistically significant at a 10 percent level. This result shows that the net effect of the information effects and the real effects outweigh each other since the variable contains forced layoffs and voluntary resignations. Therefore, we isolate the real effect with a dummy variable, $Return \times D_{Layoff}$, to test whether the prior performance is related only to forced layoffs. The variable $Return \times D_{Layoff}$ is negative 0.062 ($t=-1.94$), which confirms that forced layoffs are value-increasing events. Regression model 2 is similar to model 1 except that the performance benchmark is the free-cash flow (*FCF*). The results show that, as with market-adjusted abnormal return, D_{Layoff} , for forced layoffs is positive 0.011 ($t=1.16$) but not statistically significant at any level. The variable *FCF* is 0.001 ($t=0.88$) and D_{FCF} is negative 0.001 ($t=-0.56$), which also confirms that forced CEO turnovers are value-increasing events while voluntary resignations are value-decreasing events. Regression 3 in table V shows that institutional (strategic) investors' ownership is positively (negatively) related to abnormal performance in the event window but not significant at any level. This confirms, the results from the logit models in table II and III, that institutional investors' equity holdings seem to protect managers from replacements.

Weisbach (1988) finds similar results showing that a forced layoff that followed poor performance increases the value of the firm. Hudson et al. (1998) find that the average abnormal return increases with 4 percent ($p\text{-value}=0.00$) around forced layoffs. Hudson et al. (1998) argue that this increase expresses the change in the effectiveness of internal monitoring mechanisms. But, the information revealed from the turnover announcements is small compared to the poor performance prior to the management succession, which implies that institutional investors implementing monitoring mechanisms simply by replacing the CEO is not sufficient. Hudson's results imply that

institutional investors activism may probably offer the best (practical) hope for effectively improving the American corporate governance system in the years ahead. However, evidence from Denmark, or continental Europe, indicates that institutional investors do not resolve the corporate system.

VI. Conclusion

International evidence shows that the level of institutional investors' equity holdings is increasing rapidly. However, relatively little research is done on the existence of a relationship between institutional and strategic investors' ownership and corporate control transactions. Outside the United States, to the best of our knowledge, very limited work investigates the relationship between corporate control and CEO turnovers. This paper provides some evidence of this relationship using a sample of CEO turnovers and institutional investors' ownership from firms that are listed on the Copenhagen Stock Exchange.

The inverse CEO turnover-performance relationship is confirmed, which suggests that poor performance increase the probability of a manager being replaced. But more importantly, we obtain a better understanding of institutional investors' ability to affect the decision of management successions. The results do not support the opinion that the increasing equity holdings by institutional investors lead to an increasing influence on corporate decisions. The CEO turnovers in this study do not reflect that institutional investors act as active corporate monitors. The results show that an increasing level of institutional investors' accumulated ownership tends to protect managers from corporate control transactions.

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Appendix A: Lists of Resignations, Reasons, Dates and Firms

We construct the data set by gathering information of turnovers from announcements submitted to the Copenhagen Stock Exchange and reports in *Reuters Business Briefing* during the period 1994 to 1998. The total sample consists of CEO turnovers from firms that meet the following three criteria: 1) the firm is listed at the Copenhagen Stock Exchange; 2) an announcement of resignation is submitted to the Copenhagen Stock Exchange in which it is possible to identify the reason and the date of the actual CEO turnover; 3) the manager is the CEO or member of the executive board. We do not record dismissals of chief executive officers of subsidiaries or any board members. CEO turnover is classified as forced layoff (1) if the CEO left the firm immediately and did not leave for other employment or if *Reuters Business Briefing* reports that the CEO was forced from the position. All other turnover are classified as voluntary resignation (0).

