

# CEO EMPLOYMENT CONTRACT HORIZON AND MYOPIC BEHAVIOUR

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## Abstract:

This paper studies the effects of horizon in CEO employment contracts on CEO performance. It uses the terms of 1,018 employment contracts to determine the employment time horizon of U.S. CEOs. Firms with shorter CEO contracts trade at a discount to firms with longer contracts. An investment strategy that bought firms with the longest remaining contract horizon and sold firms with the shortest CEO contracts would have earned 9.9% annual abnormal returns during the sample period. CEOs with short-term contracts invest less but exhibit higher profitability than their peers. This is consistent with the argument that short-term oriented CEOs sacrifice long-term investments for short-term value maximization. Short employment contracts also have a *positive* disciplining effect. When CEOs with longer term contracts are up for contract renewal and the probability of termination is high, they overinvest in unproductive or excessively risky projects and thereby destroy firm value by 34% more than CEOs with shortest term contracts in the cross-section.

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## **I. Introduction**

CEOs should maximize the long-term firm value. In reality, however, they might prefer not to and instead increase short-term stock prices at the expense of long-term value. In particular, myopic horizon may lead to suboptimal investment. Myopic managers may forego productive investments in order to boost contemporaneous earnings (Stein, 1989). They may, however, also overinvest into unproductive projects in order to signal that they have investment opportunities (Bebchuk and Stole, 1993), in order to make themselves indispensable (Noe and Rebbello, 1997), or in order to take excessive risks (Chevalier and Ellison, 1999). On the first glance, underinvestment seems to be the more severe problem because foregone investment opportunities are less visible than unproductive investment opportunities. It is easier to prevent a CEO to close a senseless acquisition than to encourage him to do better research. While underinvestment had been the focus of the academic literature, a recent public discussion has evolved around myopic excessive risk-taking. Risky, unproductive projects may be more visible and disputed ex-ante, but they may also lead to more severe and rapid value destruction than R&D cutbacks. Whether and in which circumstances over- or underinvestment dominates, is the topic of this paper.

A new dataset of 1,018 CEO employment contracts allows us to identify and quantify the impact of myopic CEO behaviour. First, we can track the investment behaviour of CEOs over the course of their tenure and observe if they change their investment policy in the year before their “election”, the date of the contract expiration or renewal. Second, employment contracts vary in their length. Comparing the performance of short-term and long-term horizon CEO enables us to assess the overall impact of contract horizon - and, therefore, of myopia - on investment and firm value. In particular, we can distinguish CEOs with fixed contract length

from those with “at will” contracts. At will contracts allow the firm to terminate CEO employment at any date, with or without cause, without additional cost. That is, CEOs under at will employment have an indefinitely short horizon. They also face a permanent dismissal threat that may prevent them from grossly unproductive behaviour.

We find evidence for both under- and overinvestment. In the last year before election, CEOs with fixed term contracts invest significantly more than usual and make more acquisitions (with lower announcement returns). Because at will contracts impose a constant disciplining dismissal threat, we do not expect CEOs with at will contracts to make excessively risky (or in other terms unproductive) investments. On the contrary, we expect that the underinvestment problem dominates the overinvestment problem for CEOs at will. Indeed, we find that CEOs with at will contracts invest less than their peers, but exhibit higher profitability than other firms. We control for eventual bias from the selection of at will contracts. In fact, neither investment nor profitability seems to be relevant in the choice of contract length.

In order to quantify the effects of myopic behaviour, we examine differences in firm value for CEOs with different horizons. We identify a deep discount for firms with short-horizon CEO contracts. We also find that patterns of CEO behaviour react to the decline of contract horizon over time. The Tobin’s Q is significantly lower in the last year before CEO contracts expire than usual – an effect stronger than the one of contracts at will. Overall, the results suggest that myopia leads to both value destroying over- and underinvestment. When CEOs have a short-term contract, they may reduce firm value by foregoing investments that only become successful much later. On the other side, the constant dismissal threat disciplines short-term horizon CEOs and keeps them from excessive risk-taking and other unproductive projects. When

CEOs have only one term left, however, they overinvest in unproductive, potentially overly risky projects.

This paper contributes to the literature of management myopia. The theoretical literature has analyzed the phenomenon of short-term management behaviour and its effects (Narayanan, 1985; Stein, 1988 and 1989), provided explanations (Laffont and Tirole, 1987; Gray, 1976; Dye, 1985; Harris and Holmstrom, 1987; Noe and Rebbello, 1997; Bebchuk and Stole, 1993; Bolton, Scheinkman and Xiong, 2006) and suggested methods to alleviate the problem (Gibbons and Murphy, 1992; Dahiya and Yermack, 2008). Empirical literature on management horizon, however, is scarce. The main challenge to the empirical literature on horizon problem is the question how to draw the line between short- and long-term behaviour. When are CEOs short-term oriented, versus long-term oriented? While most models use two periods to distinguish short- and long-term behaviour, an empiricist has to define in which years she should look for the short-term stock price rise and in which others for the long-term fall.

Previous empirical literature has developed two methods to examine horizon problems. The first method involves an explicit, more or less exogenous date that marks a CEO's horizon, such as retirement (Gibbons and Murphy, 1992), investment stages (Baker, 2000), or first years in office (Kaplan and Weisbach, 1992). The second method focuses on the effectiveness of horizon enhancing provisions such as restricted stock, non-vested options and explicit long-term performance plans (see, for example, Kole, 1997; Pasternack and Rosenberg, 2003; Chen, 2004; Sautner and Weber, 2006; and Dahiya and Yermack, 2008). This dataset combines the advantages of both approaches. First, it can track CEO behaviour across his term and identify changes in behaviour around contract expiration dates. That is, it provides an exogenous change in CEO horizon and variation within both firms and CEOs. The exogeneous horizon variable

allows us to make much more general conclusions than events such as retirement or investment stages. Furthermore, within-CEO variation allows us to track the effects of horizon changes more precisely than cross-sectional variation of compensation plans can. Finally, we can assess the performance of differing contract terms. This allows an analysis of the overall impact of contract length on firm value.

Companies only recently have started to publish CEO employment contract terms, and they are far from completely available. CEO employment contracts have been introduced to the social sciences by Schwab and Thomas (2005) and Gillan, Hartzell, and Parrino (2009). This is the third effort to use this set of information that is still far from complete but fairly representative of average U.S. firms. We hope to extend our analysis as time allows us to access more contracts.

The remainder of the paper is organized as follows. Section II explores the myopia problem in greater detail and develops testable hypotheses. Section III describes the data, and section IV presents the empirical results. Section V concludes.

## **II. Hypotheses**

Myopia problems lead to actions that are of advantage in the near term but destroy long-term firm value. They arise when there is information asymmetry between the management and shareholders. Since shareholders cannot fully assess the value of investment opportunities and management forecasts are not always credible, they have to rely on information about current firm performance to estimate firm value and assess the manager's skills. Under perfect contracting, the manager is incentivized to maximize firm value, and horizon should not matter.

In reality, however, the manager's horizon may differ from the optimal investment horizon. In particular, the manager may want to make his performance seem more valuable in the short-term - even if at the expense of long-term firm value.

“Electoral” models are well known in the political sciences. Opportunistic electoral models argue that just before elections, incumbent presidents have an incentive for expansionary politics at the expense of long-term inflation and budget deficits (Nordhaus, 1975, and Lindbeck, 1976). The evidence of fiscal spending in developed countries shows that incumbents indeed collect less taxes and spend more in election years (Alesina, Roubini and Cohen 1997). Note, however, that partisan agendas and differing political landscapes across countries make it difficult to make strong empirical conclusions on most fiscal parameters.

The business literature describes several settings where short-term managerial horizon harms firm value. In particular, underinvestment into productive projects (Stein, 1989), overinvestment into unproductive projects (Bebchuk and Stole, 1993; Noe and Rebello, 1997), sales discounts (Blattberg and Neslin, 1989) and earnings manipulation (Armstrong, Jagolinzer and Larcker, 2008) can increase short-term stock returns at the expense of long-term firm value. The finance literature has focused on investment distortions. Stein (1988) introduces a model for underinvestment: Under information asymmetry between the stock market and the management, a CEO can send costly signals that make the market overestimate his skills or firm performance. In particular, he can sell assets today although selling them in the next period could yield more returns. As a consequence, earnings today rise, and earnings in the next periods fall by a higher amount, reducing overall firm value. In this model, the market anticipates such behaviour and interprets the absence of it as a signal for bad performance (in this case, less assets available for sale).

There are several possible explanations for such behaviour. In Stein (1988), the manager faces an immediate takeover threat that could lead to his dismissal. Because he wants to prevent the takeover, he tries to make his current performance look as good as possible. In Narayanan (1985), the manager wants to increase his reputation early on because his wage rises with reputation. In Stein (1989), the manager wants to sell some of his stock today. In Brandenburger and Polak (1996), the market itself has developed a taste for short-term oriented projects. In Gibbons and Murphy (1992), the manager is close to retirement.

This paper focuses on one particular determinant of CEO horizon: The expiration of CEO employment contracts. At the expiration of employment contracts, the board can replace the CEO at a much lower cost than at any other time. The likelihood that a board replaces an incumbent CEO depends on how it predicts performance under this CEO vs. other candidates. If the CEO wants to renew his contract, however, his forecasts for firm performance are not necessarily credible. Therefore, the board is likely to use current performance as an indicator for CEO skills. If a CEO wants to increase the probability of his re-election, he thus may prefer actions that improve performance for the period just before contract expiration to actions that are value maximizing for any horizon thereafter. Because he will only be re-elected with a certain probability, potential costs of such actions are less important for him than for the firm.