Company	CEO/Director	Date	Turnover
F. Junckers Industrier	Steen Weirsøe	1/3/94	0
Rimas Heden	Jan Larson	1/21/94	1
Blücher Metal	Johannes Skibild	2/9/94	0
Aalborg Portland	Ole Stevens Larsen	3/8/94	0
HLJ Industri	Villy Banke	6/14/94	1
Dansk Kaution	Ebbe Drehn	9/1/94	1
Nørhaven	Poul Arne Jensen	9/14/94	0
J. Lauritzen	Peter Weitermeyer	9/23/94	1
J. Lauritzen Holding	Sven Dyrlov Madsen	10/12/94	0
Bikuben	Børge Munk Ebbesen	11/1/94	1
Obtec	Kurt Skov	12/1/94	0
Spar Nord	Torsten Olsson	12/27/94	0
Denka Møbler	Poul Jørgensen	1/11/95	1
Obtec	Carls E. Carstens	1/30/95	0
Coloplast	Folmer Halskov	2/27/95	0
Ford	Lars Blom	4/28/95	0
ISS	Lise Friis	5/29/95	0
ISS	Poul Andreasen	5/29/95	0
DDL	Frede Eriksen	6/30/95	0
WesselandVett	Jørgen Basse	7/13/95	0
Chr. Hansen	Poul Hansen	7/20/95	0
Kansas	Leif Hansen	8/16/95	1
Skako	Kai Schultz-Nielsen	10/3/95	1
SIS International	Ole Olsen	11/8/95	0
Chemitalic	Erling Nielsen	12/21/95	0
Hygæa	Ib Elsøe	1/5/96	0
Carlsberg	Poul Svanholm	3/15/96	0
BG Bank	Tommy Pedersen	4/29/96	1
F. Junckers Industrier	Hans E. Witthøft	5/22/96	0
Jacob Holm	Knud Frisenborg	6/11/96	0
Louis Poulsen	Hans Cordes	7/12/96	0
NTR Holding	Lise Friis	7/20/96	1
Incentive	Axel Lejrskov	9/1/96	0
Kompan	Flemming Aggergaard	9/5/96	1
Jacob Holm	Poul Mikkelsen	9/10/96	0
Rasmussen and Schiøtz	Jens Erik Karlskov Jensen	9/16/96	1

Company	CEO/Director	Date	Turnover
Rasmussen and Schiøtz	Jens Winther	9/16/96	1
Danisco	Palle Marcus	10/1/96	0
Crisplant	Jesper Krogh	11/18/96	1
Jyske Bank	Kaj Stenkjær	2/20/97	0
ISS	Jørn Wendel Andersen	2/28/97	1
ChristianiandNielsen	Peter Kirketerp	3/5/97	1
Jacob Holm	Eric Rylberg	3/11/97	0
Finansieringsselskabet Gefion	Anne Marie Nielsen	3/20/97	0
DSI	Per Sørensen	4/29/97	1
DDE	Per Bækgård	5/2/97	1
WesselandVett	Sverre Riis Christensen	5/7/97	1
Den Danske Bank	Knud Sørensen	6/12/97	0
NEG Micon	Ole Bøgelund Nielsen	9/30/97	1
Blücher Metal	Finn Flanding	10/23/97	1
Alm. Brand	Jesper Stockholm	10/27/97	1
InWear	Ebbe Nielson	11/14/97	1
William Demant	Lars Kolind	12/3/97	0
Albani	Jørgen Lund	12/10/97	1
Aarhus Oliefabrik	Erik Boesgaard	1/5/98	1
National Industri	Henning Hansen	1/6/98	1
ØK	Carsten Dencker Nielsen	1/14/98	0
Teledanmark	Hans Würtzen	1/20/98	0
BG Bank	Hans-Ole Jochumsen	1/28/98	1
Martin Gruppen	Peter Johansen	2/11/98	1
Foras	Ib Yde	2/23/98	0
Kompan	Henning Braginsky	3/11/98	1
Sophus Berendsen	Hans Werdelin	4/2/98	0
FIH	Henrik Heideby	4/15/98	0
C.W Obel	Børge Nordgaard Hansen	5/5/98	1
DV Industri	Kristian Kolding	5/6/98	1
Schades Papir	Robert Williams	5/26/98	1
Højgaard Holding	Olav Grue	5/28/98	0
VT	Jacob Lund	6/4/98	0
Topsil	John Olesen	6/17/98	1
Royal Scandinavia	Leonhard Schrøder	7/28/98	0
FLS	Per Skovgaard Jespersen	8/10/98	1
ABB	Sune Carlsson	8/12/98	1
Jacob Holm	Poul Plougmann Laursen	8/12/98	0
J. Lauritzen	Claus V. Ipsen	9/3/98	0
UniDanmark	Lars Eskesen	9/7/98	0
ØK	Michael Fiorini	10/14/98	1
SDC Dandisc	Torben Frantzolet	10/28/98	1
Skako	Gynther Kohls	11/19/98	0
FLS	IB Christensen	12/08/98	0
Ambu	Vivi Kjær	12/9/98	1
Den Danske Bank	Jens Otto Veile	12/11/98	1

Appendix B: Event Study Methodology

The methodology used to estimate the short-horizon abnormal returns is standard and follows the method suggested by Campbell, Lo, and MacKinlay (1997). After the announcement date is identified for a resignation, the returns are aligned in event time, \mathbf{t} , relative to the announcement date, $\mathbf{t} = 0$. The abnormal returns in the event-window around the event date are calculated from the expected returns using a market model. The market model is: $\mathbf{R}_i = \mathbf{X}_i \mathbf{q}_i + \mathbf{e}_i$, where $\mathbf{R}_i = [R_{iT_0+1} \dots R_{iT_1}]'$ is a $(L_i \times 1)$ vector of returns for firm i in the estimation window between T_0 and T_1^* , i.e. $L_i = T_1^* - T_0$. $\mathbf{X}_i = [\mathbf{i}, \mathbf{R}_m]$ is an $(L_i \times 2)$ matrix between T_0 and T_1^* with a vector of ones in the first column and the value-weighted market return vector $\mathbf{R}_m = [R_{mT_0+1} \dots R_{mT_1}]'$ in the second column. $\mathbf{q}_i = [\mathbf{a}_i \ \mathbf{b}_i]$ is the (2×1) parameter vector. $\mathbf{e}_i = \mathbf{R}_i - \mathbf{X}_i \mathbf{q}_i$ is the $(L_i \times 1)$ vector of abnormal returns in the estimation window. The estimation of the parameter vector, \mathbf{q}_i , can be obtained by the ordinary least square method for the estimation window $L_i = T_1^* - T_0$, where T_0 is first observation in the estimation window and $T_1^* = T_1 - 1$ is the last observation. The abnormal return vector for the event window is; $\mathbf{e}_i^\circ = \mathbf{R}_i^\circ - \mathbf{X}_i^\circ \mathbf{q}_i$, where $^\circ$ denotes that the vector is from the event window $L_2 = T_2 - T_1$, where T_2 is the last observation in the event window. Assuming N observations (events) in the event window, it is possible to take the average of these N abnormal returns (AAR). The average abnormal return is a cross-sectional mean that has the advantages that it is taken across many observations. Therefore, potential influences from other simultaneously construed information, either firm specific or the result of market effects, are minimized.

$$AAR = \frac{1}{N} \cdot \sum_{i=1}^N \mathbf{e}_i^\circ. \quad (\text{B.1})$$

Given AAR, consider a period in the event window in the range \mathbf{t}_1 to \mathbf{t}_2 , where $T_1 < \mathbf{t}_1 < \mathbf{t}_2 < T_2$. The cumulative average market model abnormal return (CAAR) from time \mathbf{t}_1 to \mathbf{t}_2 , can then be calculated by

$$CAAR(\mathbf{t}_1, \mathbf{t}_2) \equiv \sum_{t=\mathbf{t}_1}^{\mathbf{t}_2} AAR_t \quad (\text{B.2})$$

The advantage of using cumulative average market model abnormal returns is that it is possible to ignore any time-series dependence in the excess returns. Tests for significance of the cumulative average market model abnormal return over the period $(\mathbf{t}_1, \mathbf{t}_2)$ can be estimated with the following test statistics

$$J_1 = \frac{CAAR(\mathbf{t}_1, \mathbf{t}_2)}{\sqrt{\text{var}(CAAR(\mathbf{t}_1, \mathbf{t}_2))}} \sim N(0, 1) \quad (\text{B.3})$$