The contract horizon motivation for short-term CEO behaviour is not exclusive to the other circumstances mentioned. Contract horizon has one advantage for empirical work, however: it varies across time and across firms. This feature yields distinctive empirical predictions for myopic behaviour. The signaling argument predicts that CEOs with a short (remaining) contract horizon underinvest and use the means saved for increasing earnings. If this is valid, this should translate in unusually high earnings and low investment spending in periods

just before contract expiration. Over time, such behaviour should also result into a lower average firm value for CEOs with shorter term contracts. Note that not all CEOs need to engage in such actions. If the probability of contract renewal is high enough, CEOs do not need to waste money in costly signals. On contrary, good CEOs should prefer to invest into long-term projects because they increase their own value long-term, if not via expected wages, than at least by increasing their chances at later election rounds.

Underinvestment is not the only method of value destruction that could seem valuable to myopic CEOs. Bebchuk and Stole (1993) argue that the CEO might, in another informational setting, want to overinvest when only he knows that the projects are unproductive. In their model, the public can observe the level of investment. When shareholders are not perfectly informed about the productivity of investments, CEOs may want to invest in unproductive projects to signal that he has lucrative investment opportunities. Chevalier and Ellison (1999) describe excessive risk-taking in the context of mutual fund managers. They find that in the last quarter before their annual evaluation, mutual fund managers with higher career concerns take riskier positions than in the rest of the year. According to the argument of Noe and Rebello (1997), boards do not want to change managers in the middle of complex long-term projects. Therefore, managers can increase their probability of re-election by making themselves indispensable with large projects.

The above three arguments suggest that myopic CEOs may have an incentive to overinvest rather than to underinvest. Overinvestment seems harder to implement than underinvestment, however. Underinvestment may only become visible when R&D expenses are published at the end of the year. On the contrary, shareholders and the board observe when CEOs are planning large investments. Now note that CEOs with at will contracts can be dismissed

without additional cost at any time. Therefore, it is much harder for a CEO with a contract at will to succeed implementing a large, unproductive investment. This allows us to distinguish over- from underinvestment effects. While CEOs with expiring contracts and CEOs at will have similar signaling and underinvestment motives, they differ in the ease of implementing overinvestment. Therefore, we expect CEOs with contracts at will to be less likely to overinvest than CEOs with fixed term contracts. With other words, we expect that CEOs with fixed term contracts will overinvest in their election years. Note that we have to limit the comparison to CEOs in their last year to isolate the under- and overinvestment effects. Because we expect CEOs at will to be subject to the underinvestment problem, we cannot compare them directly to non-election year CEOs with fixed length contracts. Note that direct measures of excessive risk taking and project productivity are difficult to employ in our setting. Usually, the finance literature uses variables such as stock price volatilities or analyst forecast dispersions to measure risk-taking. It is hard, however, to distinguish excessive risk-taking from succession speculation.

Now consider some alternative arguments. One might argue that CEOs with different talent also have different outside employment options. Finding another position after contract termination is easier for more talented CEOs. Therefore, talented CEOs have less incentive to underinvest. Note that this argument assumes that outside employment options are different to the current firm. When all firms in the world are created equal and the information set of other boards is equal to the current board, the whole world learns in the same way about the CEO. Therefore, outside options are a direct function of the current firm value. Given a constant search and re-contracting cost, we can think of the value of an outside option as a constant fraction of the expected benefits under contract renewal. That is, well-performing CEOs have less incentive to signal. This is consistent with the predictions laid out above. Well-performing CEOs have less

incentive to signal in general because they have a higher probability of contract renewal. This effect should not differ across contracts with different contract length.

Signaling can start even before the contract. If a CEO knows at the time of the negotiations of his superior talent and anticipates a low probability of getting fired, he can send a signal of his quality by opting for a contract with a shorter horizon. This is the argument of Cantor (1990) or Aghion and Bolton (1987). In their models, high quality contractors who have a lower expected cost of re-contracting demand shorter contracts in order to send a signal about their quality. The signal is credible because short-term contracts are too costly for low quality contractors. Low quality contractors prefer long-term contracts because they have both a higher probability of contract termination and trouble finding reemployment in case of termination.

In the context of this paper, the company's contract horizon choice does not only depend on the perceived CEO quality. The attractiveness of a short-term vs. a long-term contract depends on the trade-off between the cost of under- and overinvestment. Short-term contracts may alleviate the overinvestment problem, but they are more prone for underinvestment problems. It remains an empirical question to assess which effect is stronger. If short-term contracts are on average costlier than long-term contracts, companies may be reluctant to choose candidates who demand short-term contracts. They may also offer lower compensation for short-term contracts, making them less attractive. On the other side, long-term contracts may allow a CEO more means of manipulation because they do not impose a constant threat of dismissal. This may add to the attractiveness of long-term contracts for CEOs.

Overall, this results in three horizon effects to be confirmed by the data. To the favour of long-term horizon contracts, the underinvestment argument predicts that CEOs under short-term

horizon in general invest less, underperform in terms of stock returns, - and report higher contemporaneous earnings. To the favour of short-term horizon contracts, the overinvestment arguments predict that CEOs in the last year of their long-term horizon contract invest more and underperform compared to CEOs in the beginning of their long-term horizon contract or under an at will contract. Finally, the contract choice signaling argument predicts that CEOs with short-term perform better - despite underinvestment - than CEOs with long-term horizon contracts.

### **III. Data**

We use a sample of employment terms of contracts or agreements between U.S. based firms and their CEOs. For simplicity, we will refer to both as contracts. In the U.S., CEO contract terms have been published on a larger scale since 2004, when SEC first requested firms to file all material contracts with CEOs or amendments thereof. In 2006, the SEC revised the regulation and since then has required firms to file a summary of the contract or the amendment instead, removing the requirement to file the document as an exhibit. The filings are difficult to obtain because they do not have to be included in the statements sent to shareholders, and their filing date is independent of other statements or the hiring date (see Schwab and Thomas, 2005 for a more extensive discussion). Furthermore, not all CEOs sign explicit employment contracts: Gillan, Hartzell and Parrino (2009) report that fewer than half of the CEOs of S&P 500 firms do. We follow Schwab and Thomas (2005) as well as Gillan, Hartzell and Parrino (2009) and collect contracts and descriptions of terms from The Corporate Library as well as SEC filings which we search extensively.

We start with a sample of 4,610 employment contracts or summaries of employment terms. To be included in this sample, the document must explicitly mention the date on which the employment terms become effective as well as either its expiration date, the length of the agreement, or that employment is at will. The majority of the sample documents are explicit executive employment contracts or a summary of employment terms. Seven percent of the documents are explicit retention or renewal agreements. Because they contain the terms of the original agreement as well as the renewal terms, we can recover the terms of both agreements for these CEO employment relationships after verifying in BoardEx that the CEO was indeed employed in the older term. A smaller part of the sample - less than 10% of the documents - are not explicit employment contracts or summaries of employment terms, but agreements that have been negotiated upon a change in control, compensation agreements that contain the original contract terms, or offer letters that have been confirmed by the CEO. Of these, we exclude agreements that are only applicable upon a change in control or separation of service and offers that were not accepted. In total, this procedure leads to the discard of 3,592 contracts that do not contain sufficient information or are not yet applicable. For this reason, we cannot claim that this sample is comprehensive of all existing explicit contracts, as opposed to Gillan, Hartzell and Parrino (2009) who limit their search to contracts of S&P 500 firms in the year 2000.

Panel A of table 1 shows a breakdown of the sample by year. The sample contains 1,018 contracts between 1992 and 2008, of which most are dated between 2005 and 2007 when publishing employment contracts became more common practice. The contracts were made by 915 firms: We obtain one single contract for 820 of the sample firms, two contracts for 90 firms and over two for 5 firms.

This procedure obtains a sample that is fairly similar to average COMPUSTAT firms in the sample period. Panel B of table 1 summarizes the characteristics of the sample. The average firm size in the sample is 1,345 million USD, comparable with the average COMPUSTAT 1992-2008 firm size of 1,136 million USD. It is also comparable to the average COMPUSTAT firm in terms of profitability, leverage, and market-to-book ratios. Return on assets ratios are on average -7.1% for the sample and -6.0% for the COMPUSTAT firms. Debt to assets ratios are on average 43.49% for the sample and 45.01% for the COMPUSTAT firms. Finally, market-to-book ratios are on average 2.60 for the sample, versus 2.62 for the COMPUSTAT firms.

The contract characteristics are comparable to the samples of Gillan, Hartzell and Parrino (2009) or Schwab and Thomas (2005). Gillan, Hartzell and Parrino (2009) describe a sample of 184 explicit contracts for S&P500 companies that were in place in 2000. Schwab and Thomas (2005) use a sample of 375 contracts starting between 1984 and 2003. See Panel C of table 1 for a summary of CEO and governance characteristics.