where

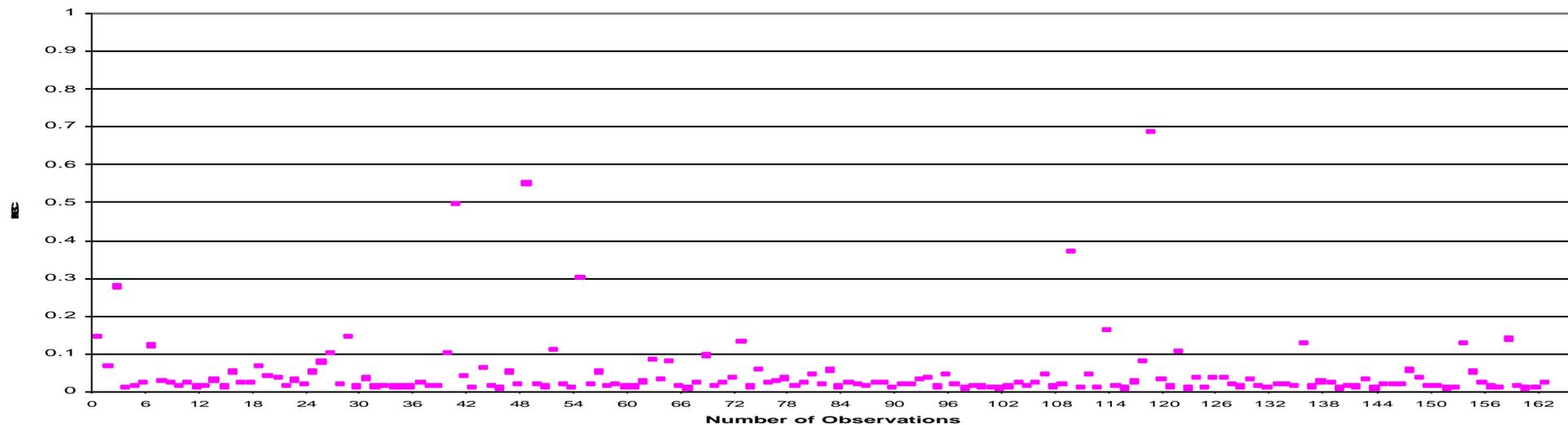
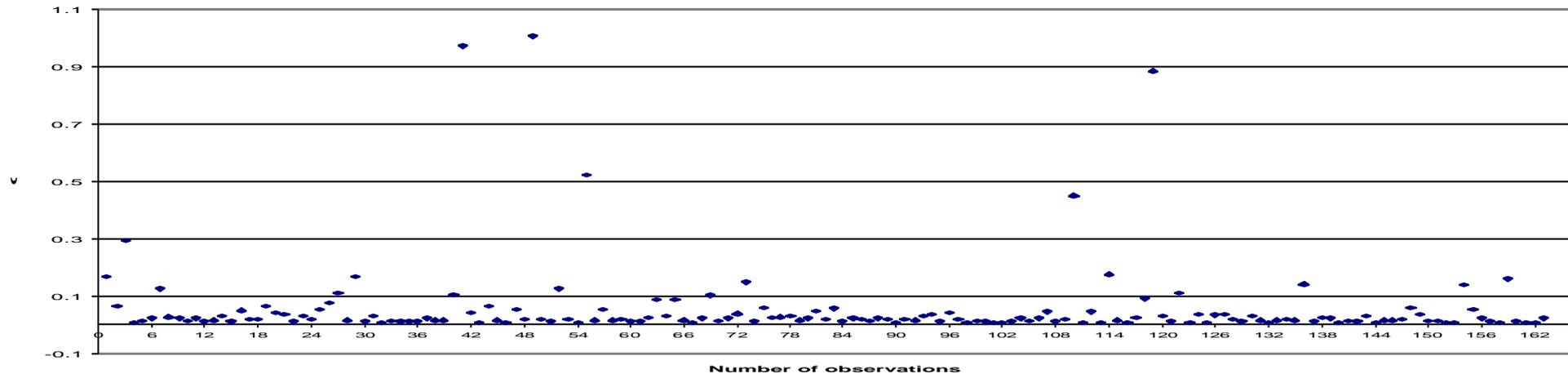
$$\text{var}(CAAR(\mathbf{t}_1, \mathbf{t}_2)) = \mathbf{g}' \left(\frac{1}{N^2} \sum_{i=1}^N \hat{\mathbf{S}}_{e_i}^2 \left(\mathbf{I} + \mathbf{X}_i^* (\mathbf{X}_i' \mathbf{X}_i)^{-1} \mathbf{X}_i^{*'} \right) \right) \mathbf{g} \quad (\text{B.4})$$

and \mathbf{g} is a vector with ones in position \mathbf{t}_1 to \mathbf{t}_2 and zeros in position \mathbf{t}_1 to T_1 and \mathbf{t}_2 to T_2 . $\hat{\mathbf{S}}_{e_i}^2$ is the variance estimate of the error in the ordinary least squares and \mathbf{I} is the identity

matrix with the dimension of $(T_2 - T_1) \times (T_2 - T_1)$ and X_i^* is the market return vector between T_1 and T_2 . Using this parametric test the null hypothesis is that the event has no impact on the returns or the variance. The J_1 statistic is asymptotic standard normal. Assuming identical, independently distributed (IID) returns have some implications. Brown and Warner (1985) pointed out that using daily stock returns imposed several important problems concerning non-normality, non-synchronous trading, and variance estimation. However, using cross-sectional daily excess returns, the mean return will converge to the normal distribution. The variance estimation adjusts for serial dependence, cross-sectional dependence, and stationarity in the event-window (Campbell et al. 1997).

Appendix D: Robustness Test of Observation in the Logit Model

C and CBAR are confidence interval displacement diagnostics that provide scalar measures of the influence of individual observations on the maximum likelihood estimated coefficients. Using a one-step calculation method in which each individual observation is tested shows by re-estimating the coefficient whether or not the parameters of the logit model are heavily influenced by a few observations. DIFDEV and DIFCHISQ are diagnostics for detecting ill-fitted observations. DIFDEV shows the change in deviance when deleting an individual observation. DIFCHISQ shows the changes in the Pearson chi-squared statistics.



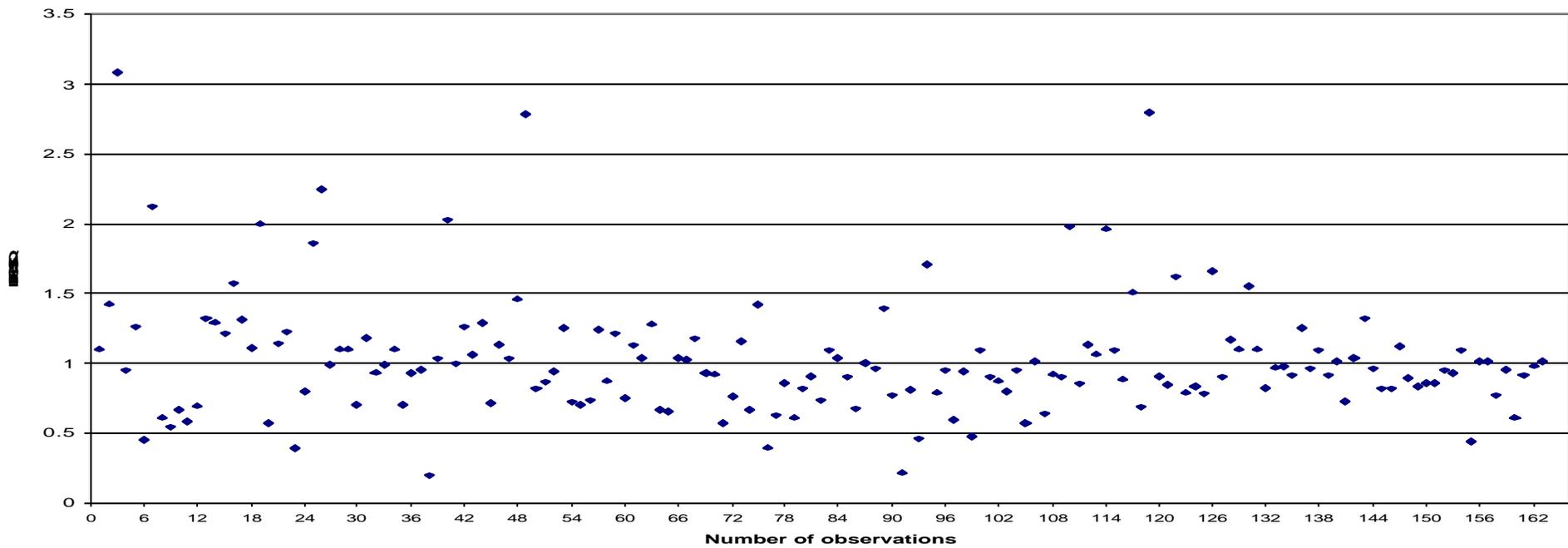
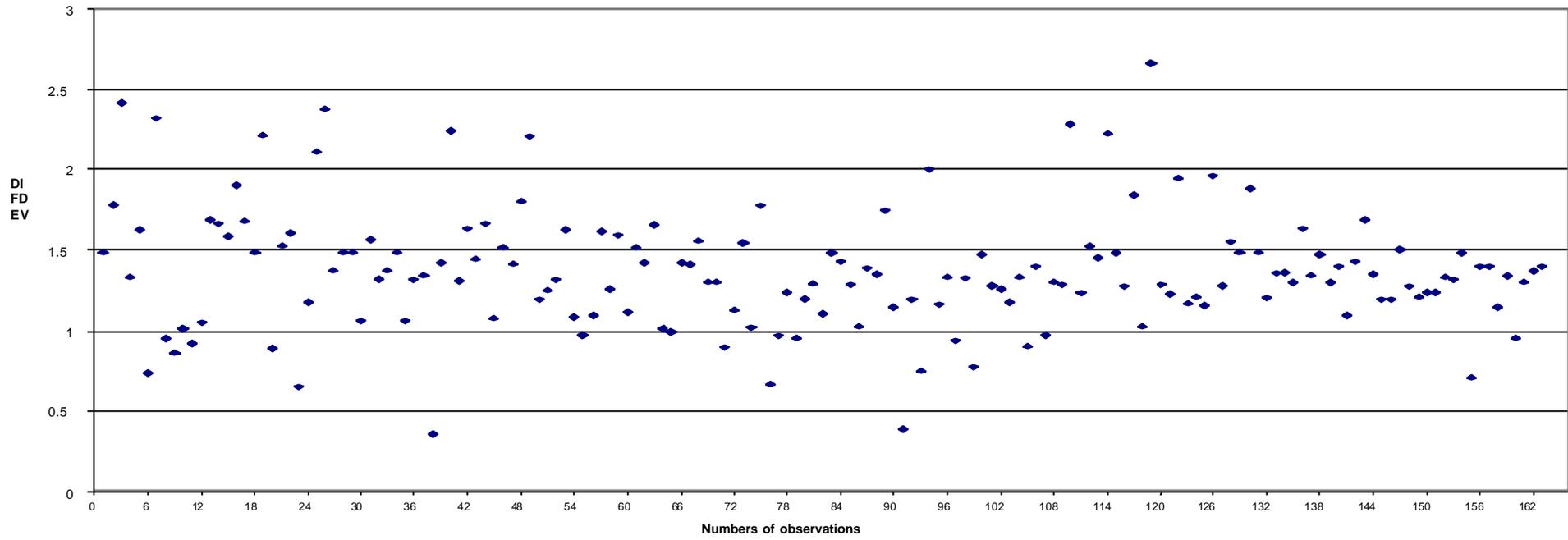