We count the length of contracts as the number of years between the start and expiration year and report a breakdown of the sample by contract length in Panel D of table 1. For at will contracts, the length hence equals zero. Contracts can allow for renewals under specified conditions. We denote the length to the first renewal date or the expiration date as contract duration. About half of the sample contracts are at will (54%). At will contracts become more popular after 2003, the year which marks the end of the Schwab and Thomas (2005) sample. Before 2004, at will contracts constitute 26% of the sample, more comparable with the 15% Schwab and Thomas (2005) find. At will contracts were not popular in 2000, the year of the Gillan, Hartzell and Parrino (2009) sample: Out of the 40 contracts starting in 2000, only 6 are at will, or 15%. This is comparable with the 13% at will contracts of the Gillan, Hartzell and

Parrino (2009) sample. Almost all of the contracts with explicit expiration terms have a length between one and five years. After the at will contract, a three-year contract is the most (21%) common, as it is in the Schwab and Thomas (2005) sample. Accounting for the first possible renewal date, the duration is most commonly below (65% including the at will contracts) or equal to one year (31%). Evergreens, contracts that have an explicit term but are implicitly renewed every day, constitute 0.3% of the sample. We classify them as at will contracts although they have a specified term.

We track the performance of the sample CEOs up to one year after expiration as long as they do not leave office. In this fashion, the 1,018 contracts result into 3,610 firm-years combinations for which we have data on both employment terms and performance. Table 2 summarizes summary statistics for firm-year combinations. Of the 3,610 years, 53% are under the regime of an at will agreement. This means that the 464 at-will CEO employment relationships in the sample remain valid for four years on average. The remaining 47% are years in which a CEO has an explicit termination date. This means the 554 CEOs with explicit termination dates remain in office for on average three years, similar to the original contract length agreed upon. Of the firm-years under contracts with explicit termination dates, 224, or 13%, are election firm-years, years directly before the scheduled contract renewal or expiration.

## **IV. Empirical results**

### **IV.1 The choice of contract terms**

This paper focuses on the relationship between contract length and performance rather than on the choice of contract length. Nevertheless, we would like to ensure that the findings are

not driven by the selection of firms into certain contract types rather than subsequent performance. Therefore, this section is devoted to the choice of contract terms.

Gillan, Hartzell and Parrino (2009) discuss the choice of contract length. In particular, they show that firms choose longer contract durations if they operate in a less risky environment, have lower stock returns, or are of greater size. They argue that companies which already operate in an uncertain environment prefer to limit potential costs of breaking a contract by agreeing on a short-term contract. This argument includes poorly performing firms with a high probability of board turnover, such as firms facing bankruptcy or takeovers. According to Gillan, Hartzell and Parrino, this argument applies to both the company's and the CEO's perspective. For both parties, it is costly to alter or break contracts, because both parties lay out up-front investments into their relationship.

Panel B of table 1 summarizes the sample firm characteristics of the year prior to contracting separately for firms with and without at will employment. First, note that the data is consistent with the argument and findings of Gillan, Hartzell and Parrino (2009). Companies that issue at will contracts are smaller ( $t = 5.24$ ), operate in industries with significantly higher sales volatility ( $t = 3.08$ ) and lower survival rates ( $t = 3.13$ ), all indicators for higher contracting risk. This is also evident in a concentration of more than 10% of all will firms in pharmaceutical (70 at will contracts) and software (58 at will contracts) industries. Note that this sample also contains 32 non-at will contracts in the pharmaceutical and 30 in the software industry. Of the non-at will contracts, we find a concentration over 10% only in the banking industry: 55 contracts with explicit length are between banks and their CEOs, vs. 40 at will contracts.

The main variables of interest, Tobin's Q, stock returns, capital expenditure over assets, and R&D expenditure over assets, are not significantly different between firms with at will and explicitly termed contracts ( $t = 0.37$  for Q,  $0.45$  for returns,  $0.33$  for capital expenditure over assets, and  $1.57$  for R&D expenses over assets). The other variable of interest, return on assets, shows significant differences - but to the direction opposed to the one predicted by the model for subsequent performance. Firms that issue at will contracts are less profitable than firms that issue contracts with explicit terms ( $t = 2.11$ ). Because this paper predicts higher subsequent earnings for firms with at will contracts (they are expected to engage more in signaling), the selection bias can only work against the model's predictions. Note that the Gillan, Hartzell and Parrino (2009) argument also predicts that less profitable firms issue more at will contracts. This is consistent with the findings in this sample.

Panel C shows the CEO and governance characteristics sorted by contract type. We find only one significant difference between at will and non-at will CEOs. The fraction of CEOs who also operate as chairman is significantly higher among the CEOs with explicit contract terms ( $t = 2.56$ ). Because joint CEO-Chairmans tend to have more bargaining power, this indicates that the CEO themselves may prefer contracts with longer terms. The model provides two potential reasons for such a motivation: First, CEOs may care about firm value maximization and therefore avoid short-term contracts that induce them to waste money on signals. Second, short-term contracts impose more discipline and leave less room for private benefits. In the same spirit, one could also interpret the coincidence of more joint office holders and long-term contracts as two indications of a taste for private benefits.

Table 3 reports the results of a Probit regression in the fashion of Gillan, Hartzell and Parrino (2009). The results are similar to the univariate patterns described above. Smaller firms

and firms in industries with a lower survival rates are more likely to issues a CEO contract at will. As discussed above, this is consistent with the argument of Gillan, Hartzell and Parrino (2009) that firms prefer shorter horizons when they operate in a risky environment. The relationship between the choice of at will contracts and performance measures such as ROA or Tobin's Q is not significant in our sample.

## **IV.2 Contract horizon and operational performance**

### *IV.2.1 Investment*

In this section, we explore the investment effects of managerial horizon. According to the underinvestment argument, CEOs with a shorter horizon have an incentive to forego potentially lucrative long-term investments (see Stein, 1988 and 1989; Froot, Perold and Stein, 1992; Narayanan, 1985 and 1996; Wahal and McConnell, 2000; and Shleifer and Vishny, 1990). According to the overinvestment argument, however, CEOs with a shorter horizon may instead have an incentive to take more excessively risky or unproductive investments (Bebchuk and Stole, 1993; Noe and Rebello, 1997; Chevalier and Ellison, 1999). We regress investment spending on managerial horizon variables in order to measure if these concerns are valid and which of them dominates. If short horizon leads to underinvestment, we expect both CEOs with expiring and at will contracts to invest less than their peers. If career concerns encourage CEOs in election years to take on risky or unproductive projects, we expect investments to be higher in election years than usual. Because at will contracts impose a constant dismissal threat and large unproductive investments are visible before their commencement, we expect that CEOs with at

will contracts are less subject to overinvestment problems than fixed term CEOs in their election year.

Following the methodology of Polk and Sapienza (2003), we use the ratio of capital expenditures over PP&E as our main measure of investment over capital. We regress investment spending on our horizon variables, controlling for variables which have been shown to be relevant for investment in the previous literature. We repeat all regressions with two alternative measures of investment, capital expenditure over the assets, and R&D expenditure over assets, measures used, among others by Baker, Stein and Wurgler (2003), Fazzari et al. (1988), or Wahal and McConnell (2000). The above mentioned literature shows that a number of variables affect investment and have to be controlled for. Polk and Sapienza (2003) argue that the market-to-book ratio can measure investment opportunities, but also mispricing, thus changing the price of invested capital. They also show that discretionary accruals, another measure of mispricing of capital, significantly affect investment controlling for the market-to-book ratio. They motivate the use of accruals as a measure of mispricing with the evidence that firms with high discretionary accruals have low stock returns in the future (see Teoh, Welch, and Wong, 1998). Accruals are the difference between earnings and cash flow. Following the methodology of Jones (1991), we construct discretionary accruals as a residual of regressing accruals against the average industry sales growth as well as property, plant, and equipment (PP&E) and take the difference. See the accruals section below for a more detailed discussion. Baker, Stein and Wurgler (2003) point out that firms that are more dependent on equity adjust their investment behaviour to the price of equity. They measure equity dependence with the index first developed by Kaplan and Zingales (1997), the “KZ index”. We use the five-variable version of Baker, Stein and Wurgler (2003), who construct it the following way:

$$KZ_{it} = -1.002 CF_{it}/A_{it-1} - 39.368 DIV_{it}/A_{it-1} - 1.315 C_{it}/A_{it-1} + 3.139 LEV_{it} + 0.283 Q_{it},$$

Where  $CF_{it}/A_{it-1}$  is cash flow over lagged assets,  $DIV_{it}/A_{it-1}$  is cash dividends over assets,  $C_{it}/A_{it-1}$  is cash balances over assets,  $LEV_{it}$  is leverage, and  $Q$  is the market-to-book ratio as described earlier. To capture the cost of raising capital in the market, we include the total number of seasoned equity issues. We also control for the cost and availability of debt. Myers (1977) shows that existing leverage can lead to underinvestment. Graham (2000) argues that more profitable, larger firms and firms with more tangible assets have less costly access to debt although they do not always lever up as much as they could. We control for profitability with return on assets, for size with the log of assets, and for tangibility with  $1 -$  the ratio of intangible assets over total assets. Wahal and McConnell (2000) show that institutional investors encourage firms to invest more. Following their methodology, we obtain the fraction of institutional investors from the compulsory filings under section 13F of the Securities and Exchange Act of 1934 (rule 13F-1), as compiled by Thomson. As above, we control for the governance index of Gompers, Ishii and Metrick (2003), Chairman-CEOs and CEO age. In the regressions where we exclude CEOs at will, we control for the selection with Heckman's Lambda as described above.

Table 4 summarizes the results. At will CEOs invest significantly less than their peers in terms of capital expenditures over assets ( $t = -2.08$ ). If the ratio of capital expenditures over assets is at its mean at 5% and all other variables equal, an at will CEO invests on average 10% less. This effect is not significant for CAPEX over PP&E ( $t = -1.57$ ) or R&D expenditure ( $t = -0.46$ ). Across all specifications, regressions of R&D expenditure are less significant because of missing data in this variable.

For CEOs with explicit contract expiration dates, investment behaviour changes over time. First, note that the number of remaining years is not relevant for investment. That is, there is no evidence that the investment horizon correlates with the CEO contract horizon. Investment is significantly related to another variable, however: CEOs invest significantly more in election years, by 2.5% in terms of CAPEX over PP&E ( $t = 1.93$ ) and by 1.2% in terms of CAPEX over assets ( $t = 2.03$ ). With both variables at their mean and all else equal, that means CEO invest 18% more than average in terms of CAPEX over PP&E and 25% more than average in terms of CAPEX over assets.

Most of our control variables affect investment in the predicted way. Firms invest more when their market-to-book ratio is high, equity issuance is common in the market, their assets are more tangible, and when the executive is younger. Inconclusive are the relationships between investment and accruals, leverage, and size. The coefficients of these variables are rather small, albeit sometimes significant, and change their signs. Note that our sample size is much smaller than the panel regressions of the literature sized before. While the at will regressions with a sample size of 1417 are able to explain 15-22% of cross-sectional variation, roughly half of  $R^2$  of Polk and Sapienza (2003), who use over 30,000 observations, the regressions excluding at will contracts only result in an  $R^2$  of around 8%.

Our evidence supports both the over- and underinvestment hypothesis. While at will CEOs invest less than their peers, election year CEOs invest more than they usually do. That is, at will CEOs seem to suffer more from underinvestment problems, while election year CEOs seem to be more prone to overinvest. In particular, our sample CEOs make more acquisitions before elections. In the year preceding election, 42% CEOs acquire another company, while 34% do so in non-election years. Note, however, that these numbers can only serve as an inference.

The difference is not significant because of the small total number of acquisitions in our sample. Stock prices react more negatively to acquisitions made in election years. In a window from 41 days before to 126 days after the acquisition announcement, stock prices decrease on average by 12.26% in election years and by 5.33% in non-election years. Again, differences are not statistically significant because of the small sample.

#### *IV.2.2 Earnings*

Why do CEOs with at-will contracts invest less than their peers? According to the Stein (1989) model, they forego long-term investments because they want to show shareholders that they are profitable. That is, if at will CEOs have an underinvestment problem, they should not only underinvest, but also be more profitable.

We measure earnings as net income over assets (ROA) and regress ROA on the previously defined measures of contract horizon. As before, we control for a variety of company characteristics that have been shown to impact earnings. Firms with a higher value should also have higher earnings. Therefore, we control for the market-to-book ratio. Larger firms have more market power and therefore should be more profitable. We control for firm size by including the log of book assets. R&D intensive firms may expect higher earnings to a later time. We include R&D expenses as well as a dummy that marks missing values. Competition may reduce the profitability in an industry. We control for industry structure with the Herfindahl index. Finally, we control for the governance provisions mentioned above: The Gompers, Ishii and Metrick (2003) index, a dummy that equals one for CEOs who are also Chairman of the same firm, and

the executive's age. As before, we include the Heckman's Lambda from the contract selection stage when we conduct regressions without at will contracts.

Results are shown in table 5. The coefficient on the at will dummy is positive and statistically significant ( $t = 4.40$ ). All else equal, a firm with a CEO at will earns roughly a 3% more than the average firm. The effect is strong given that these companies were on average less profitable at the time of contracting. We do not, however, find any significant relationship within the term of CEOs with explicit contract terms. If CEOs send signals in the election year, they do not do so with earnings - or they at least do not succeed.

The control variables affect earnings in the predicted manner. Firms with a higher Q, larger firms, and firms in more concentrated industries are more profitable. The governance index is negatively associated with earnings for firms. The governance index is inverse to governance quality, that is, firms with more shareholder friendly governance provisions have higher earnings. Note that this effect is not significant if we exclude the firms with at will CEOs. This suggests that governance provisions add to the at will CEO's performance pressure. Finally, older CEOs are associated with higher ROAs. This is consistent with the argument that CEOs gain experience and skill with age.

Overall, we find strong support for the underinvestment problem. CEOs with a contract at will consistently report higher earnings. For CEOs with an explicit contract term, the pressure does not show in the earnings. Even in the election year, we do not find evidence for higher earnings. If these CEOs tried to send a signal, they did not succeed. On contrary, the result is more consistent with the argument that CEOs engage in value destroying behaviour in their last year.

### *IV.2.3 Sales*

Myopia problems are not exclusive to investment decisions. Companies can increase sales by adopting short-term oriented marketing measures. While short-term oriented sales promotion by discounts can have a large immediate effect on current revenues, they can deteriorate long-term brand value and therefore revenues (Blattberg and Levin, 1989). If myopia problems are present, we expect that sales are higher for CEOs with short horizons.

We regress the year-on-year growth in sales on the horizon variables as well as a set of control variables. First, we control for general firm characteristics such as Q and the size of the firm. We then include R&D expenditure over assets (and a dummy variable to denote missing variables) because high technology products show different sales patterns in time. Furthermore, we include the Herfindahl index which measures the degree of competition in the market. As above, we control for the Gompers, Ishii and Metrick (2003) index, Chairman-CEOs, and CEO age. The specifications which exclude at will contracts control for selection bias.

The results are reported in table 6. Sales growth is higher in companies with at will CEOs ( $t = 2.00$ ) and lower in companies with longer horizon CEOs ( $t = -2.42$ ). When fewer years remain until expiration, sales grows faster year-on-year. Sales growth is positively associated with the year before election ( $t = 2.30$ ). In the election year, sales increases by half of last year's sales stronger than in non-election years. Note that this effect does not hold if we include renewal dates. That is, sales growth seems to be more connected to a "last-year" effect than to a signaling effect. This is consistent with the finding that CEOs at will do not exhibit more sales growth than other CEOs.

Short-term sales measures can be an attempt in the spirit of window dressing. Depending on the product in question, short-term sales measures can backfire quite fast, probably faster than the negative effects of underinvestment which can take years to materialize. It is consistent with this notion that we observe more abnormal sales growth in election years than by at will CEOs. Overall, the evidence of short-term sales measures is not robust to different measures of election and therefore to be treated as an indication only.

### **IV.3 Contract horizon and firm value**

Are the unusual investment patterns in election years and for at will CEOs merely cyclic distortions or do they have a negative effect on firm value, as argued by the myopia literature? This section discusses the relationship between contract horizon and firm value. If the underinvestment effect of CEO myopia is relevant for firm value, we expect to find a discount on firms with shorter CEO contracts. Furthermore, if overinvestment destroys firm value, we expect to find that firm value declines in election years.

In order to establish a relationship between contract horizon and firm value, we regress Tobin's Q on contract characteristics, controlling for variables which have been shown to affect firm value in previous studies. Using Tobin's Q as a measure of firm value follows the tradition of Demsetz and Lehn (1985), Morck, Shleifer, and Vishny (1988), Lang and Stulz (1994); Yermack (1996), Loderer and Peyer (2002) and Gompers, Ishii, and Metrick (2003). we construct Tobin's Q according to the method of Kaplan and Zingales (1997) and Gompers, Ishii, and Metrick (2003) and use the Q in each year in excess of the average in its industry as classified by Fama and French (1997) in the extended version of 49 industries.

We control for firm characteristics such as the return on assets, book leverage, the logarithm of book assets, CAPEX over assets, and the Herfindahl index. Because Shin and Stulz (2000) find a negative relationship between firm age and value, we include the logarithm of the firm's age measured in years. In order to control for corporate governance quality other than contract length, we include the governance index of Gompers, Ishii and Metrick (2003). Because it is not available for all firms in our sample, we include a dummy that equals zero if the governance index is missing and one else. We also include a dummy that equals one if the CEO is also the chairman, as this allows him to exploit the firm more easily. This information is much more widely available than the governance index which measures a variety of provisions and characteristics. We further control for the CEO's age in order to capture horizon-unrelated effects that are correlated with the contract horizon, such as the near-retirement effects as documented by Gibbons and Murphy (1992). Finally, we include year dummies.

First, we examine if firm values are lower for at will contracts. Table 7 shows the results of a regression of industry adjusted Tobin's Q on a dummy that equals one for at will contracted CEOs. Firms with at will contracted CEOs have significantly lower Qs than their peers (t-stat = -2.82). Everything else equal, a firm with an at will contracted CEO will be associated with a Q 48% the size of their industry peers, roughly the same magnitude as, for example, to be classified as "democratic" by Gompers, Ishii and Metrick (2003). Note that Qs are not significantly different between firms in the year prior to the employment agreement, that is, this effect is not likely to be due to a selection bias. While all firms of our sample start out with a similar Q, firms with at will contracted CEOs become subsequently discounted.

Next, we analyze if CEO behaviour changes with his or her contract horizon. Specifically, we measure the Tobin's Q as well as the accounting control variables in the last

fiscal year ending before the contract termination or renewal, or before the second, third etc. remaining year begins). For this analysis, we exclude firms with at will CEOs and control for the selection of at will contracting. In order to control for spurious effects that could arise from the contract selection stage, we use the choice regression reported table 3 to compute inverse Mill's ratios according to the Heckman (1979) procedure. We include the Mill's ratio to regression without at will contracts. Please refer to our prior analysis for a discussion of the first stage contract choice. All other control variables remain the same.

Over the course of a CEO's first years in office,  $Q$  does not change significantly. The coefficient on the number of remaining years is not significantly related to  $Q$  ( $t = 0.38$ ). That changes in election years. Note that these are planned elections and not years before CEOs get fired. Our results are consistent with the disciplining hypothesis. In election years,  $Q$  is on average 73% lower than industry peers  $Q$  ( $t = -2.16$ ).