Table I The Frequency Institutional Investors Ownership on Firms and Control Firms and Firms Distribute on Years

The information of management successions is gathered from announcements to the Copenhagen Stock Exchange and reports in Reuters Business Briefing. We record dismissals of chief executive officers. The data include CEO turnovers of Danish firms in the years 1994-1998. Return is the market adjusted stock performance the last six month before the announcement. EPS is the earning per share in the latest annual report. Frequency is the institutional investors' ownership prior to the CEO turnover. p-values for two-tailed test for whether the CEO turnover group's mean equal the mean in the control group.

Panel A: CEO Turnover

Frequency	<u>All firms</u>		<u>Resignations</u>	
	Firms	Control firms	Forced Layoff	Voluntary
0-20%	22	17	10	12
20-40%	29	34	13	16
40-60%	19	17	10	9
60-80%	10	10	5	5
80-100%	1	3	1	0
Total	81	81	39	42

Panel B: Firm Performance Prior to CEO turnover

		Turnover Group	Control Group	Turnover Group	Control Group
Year	N	Return	Return	EPS	EPS
1994	12	-1.26%	5.08%	-13.92	35.79
1995	13	-0.16%	12.03%	15.84	31.34
1996	13	-6.78%	7.96%	6.36	9.98
1997	15	-4.14%	-7.75%	29.53	25.71
1998	28	-11.60%	-0.24%	15.49	25.00
Total	81	-6.08%	2.34%	12.32	25.52

Panel C: p-values for Two-tailed Test for Mean Differences.

Mean	0.0058	0.0193
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Table II Logistic Regressions of CEO Turnovers

The linear logistic model has the form: $Logit(p) = \log\left(\frac{p}{1-p}\right) = \mathbf{a} + \mathbf{b}'\mathbf{x}$, where \mathbf{a} is the intercept parameter, and \mathbf{b} is the vector of slope parameters. \mathbf{x} is a vector of explanatory variables that may affect the probability of a CEO loses his position and $p = Pr(Y=1 | \mathbf{x})$ is the probability modeled. The dependent variable is equal to 1 for management successions and 0 otherwise. The independent variable *Return* is the market adjusted stock market performance the last six month before the announcement. *EPS* is the earning per share in the latest annual report. *PE* is calculated at the time of the announcement. *P/FCF* is the price to the free-cash flow in the year before the resignation. *SIZE* is the natural logarithm to the market capitalization of the outstanding shares. *INSTI* is the institutional investors' ownership in the year divided by (100 – Institutional Investors ownership). *STRAT* is the strategic investors' ownership in the year divided by (100 – Strategic Investors ownership). *AGE* is the CEO age dummy equal to one if the departing CEO is 60 years or older and zero otherwise. t-statistics are shown in parentheses.