All control variables are related to  $Q$  in the manner documented in literature. Firm value is higher for profitable, less levered firms. Selection biases do not seem severe as the Heckman's inverse Lambda is not significantly related to the firm value.

Overall, the relationship between firm value and contract horizon are consistent with our predictions. First, we find evidence that firms with shorter contracts trade at a discount, consistent with the signal jamming hypothesis. At will contracts are associated with a deep discount in firm value. Note that the difference between at will contracts and non at will contracts are much more pronounced than the actual length in years of an explicit contract. The explicit contract horizon itself, as measured in years, is not significantly related to firm value. In election years, however, companies with contracts featuring an explicit expiration date are

associated with an even lower Tobin's Q. This is consistent with the overinvestment hypothesis. In election years, CEOs are associated with a lower firm value in addition to the signal effect of at will CEOs.

#### **IV.4 Contract horizon and returns**

We would like to confirm the firm value effects in the relationship between contract horizon and stock returns. For this purpose, we group our sample firms in portfolios and measure portfolio abnormal returns in the following fashion.

Each year, we assign our sample firms to equal- and value portfolios according of the remaining CEO contract horizon. Specifically, we assign the firm to a "long horizon" portfolio if the CEO has a remaining contract horizon of longer than 2 years, to a "short horizon" portfolio if he or she has a shorter contract horizon, and to an "at will" portfolio if his or her contract is at will. We also build a zero-investment portfolio by going long on a "long horizon" portfolio and short on an "at will" portfolio. For each of the portfolios, we measure monthly excess returns and use the four-factor model of Carhart (1997) to estimate abnormal returns:

$$R_t = \alpha + \beta_1 * RMRF_t + \beta_2 * SMB_t + \beta_3 * HML_t + \beta_4 * Momentum_t + \varepsilon_{ij},$$

Where  $R_t$  is the excess return to a portfolio in month  $t$ ,  $RMRF_t$  is the month  $t$  value-weighted market return minus the risk-free rate, and the terms  $SMB_t$  (small minus big),  $HML_t$  (high minus low), and  $Momentum_t$  are the month  $t$  returns on zero-investment factor-mimicking portfolios designed to capture size, book-to-market, and momentum effects, respectively.

Table 8 summarizes the results of the excess return regressions. Portfolios with a longer CEO horizon have significantly higher abnormal returns. A value-weighted zero-investment portfolio which is long on long horizon firms and short on at will firms yields a monthly abnormal return of 1.2%, or an annual return of 15.7%. An equally-weighted portfolio yields a monthly abnormal return of 0.8%, or an annual return of 9.9%.

Table 5 also shows that abnormal returns increase with the years remaining until CEO contract expiration. Because our observations with long contract horizons are sparse, however, the relationship is not strong. A Spearman rank-correlation test rejects the null hypothesis of no correlation between the remaining years and the rank of abnormal returns only at a 10% significance level. We cannot find any significant difference in return in the election year, either. The zero-investment portfolio's high abnormal returns result mostly from the underperformance of at will contracted CEOs.

To summarize, we find that CEOs with at will contracts underperform even in the short-run. If myopic shareholders really tend to hold short horizon CEO's stocks and long-term shareholders select themselves to hold long horizon CEO's stock, we cannot conclude that the myopic shareholders are particularly happy with their choice. On contrary, at will CEOs grossly underperform other firms. On the other hand, we do not find evidence that CEOs with explicit contract durations change their performance across their term. If there is variation in CEO behaviour and performance, the stock market does not reflect it.

## **V. Conclusion**

With a sample of 1,018 CEO employment contracts from 1992 to 2008, we show that firms with short term CEO contracts trade at a discount compared to firms with longer CEO contract terms. A trading strategy which is long in all companies with a CEO who will stay in office for longer than two years and short all companies with a CEO who is employed at will yields an annual return of 9.9%.

One reason for the discount of firms with short-term contracts seems to be myopic underinvestment. CEOs with at will contracts invest less than their peers. Although they underperform in terms of long-term stock price development, contemporaneous earnings seem to be higher than their peers'. This finding supports the argument of previous theoretical literature that myopic CEOs try signal their quality and effort by boosting earnings on cost of long-term investment.

Although the signal effect of short-term contracts decreases firm value, the constant dismissal threat in short-term contracts can discipline managers to refrain from unproductive or excessively risky overinvestment - given, of course, the negative effect of the signaling distortion. Our empirical results provide evidence of this argument. In the year before election, CEOs with fixed-term contracts spend more capital, for example on value destroying acquisitions. Overall, the signal effect together with the lack of discipline leads to a discount in Tobin's Q that is even deeper than the discount of firms with at will CEOs.

We wish we had better news for corporate shareholders. While myopic contracts decrease more firm value than they do good, long contract horizons are not a panacea because they give the executive more room for overinvestment. Renewal dates before contract expiration try to alleviate the problem, but only succeed in re-dating its arrival. Contract horizon is a powerful

tool in executive incentivisation. It ought to be used, however, in combination with board monitoring to ensure executive discipline throughout a CEO's office term.

The gradual improvement in CEO employment contract availability not only encourages hopes of better transparency for shareholders. We also hope that more data will give us the opportunity to evaluate various, more subtle effects of contract horizon on CEO behaviour. In particular, we believe that there are opportunities in the research on interaction of contract length and other governance measures. In addition, we believe that contract length not only has effects on CEO turnover, but also results in certain risk and cyclicity patterns. This, in turn, will have impact on stock price cycles.

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**TABLE I****SUMMARY STATISTICS AT THE START OF THE CONTRACT**

This table presents summary statistics of the sample contracts. Panel A shows the number of contracts sorted by their start year.

<b>Panel A: Number of contracts per year</b>			
<b>Year</b>	<b>Total</b>	<b>at will</b>	<b>not at will</b>
<b>sample</b>			
1992	2	0	2
1993	7	6	1
1994	8	4	4
1995	5	4	1
1996	15	12	3
1997	25	18	7
1998	29	22	7
1999	45	31	14
2000	40	34	6
2001	29	25	4
2002	23	16	7
2003	30	19	11
2004	63	35	28
2005	173	60	113
2006	175	58	117
2007	310	107	203
2008	39	13	26
Total	1018	464	554

Panel B shows average firm and industry characteristics. Tobin's Q is the ratio of the market value of assets to the book value of assets: the market value is calculated as the sum of the book value of net assets and the market value of common stock less the book value of common stock, cash, and deferred taxes. Market values are measured at the end of the fiscal year. Assets are book assets; ROA is earnings before interest and taxes over assets; leverage is the ratio of net debt over net assets; Industry sales volatility is the 49 Fama French industry average of the variance in revenues in the seven past years, industry survival rate is the industry rate of year-on-year survival within the COMPUSTAT database, market adjusted returns are annual stock returns adjusted by the value weighted CRSP index; industry homogeneity is the median, across all firms of one the 49 Fama French industries, of the percentage variation in monthly stock returns that is explained by an equally weighted industry index. All numbers are measured in the last fiscal year ending before the start date of the contract. All numbers except for dummy and discrete variables are winsorized at the 1% level.

**Panel B: Average firm and industry characteristics by contract**

	N	Total sample	at will	not at will	t-statistic of differences
Q	936	2.59	2.53	2.67	0.37
Assets	1002	1,345.36	996.11	1,765.22	5.24
ROA	999	(0.07)	(0.08)	(0.06)	2.11
Leverage	839	0.43	0.42	0.45	1.89
Industry sales volatility	1007	4,503,440	5,134,538	3,749,971	3.08
Industry survival rate	1018	0.96	0.96	0.97	3.13
Market adj. returns	196	0.12	0.11	0.12	0.45
Industry homogeneity	1018	0.31	0.30	0.31	0.24
Capex/Assets	706	0.2620072	0.25	0.28	0.33
R&D expense/Assets	374	0.4946159	0.35	0.67	1.57

Panel C shows average CEO and governance characteristics. Age is the executive's age in years; tenure is the number of years he has been in office; over 60 is a dummy which equals 1 if the executive age exceeds 60; % CEO voting power if the percentage of votes the CEO holds; salary is the CEO's base salary in million USD; incentive to total compensation is the value of stock and option grants to total CEO pay; abnormal compensation is the residual from a regression of cash compensation to the 49 Fama French industry adjusted net income on assets ratio and the natural logarithm of sales; compensation at risk is the product of abnormal compensation and the over 60 dummy; governance index is the index developed by Gompers, Ishii and Metrick (2003); and chairman and CEO equals one when the CEO is also the chairman. All numbers are measured in the last fiscal year ending before the start date of the contract. All numbers except for dummy and discrete variables are winsorized at the 1% level.

**Panel C: Average CEO and governance characteristics by contract**

	N	Total sample	at will	not at will	t-statistic of differences
Age	936	52.49	52.18	52.87	1.29
Tenure	243	5.97	6.42	5.72	(0.77)
Over 60	1018	0.15	0.14	0.16	0.93
% CEO voting power	56	0.37	0.36	0.38	0.05
Salary	243	676.74	663.80	683.83	0.37
Incentive to total compensation	242	0.60	0.57	0.61	0.98
Abnormal compensation	244	961.55	1,302.83	775.79	(0.36)
Compensation at risk	244	612.65	431.58	711.21	0.38
Governance index	123	8.88	8.63	9.09	0.93
Chairman and CEO	1018	0.38	0.35	0.42	2.56

Panel D shows the number of contracts sorted by length.

<b>Panel D: Number of contracts sorted by length</b>			
<b>Length (years)</b>	<b>Freq.</b>	<b>Percent</b>	<b>Cum.</b>
0	560	55.01	55.01
1	44	4.32	59.33
2	88	8.64	67.98
3	209	20.53	88.51
4	39	3.83	92.34
5	57	5.6	97.94
6	14	1.38	99.31
7	3	0.29	99.61
8	3	0.29	99.9
14	1	0.1	100

**TABLE II****SUMMARY STATISTICS BY FIRM AND YEAR**

This table presents summary statistics of the subsequent performance in the contract period. The sample contains an observation per each firm for which we have contract terms and each year in which the contract is not terminated, until 2008.

Panel A shows average contract horizon characteristics. Election year equals one if the next renewal or expiration date is in the year after the fiscal year of the accounting data and zero else. Election year excl. renewal dates is the equivalent measure ignoring renewal dates. Chairman and CEO equals one when the CEO is also the chairman of the firm. Tenure is the difference between the current year and the first year in office. Age is the CEO age in years. Over 60 equals one when age exceeds 60, and zero otherwise. The probability of turnover is the estimated probability using a Probit regression of CEO turnover on a dummy if the board is mixed, a dummy if the board is dominated by outsiders, the number of directors, a dummy that denotes busy boards, 1 minus the fraction of institutional investors, the annual stock return, the over 60 dummy, industry adjusted return on assets, the tenure, the percentage of incentive pay, the share ownership percentage of the CEO, and year dummies. The board is considered mixed if outsiders constitute 40 to 60% of board members, and outsider dominated if more outsiders constitute more than 60% of board members. The board is considered busy if 50% or more of the board members hold three or more board seats. Industry adjusted return on assets is the fraction of net income over book assets minus the 49 Fama French industry average divided by the industry average. The alternative specification for turnover excludes the board related variables, institutional ownership, and stock returns. Governance index is the index developed by Gompers, Ishii and Metrick (2003); and outsider voting power is the percentage of voting rights held by outsiders. All numbers except for dummy and discrete variables are winsorized at the 1% level.

<b>Panel A: Average contract horizon characteristics by firm and year</b>				
	<b>N</b>	<b>Total</b>	<b>at will</b>	<b>not at will</b>
		<b>sample</b>		
Election year	3610	0.06	-	0.13
Election year (excl. renewals)	3610	0.06	-	0.14
Chairman and CEO	3607	0.43	0.37	0.50
Tenure	910	6.31	6.91	6.00
Age	3414	53.30	52.86	53.81
Over 60	3610	0.26	0.23	0.29
Probability of turnover	772	0.14	0.18	0.12
Probability of turnover (alternative specification)	915	0.15	0.20	0.13
Governance index	3610	1.26	0.97	1.57
Busy board	702	0.01	0.01	0.02
Outsider voting power	702	0.64	0.26	0.82

Panel B shows average firm characteristics. Capex/PP&E is the ratio of capital expenditures over plant, property and equipment; R&D/assets is the ratio of research and development expense over assets; Capex/assets is the ratio of capital expenditures over assets; ROA is the ratio of earnings before interest and taxes over assets. Q is the ratio of the market value of assets to the book value of assets: the market value is calculated as the sum of the book value of net assets and the market value of common stock less the book value of common stock, cash, and deferred taxes. Market values are measured at the end of the fiscal year. Current discretionary accrual is the residual of a regression of current accruals on the average year-on-year sales growth in the 49 Fama French industry. Current accrual is the year-on-year change in noncash working capital minus depreciations. Panel B shows the results from regressions of long-term discretionary accruals as the dependent variable. Long-term discretionary accrual is the residual of a regression of accruals on the average year-on-year sales growth and PP&E in the 49 Fama French industry. Accrual is the difference between earnings before interest and taxes and cash flow. Tangibility is 1 minus the fraction of intangible assets over total assets; number of SEOs is the number of seasoned equity offers in the industry announced in the last fiscal year; number of acquisitions is the number of acquisitions by acquirers in the industry announced in the last fiscal year; returns are annual stock returns; turnover is the volume traded over the number of shares outstanding; leverage is net debt over assets; log assets is the natural logarithm of book assets; sales growth is the year-on-year growth in revenues; ROA growth the year-on-year growth in ROA; Herfindahl index is the Herfindahl index of the industry; idiosyncratic risk is the residual of a regression of stock price over the Fama French factors, and the standard deviation of analyst forecasts is as the standard deviation of EPS forecasts as noted from the IBES database. All numbers except for dummy and discrete variables are winsorized at the 1% level.

<b>Panel B: Average firm characteristics by firm and year</b>				
	<b>N</b>	<b>Total</b>	<b>at will</b>	<b>not at will</b>
		<b>sample</b>		
Capex/PP&E	2767	0.14	0.14	0.14
R&D/assets	3610	0.14	0.15	0.14
Capex/assets	3071	0.05	0.04	0.04
ROA	3114	-0.01	-0.02	0.00
Q	3033	2.35	2.10	2.61
Accrual	1882	8.62	1.13	16.34
Accrual LT	1729	31.97	11.27	53.38
Tangibility	3005	0.89	0.89	0.90
Number of SEOs	3610	2.55	3.51	1.48
Number of acquisitions	3610	0.34	0.28	0.41
Returns	2247	0.03	0.03	0.03
Turnover	2247	1.24	1.34	1.19
Governance index	3610	1.26	0.97	1.57
Leverage	2678	0.42	0.41	0.44
Log assets	3171	5.78	5.36	6.24
Sales growth	2117	1.08	1.23	0.95
ROA growth	2114	-0.19	-0.21	-0.17
Herfindahl index	3206	0.02	0.02	0.02
idiosyncratic risk	2849	0.03	0.03	0.03
Analyst forecast standard dev.	1698	-0.45	-1.61	0.58

**TABLE III****CHOICE OF CONTRACT HORIZON**

This table presents the coefficients from Probit regressions of a variable that equals one when the contract is at will and zero otherwise on the variables listed below. Log sales is the natural logarithm of revenues. Q is the ratio of the market value of assets to the book value of assets: the market value is calculated as the sum of the book value of net assets and the market value of common stock less the book value of common stock, cash, and deferred taxes. Market values are measured at the end of the fiscal year. ROA is earnings before interest and taxes divided by book assets. Capex/assets is the ratio of capital expenditures over book assets. Industry sales volatility is the 49 Fama French industry average of the variance in revenues in the seven past years. Industry survival rate is the industry rate of year-on-year survival within the COMPUSTAT database, market adjusted returns are annual stock returns adjusted by the value weighted CRSP index. Industry homogeneity is the median, across all firms of one the 49 Fama French industries, of the percentage variation in monthly stock returns that is explained by an equally weighted industry index. All variables are measured in the last fiscal year ending before the expiration date or the respective date in a year previous to expiration of which the expiration date will be an anniversary. All variables except for dummy and discrete variables are winsorized at the 1% level. This table shows coefficients and t-statistics underneath.

<b>Dependent variable</b>	<b>At will contract</b>
Log sales	-0.063** (-2.597)
Q	-0.002 (-0.182)
ROA	0.419 (1.283)
Capex/Assets	-0.047 (-0.89)
Industry sales volatility	0 (0.478)
Industry survival rate	-2.194* (-2.299)
Industry homogeneity	0.081 (0.712)
Constant	2.453** (2.712)
N	655
* p<0.05, ** p<0.01, *** p<0.001	

## TABLE IV

### CONTRACT HORIZON AND INVESTMENT

This table presents the coefficients from regressions of investment spending on the variables listed below. Panel A shows the results of the regression with capital expenditures over plant, property and equipment as the dependent variable. Panel B shows the results of the regression with capital expenditures over assets as the dependent variable. Panel C shows the results of the regression with research and development expenses as the dependent variable.

At will is a dummy that equals one when the CEO has an at will contract and zero otherwise. Remaining years is the difference between the current and the expiration date. Election year equals one if the next renewal or expiration date is in the year after the fiscal year of the accounting data and zero else. Election year excl. renewal dates is the equivalent measure ignoring renewal dates. Tobin's Q is the ratio of the market value of assets to the book value of assets: the market value is calculated as the sum of the book value of net assets and the market value of common stock less the book value of common stock, cash, and deferred taxes. Market values are measured at the end of the fiscal year. Long-term discretionary accrual is the residual of a regression of accruals on the average year-on-year sales growth and PP&E in the 49 Fama French industry. Accrual is the difference between earnings before interest and taxes and cash flow. KZ index is  $KZ_{it} = -1.002 CF_{it}/A_{it-1} - 39.368 DIV_{it}/A_{it-1} - 1.315 C_{it}/A_{it-1} + 3.139 LEV_{it} + 0.283 Q_{it}$ , here  $CF_{it}/A_{it-1}$  is cash flow over lagged assets,  $DIV_{it}/A_{it-1}$  is cash dividends over assets,  $C_{it}/A_{it-1}$  is cash balances over assets,  $LEV_{it}$  is leverage, and Q is the market-to-book ratio as described earlier. Number of SEOs is the number of seasoned equity issues in the 49 Fama French industry that were announced in the fiscal year. Leverage is net debt over assets; tangibility is 1 minus the fraction of intangible assets over total assets; log assets is the natural logarithm of book assets; governance index is the index developed by Gompers, Ishii and Metrick (2003); governance index not missing equals one if the governance index is not missing and zero otherwise; chairman and CEO equals one when the CEO is also the chairman; executive's age is the current age of the CEO; and sleepiness is 1 - the ownership fraction of insiders as reported in the 13f database of Thomson. Lambda\_not at will is the Heckman's Lambda from the regression as shown in table 3.