Independent Variable	<u>Market Values</u>			<u>All</u>	<u>Book Values</u>		
	1	2	3	4	5	6	7
<i>Constant</i>	-0.098 (-0.28)	-0.069 (-0.09)	-0.289 (-0.07)	-0.347 (-0.09)	0.062 (0.09)	0.032 (0.02)	0.013 (0.03)
<i>Return</i>	-1.867 (-5.67) ^a	-1.823 (-5.27) ^a	-1.828 (-5.28) ^a	-1.812 (-4.79) ^a			
<i>EPS</i>					-0.008 (-3.24) ^a	-0.008 (-3.05) ^a	-0.008 (-2.89) ^a
<i>FCF</i>				-0.009 (-8.45) ^a	-0.008 (-7.47) ^a	-0.009 (-8.29) ^a	-0.009 (-8.33) ^a
<i>PE</i>				-0.001 (-0.03)			0.001 (0.01)
<i>P/FCF</i>				-0.017 (-0.33)			-0.015 (-0.27)
<i>INSTI</i>		-0.052 (-0.11)	-0.051 (-0.11)	-0.042 (-0.06)		-0.064 (-0.16)	-0.057 (-0.13)
<i>STRAT</i>		0.089 (0.08)	0.009 (0.09)	0.037 (0.95)		0.046 (1.42)	0.046 (1.44)
<i>AGE</i>	0.205 (0.30)	0.219 (0.34)	0.215 (0.32)	0.264 (0.45)	0.036 (0.01)	0.091 (0.06)	0.088 (0.01)
<i>SIZE</i>			0.016 (0.04)	0.011 (0.02)			
<i>Log likelihood</i>	-109.83	-109.74	-109.72	-103.73	-105.74	-104.89	-104.76

^{a,b} Statistically significant in 2-tailed tests at the 5% and 10% level, respectively.

Table III Logistic Regressions for Forced Layoffs and Voluntary Resignations

The linear logistic model has the form: $Logit(p) = \log\left(\frac{p}{1-p}\right) = \mathbf{a} + \mathbf{b}'\mathbf{x}$, where \mathbf{a} is the intercept parameter, and \mathbf{b} is the vector of slope parameters. \mathbf{x} is a vector of explanatory variables that may affect the probability of a CEO losing his position and $p = Pr(Y=1 | \mathbf{x})$ is the probability modeled. The dependent variable is equal to 1 for management successions and 0 otherwise. The independent variable *Return* is the market adjusted stock market performance the last six month before the announcement. *EPS* is the earning per share in the latest annual report. *PE* is calculated at the time of the announcement. *P/FCF* is the price to the free-cash flow in the year before the resignation. *SIZE* is the natural logarithm to the market capitalization of the outstanding shares. *INSTI* is the institutional investors' ownership in the year divided by (100 – Institutional Investors ownership). *STRAT* is the strategic investors' ownership in the year divided by (100 – Strategic Investors ownership). *AGE* is the CEO age dummy equal to one if the departing CEO is 60 years or older and zero otherwise. t-statistics are shown in parentheses.

Independent Variable	Forced Layoffs N=39				Voluntary Resignations N=42			
	1	2	3	4	5	6	7	8
<i>Constant</i>	-0.920 (-9.30) ^a	-1.079 (-0.42)	-0.852 (-6.84) ^a	-0.895 (-7.23) ^a	-0.666 (-5.95) ^a	-1.262 (-0.91)	-0.525 (-2.92) ^b	-0.536 (-2.99) ^b
<i>Return</i>	-3.618 (-9.71) ^a	-3.632 (-9.61) ^a			-0.827 (-0.70)	-0.836 (-0.70)		
<i>EPS</i>			-0.011 (-3.59) ^b	-0.012 (-3.60) ^b			-0.006 (-1.26)	-0.006 (-1.08)
<i>FCF</i>			-0.013 (-10.96) ^a	-0.013 (-10.92) ^a			-0.004 (-1.81)	-0.004 (-1.59)
<i>PE</i>				0.004 (0.27)				-0.001 (0.07)
<i>P/FCF</i>				-0.019 (-0.32)				-0.015 (-0.12)
<i>INSTI</i>	0.052 (0.06)	0.053 (0.06)	0.033 (0.03)	0.036 (0.03)	-0.176 (-0.72)	-0.182 (-0.76)	-0.200 (-0.85)	-0.182 (-0.69)
<i>STRAT</i>	0.008 (0.06)	0.008 (0.06)	0.069 (1.47)	0.069 (1.45)	-0.015 (-0.06)	-0.015 (-0.06)	0.019 (0.09)	0.017 (0.07)
<i>AGE</i>	-0.545 (-0.92)	-0.547 (-0.93)	-0.597 (-0.97)	-0.652 (-1.13)	0.656 (2.37)	0.646 (2.29)	0.511 (1.42)	0.524 (1.45)
<i>SIZE</i>		0.012 (0.01)				0.043 (0.21)		
<i>Log Likelihood</i>	-67.40	-67.39	-63.71	-63.42	-78.74	-78.63	-77.30	-77.20