All variables are measured in the last fiscal year ending before the expiration date or the respective date in a year previous to expiration of which the expiration date will be an anniversary. All variables except for dummy and discrete variables are winsorized at the 1% level. This table shows coefficients and t-statistics underneath.

	Panel A: Capex/PP&E				Panel B: Capex/assets				Panel C: R&D expense / assets				
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	
At will	-0.009 (-1.573)				-0.005* (-2.082)				-0.004 (-0.458)				
Remaining Years		0.002 (0.779)				0.001 (0.491)				-0.001 (-0.369)			
Election year			0.025 (1.929)				0.012* (2.029)				0.01 (0.495)		
Election year (excluding renewals)				-0.008 (-0.607)				-0.004 (-0.746)				0.043* (2.099)	
Q	0.003*** (5.548)	0.002* (2.435)	0.002** (2.613)	0.002* (2.5)	0.001*** (3.507)	0.001 (1.798)	0.001 (1.953)	0.001 (1.833)	-0.006*** (-7.325)	-0.002 (-1.737)	-0.002 (-1.749)	-0.002 (-1.741)	
Discretionary long-term accrual	0 (1.045)	0 (0.447)	0 (0.511)	0 (0.404)	-0.000*** (-3.824)	-0.000** (-3.046)	-0.000** (-2.983)	-0.000** (-3.088)	0.000*** (3.84)	0.000** (3.083)	0.000** (3.107)	0.000** (3.199)	
KZ index	0 (-0.915)	0 (0.05)	0 (0.1)	0 (-0.011)	0 (1.869)	0 (1.54)	0 (1.603)	0 (1.469)	0 (-0.508)	0 (-0.35)	0 (-0.326)	0 (-0.18)	
Number of SEOs	0.001*** (11.316)	0.001*** (3.386)	0.001*** (3.429)	0.001*** (3.396)	0.001*** (14.03)	0.000*** (3.805)	0.000*** (3.849)	0.000*** (3.812)	-0.001*** (-5.566)	-0.001 (-1.792)	-0.001 (-1.793)	-0.001 (-1.798)	
Leverage	-0.036** (-2.839)	-0.012 (-0.609)	-0.013 (-0.665)	-0.013 (-0.665)	0.015** (2.689)	0.017 (1.813)	0.016 (1.789)	0.016 (1.78)	-0.053** (-2.637)	0.001 (0.019)	0.001 (0.043)	0.002 (0.057)	
Tangibility	-0.037 (-1.661)	-0.056 (-1.533)	-0.051 (-1.404)	-0.055 (-1.507)	0.080*** (7.953)	0.075*** (4.416)	0.077*** (4.561)	0.075*** (4.42)	0.173*** (4.849)	0.165** (2.834)	0.164** (2.828)	0.171** (2.952)	
Log assets	-0.006*** (-3.725)	-0.008* (-2.531)	-0.008** (-2.644)	-0.008** (-2.634)	0.003*** (4.073)	0.003* (2.013)	0.003* (1.982)	0.003* (1.98)	-0.039*** (-14.105)	-0.038*** (-7.684)	-0.038*** (-7.694)	-0.038*** (-7.756)	
Governance index	-0.001 (-0.759)	-0.001 (-1.006)	-0.001 (-1.155)	-0.001 (-1.016)	-0.001 (-1.527)	-0.001 (-1.166)	-0.001 (-1.309)	-0.001 (-1.158)	0.003 (1.921)	0.002 (1.01)	0.002 (0.998)	0.002 (0.943)	
Chairman and CEO	0.006 (1.049)	0.003 (0.313)	0.003 (0.299)	0.003 (0.302)	-0.001 (-0.492)	0.004 (1.022)	0.004 (1.01)	0.004 (1.01)	-0.007 (-0.768)	0.016 (1.086)	0.016 (1.083)	0.017 (1.122)	
Executive's age	-0.001** (-2.829)	-0.001 (-1.538)	-0.001 (-1.555)	-0.001 (-1.585)	0 (-1.586)	0 (-0.802)	0 (-0.795)	0 (-0.828)	-0.002** (-2.823)	-0.002* (-2.305)	-0.002* (-2.275)	-0.002* (-2.315)	
Sleepiness	-0.024** (-2.606)	-0.047** (-3.172)	-0.045** (-3.044)	-0.046** (-3.115)	0.001 (0.336)	-0.006 (-0.939)	-0.006 (-0.818)	-0.006 (-0.894)	-0.029 (-1.937)	-0.007 (-0.305)	-0.007 (-0.308)	-0.009 (-0.37)	
lambda_not at will		-0.019 (-0.413)	-0.026 (-0.578)	-0.028 (-0.621)		0.01 (0.478)	0.009 (0.413)	0.008 (0.363)		0.059 (0.794)	0.066 (0.916)	0.068 (0.939)	
Constant	0.265*** (9.452)	0.265*** (5.425)	0.257*** (5.277)	0.264*** (5.414)	-0.029* (-2.34)	-0.021 (-0.919)	-0.024 (-1.071)	-0.02 (-0.906)	0.261*** (5.871)	0.288*** (3.725)	0.288*** (3.714)	0.281*** (3.646)	
R-squared		15%	7%	8%	7%	17%	6%	6%	6%	22%	20%	20%	20%
N		1417	621	621	621	1417	621	621	621	1419	621	621	621

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

## TABLE V

### CONTRACT HORIZON AND PROFITABILITY

This table presents the coefficients from regressions of ROA, measured as earnings before interest and taxes over book assets, on the following variables.

At will is a dummy that equals one when the CEO has an at will contract and zero otherwise. Remaining years is the difference between the current and the expiration date. Election year equals one if the next renewal or expiration date is in the year after the fiscal year of the accounting data and zero else. Election year excl. renewal dates is the equivalent measure ignoring renewal dates. Tobin's Q is the ratio of the market value of assets to the book value of assets: the market value is calculated as the sum of the book value of net assets and the market value of common stock less the book value of common stock, cash, and deferred taxes. Market values are measured at the end of the fiscal year. Log assets is the natural logarithm of book assets; R&D/assets is the ratio of research and development expenditures over assets; R&D expense not missing equals zero if the R&D expense item is missing and one otherwise; the Herfindahl index is the 49 Fama French industry Herfindahl index measured in sales; firm age is the natural logarithm of the company age; governance index is the index developed by Gompers, Ishii and Metrick (2003); governance index not missing equals one if the governance index is not missing and zero otherwise; chairman and CEO equals one when the CEO is also the chairman; and executive's age is the current age of the CEO. Lambda\_not at will is the Heckman's Lambda from the regression reported in table 3.

All variables are measured in the last fiscal year ending before the expiration date or the respective date in a year previous to expiration of which the expiration date will be an anniversary. All variables except for dummy and discrete variables are winsorized at the 1% level. This table shows coefficients and t-statistics underneath.

Dependent Variable	ROA			
	(1)	(2)	(3)	(4)
At will	0.024*** (4.402)			
Remaining Years		0.003 (1.557)		
Election year			0 (0.027)	
Election year (excluding renewals)				-0.014 (-1.227)
Q	0.006*** (12.431)	0.005*** (5.953)	0.005*** (6.12)	0.005*** (6.079)
Log assets	0.053*** (38.457)	0.060*** (23.452)	0.060*** (23.374)	0.060*** (23.383)
R&D expense / assets	-0.003 (-1.273)	-0.002 (-0.527)	-0.002 (-0.497)	-0.002 (-0.481)
R&D expense not missing	-0.012 (-1.818)	-0.033*** (-3.383)	-0.032** (-3.296)	-0.032*** (-3.33)
Herfindahl index	1.021*** (5.535)	1.467*** (5.937)	1.467*** (5.928)	1.469*** (5.941)
Governance index	-0.003** (-2.991)	-0.001 (-0.963)	-0.001 (-1.083)	-0.001 (-1.034)
Chairman and CEO	0.006 (1.017)	0.012 (1.426)	0.012 (1.423)	0.012 (1.436)
Executive's age	0.001** (3.09)	0.001* (2.217)	0.001* (2.153)	0.001* (2.169)
lambda_not at will		0.105* (2.574)	0.093* (2.32)	0.094* (2.341)
Constant	-0.416*** (-21.044)	-0.396*** (-11.259)	-0.395*** (-11.21)	-0.393*** (-11.156)
R-squared	42%	49%	49%	49%
N	2798	1186	1186	1186

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

## TABLE VI

### CONTRACT HORIZON AND REVENUES

This table presents the coefficients from regressions of the year-on-year growth in sales on the following variables.

At will is a dummy that equals one when the CEO has an at will contract and zero otherwise. Remaining years is the difference between the current and the expiration date. Election year equals one if the next renewal or expiration date is in the year after the fiscal year of the accounting data and zero else. Election year excl. renewal dates is the equivalent measure ignoring renewal dates. Tobin's Q is the ratio of the market value of assets to the book value of assets: the market value is calculated as the sum of the book value of net assets and the market value of common stock less the book value of common stock, cash, and deferred taxes. Market values are measured at the end of the fiscal year. Log assets is the natural logarithm of book assets; R&D/assets is the ratio of research and development expenditures over assets; R&D expense not missing equals zero if the R&D expense item is missing and one otherwise; the Herfindahl index is the 49 Fama French industry Herfindahl index measured in sales; firm age is the natural logarithm of the company age; governance index is the index developed by Gompers, Ishii and Metrick (2003); governance index not missing equals one if the governance index is not missing and zero otherwise; chairman and CEO equals one when the CEO is also the chairman; and executive's age is the current age of the CEO. Lambda\_not at will is the Heckman's Lambda from the regression reported in table 3.

All variables are measured in the last fiscal year ending before the expiration date or the respective date in a year previous to expiration of which the expiration date will be an anniversary. All variables except for dummy and discrete variables are winsorized at the 1% level. This table shows coefficients and t-statistics underneath.

Dependent Variable	Sales			
	(1)	(2)	(3)	(4)
At will	0.247*			
	(2.00)			
Remaining Years		-0.113*		
		(-2.42)		
Election year			-0.053	
			(-0.208)	
Election year (excluding renewals)				0.624*
				(2.303)
Q	-0.002	-0.011	-0.014	-0.013
	(-0.172)	(-0.622)	(-0.833)	(-0.745)
Log assets	0.045	0.011	0.027	0.026
	(1.447)	(0.186)	(0.467)	(0.451)
R&D expense / assets	0.574***	0.468***	0.464***	0.461***
	(12.419)	(7.327)	(7.244)	(7.219)
R&D expense missing	-0.113	-0.248	-0.256	-0.262
	(-0.846)	(-1.252)	(-1.288)	(-1.322)
Herfindahl index	2.113	3.104	2.899	2.926
	(0.542)	(0.608)	(0.565)	(0.573)
Governance index	-0.002	-0.003	0.001	-0.005
	(-0.091)	(-0.143)	(0.027)	(-0.2)
Chairman and CEO	-0.358**	-0.281	-0.28	-0.274
	(-2.737)	(-1.497)	(-1.485)	(-1.457)
Executive's age	0.003	0.011	0.012	0.012
	(0.359)	(0.953)	(1.041)	(1)
lambda_not at will		-0.014	0.45	0.419
		(-0.015)	(0.493)	(0.46)
Constant	0.653	0.693	0.692	0.627
	(1.46)	(0.897)	(0.891)	(0.812)
R-squared	8%	6%	6%	6%
N	1880	861	861	861

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

## TABLE VII

### CONTRACT HORIZON AND TOBIN'S Q

This table presents the coefficients from regressions of industry-adjusted Tobin's Q on the variables listed below. The dependent variable, Tobin's Q, is the ratio of the market value of assets to the book value of assets: the market value is calculated as the sum of the book value of net assets and the market value of common stock less the book value of common stock, cash, and deferred taxes. Market values are measured at the end of the fiscal year. Industry adjustments are made by subtracting and dividing by the industry mean, where industry is one of the 49 industries designated by Fama and French matched to the four-digit SIC code.

The independent variables are the following. At will is a dummy that equals one when the CEO has an at will contract and zero otherwise. Remaining years is the difference between the current and the expiration date. Election year equals one if the next renewal or expiration date is in the year after the fiscal year of the accounting data and zero else. Election year excl. renewal dates is the equivalent measure ignoring renewal dates. ROA is the ratio of earnings before interest and taxes over assets; leverage is the ratio of net debt over net assets; log assets is the natural logarithm of book assets; capex/assets is the ratio of capital expenditures over assets; the Herfindahl index is the 49 Fama French industry Herfindahl index measured in sales; firm age is the natural logarithm of the company age; governance index is the index developed by Gompers, Ishii and Metrick (2003); governance index not missing equals one if the governance index is not missing and zero otherwise; chairman and CEO equals one when the CEO is also the chairman; and executive's age is the current age of the CEO. Lambda\_not at will is the Heckman's Lambda from the regression reported in table 3.

All variables are measured in the last fiscal year ending before the expiration date or the respective date in a year previous to expiration of which the expiration date will be an anniversary. All variables except for dummy and discrete variables are winsorized at the 1% level. This table shows coefficients and t-statistics underneath.

Dependent Variable	Tobin's Q			
	(1)	(2)	(3)	(4)
At will	-0.483** (-2.819)			
Remaining Years		0.025 (0.383)		
Election year			-0.734* (-2.155)	
Election year (excluding renewals)				-0.042 (-0.115)
ROA	4.759*** (8.292)	3.127*** (3.734)	3.042*** (3.641)	3.123*** (3.728)
Leverage	-2.054*** (-5.685)	-2.661*** (-5.187)	-2.684*** (-5.286)	-2.683*** (-5.266)
Log assets	-0.1 (-1.818)	-0.132 (-1.341)	-0.129 (-1.326)	-0.136 (-1.395)
Capex/assets	0.059 (1.13)	0.043 (0.493)	0.042 (0.484)	0.045 (0.51)
Herfindahl index	-4.15 (-0.801)	2.393 (0.37)	2.909 (0.451)	2.378 (0.368)
Firm age	0.007 (0.555)	-0.025 (-1.365)	-0.029 (-1.559)	-0.026 (-1.37)
Governance index	-0.091 (-0.998)	-0.135 (-1.27)	-0.128 (-1.209)	-0.137 (-1.291)
Governance index not missing	-0.427 (-0.49)	-0.696 (-0.662)	-0.677 (-0.647)	-0.707 (-0.673)
Chairman and CEO	-0.161 (-0.85)	-0.169 (-0.64)	-0.175 (-0.668)	-0.175 (-0.664)
Executive's age	-0.012 (-1.111)	0.013 (0.844)	0.012 (0.781)	0.013 (0.833)
lambda_not at will		-1.91 (-1.435)	-1.986 (-1.514)	-1.994 (-1.512)
Constant	1.723 (0.502)	0.138 (0.059)	0.277 (0.121)	0.264 (0.115)
year dummies	Yes	Yes	Yes	Yes
R-squared	10%	9%	9%	9%
N	1601	711	711	711

、 \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

**TABLE VIII**

**CONTRACT HORIZON AND PERFORMANCE**

We estimate four-factor regressions of monthly returns for portfolios of firms sorted by their contract type. Panel A contains the results for equally weighted portfolios, and panel B the results for value weighted portfolios. The first row contains the results when we use the portfolio that buys a portfolio of all companies with CEO contract horizons over two years, and sells a portfolio of all companies with at will CEO employment. The portfolios are reset every year. The explanatory variables are the returns to zero-investment portfolios designed to capture market, size, book-to-market, and momentum effects, respectively. The sample period is from 1992 to 2008. T-statistics are reported underneath the coefficients.

<b>Panel A: Equally weighted returns</b>					
<b>Portfolio</b>	<b>constant</b>	<b>RMRF</b>	<b>SMB</b>	<b>HML</b>	<b>Momentum</b>
long - at-will	0.008	0.001	(0.002)	(0.003)	(0.002)
	2.33	1.05	-2.02	-2.12	-1.66
at-will	(0.017)	0.009	0.005	0.007	0.001
	-8.75	17.13	8.13	9.73	2.76
short horizon	(0.010)	0.009	0.003	0.004	0.000
	-3.33	10.76	3.8	3.27	0.47
long horizon	(0.010)	0.011	0.003	0.005	0.000
	-3.29	13.1	3.24	4.45	0.28
remaining years					
<1	(0.014)	0.009	0.003	0.006	0.000
	-2.46	5.73	1.9	3.02	0.16
1	(0.008)	0.011	0.006	0.005	0.002
	-1.65	8.09	3.75	2.92	1.45
2	(0.009)	0.010	0.003	0.005	0.002
	-2.29	9.32	2.34	3.43	1.59
3	(0.013)	0.011	0.003	0.005	0.001
	-2.95	8.94	2.51	3.19	0.67
4	(0.014)	0.009	0.001	0.003	0.001
	-2.55	6.19	0.49	1.76	1
5	(0.003)	0.009	0.003	0.001	(0.001)
	-0.42	4.24	1.33	0.4	-0.47
>5	(0.008)	0.012	0.003	0.004	(0.003)
	-1.2	7.16	1.49	1.68	-1.97

**Panel B: Value weighted returns**

<b>Portfolio</b>	<b>constant</b>	<b>RMRF</b>	<b>SMB</b>	<b>HML</b>	<b>Momentum</b>
long - at-will	0.012	0.002	(0.003)	(0.005)	(0.005)
	2.37	1.35	-1.67	-2.8	-3.41
at-will	(0.015)	0.009	0.002	0.006	0.002
	-5.79	12.84	2.46	6.82	3.32
short horizon	(0.004)	0.009	(0.002)	(0.000)	0.000
	-1.28	9.14	-2.1	-0.16	0.01
long horizon	(0.002)	0.011	(0.001)	0.001	(0.002)
	-0.43	9.09	-0.6	0.71	-1.98
remaining years					
<1	(0.007)	0.008	(0.003)	0.004	0.001
	-1.1	4.98	-1.55	1.74	0.38
1	(0.001)	0.009	0.001	0.003	0.002
	-0.18	6.42	0.86	1.75	1.18
2	(0.004)	0.011	(0.002)	0.003	0.002
	-0.9	8.78	-1.76	1.96	1.74
3	(0.005)	0.011	(0.004)	0.001	(0.001)
	-0.69	5.98	-1.88	0.53	-0.56
4	(0.012)	0.011	(0.003)	0.005	0.002
	-1.74	6.12	-1.27	1.8	0.91
5	(0.006)	0.012	0.003	0.004	(0.002)
	-0.69	5.82	1.49	1.35	-0.88
>5	0.008	0.008	(0.001)	(0.003)	(0.006)
	1.28	4.79	-0.46	-1.65	-3.57