^{a,b} Statistically significant in 2-tailed tests at the 5% and 10% level, respectively.

Table IV Abnormal Returns for Different Event Windows.

The abnormal returns in the event-window around the event date are calculated from the expected return using a market model. The market model is: $R_i = X_i q_i + e_i$, where $R_i = [R_{iTo+1} .. R_{iTl}]'$ is a $(L_i \times 1)$ vector of returns for firm i in the estimation window, $X_i = [1, R_m]$ is a $(L_i \times 2)$ matrix with a vector of ones in the first column and the value-weighted market return vector $R_m = [R_{mTo+1} .. R_{mTl}]'$ in the second column. $q_i = [a_i \ b_i]$ is the (2×1) parameter vector. $e_i = R_i - X_i q_i$ is the $(L_i \times 1)$ vector of abnormal returns in the estimation window. The estimation of the parameter vector, q_i , is obtained by the ordinary least square method and the abnormal return vector for the event window is; $e_i^\circ = R_i^\circ - X_i^\circ q_i$, where $^\circ$ denotes that the vector is from the event window. The cumulative average market model abnormal return is calculated from five days before the event to five days after. The abnormal returns around the announcement of CEO turnovers are calculated for firms on the Copenhagen Stock Exchange between 1994 and 1998. The announcement dates are reported to the Copenhagen Stock Exchange and Reuters Business Briefing. Voluntary resignation is a "natural" CEO turnover, for example retirement. Resignations due to "mutual agreement" are described as forced layoffs. The articles in *Reuters Business Briefing* are used as an indicator of forced layoffs. In addition, the control group of firms, of matching size and industry, is shown separately. t-statistics are in parentheses.

Type	N	Event Window				
		0:0	0:+1	-1:+1	-3:+3	-5:+5
Voluntary Resignations	42	-0.003 (-0.80)	-0.001 (-0.35)	-0.010 (-2.31) ^a	-0.022 (-3.14) ^a	-0.021 (-2.47) ^a
Forced Layoff	39	0.006 (1.66)	0.005 (1.85)	0.011 (2.48) ^a	0.016 (2.41) ^a	0.024 (2.85) ^a
Control Group	81	-0.003 (-0.95)	-0.004 (-0.75)	-0.005 (-0.51)	-0.011 (-0.54)	-0.009 (-0.29)

^{a,b} Statistically significant in 2-tailed tests at the 5% and 10% level, respectively.

Table V Explaining the Share Price Movements

The abnormal returns of CEO turnovers from firms listed on the Copenhagen Stock Exchange are explained using a simple OLS regression. Resignations due to "mutual agreement" are described as forced layoffs. D_{Layoff} is a dummy that is 1 for forced layoff and 0 for voluntary resignations. $INSTI$ and $STRAT$ are the institutional and strategic investors' ownership in the year divided by (100 – Institutional (Strategic) Investors ownership). $SIZE$ is the natural logarithm to the market capitalization of the outstanding shares. $Return$ is the absolute stock market performance the last six month before the announcement. $Return \times D_{Layoff}$ is return times the dummy for forced layoff. The t-statistics are shown in parentheses.

N=81 Dependent Variable	Regression Model		
	1	2	3
D_{Layoff}	0.007 (0.89)	0.011 (1.16)	0.015 (1.67) ^b
$INSTI$			0.012 (0.53)
$STRAT$			-0.013 (-0.81)
$Return/FCF$	0.042 (1.83) ^b	0.001 (0.88)	
$Return/FCF \times D_{Layoff}$	-0.062 (-1.94) ^b	-0.001 (-0.56)	
Intercept	-0.006 (-1.20)	-0.006 (-0.89)	-0.013 (-0.74)
Adj. R ²	4.04%	3.53%	6.65%

^{a,b} Statistically significant in 2-tailed tests at the 5% and 10% level, respectively.

Figure 1 Average Cumulative Abnormal Returns

