CEO EMPLOYMENT CONTRACT HORIZON AND MYOPIC BEHAVIOUR

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Abstract:

This paper studies the effects of horizon in CEO employment contracts on investment policies. It uses the terms of 3,717 employment contracts to determine the employment time horizon of U.S. CEOs. CEOs with short-term contracts invest less than their peers. They also report lower earnings, inconsistent with the argument that they sacrifice long-term investments for signaling purposes. This has impact on firm valuation. Firms with short-term CEO contract horizon trade at a discount to firms with CEOs with long-term horizon.

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I. Introduction

Public debates on short-term oriented corporate behaviour have focused on incentive pay. This paper seeks to draw attention to another component of management horizon: the length of management employment contracts. Contract expiration or renewal provides us an exact measure of CEO horizon. This allows us to assess the impact of time horizon on investment behaviour, and, ultimately, firm value.

CEOs have often been accused of increasing short-term stock prices at the expense of long-term firm value. Myopic managers may forego productive investments in order to boost contemporaneous earnings (Stein, 1989). They may 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 Rebello, 1997), or in order to take excessive risks (Chevalier and Ellison, 1999). On the other hand, short-term contracts impose a more urgent dismissal threat. This may discourage executives from suboptimal behaviour. Which effect and in which circumstances dominates, is the topic of this paper.

A new dataset of 3,717 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 when they get closer to 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 unproductive behaviour.

First, the choice between contract types seems to be important for our sample CEOs: more tenured CEOs prefer fixed-term contracts to at-will contracts. This is not surprising since at-will contracts make it easier to fire the CEO. Nevertheless, contracts are becoming shorter over time. Figure 1 shows the average contract length of fixed-term CEO contracts during our sample period from 1990 to 2007. In this period, the average contract length has decreased from 8.0 in 1990 and 4.5 in 1992 to 2.7 in 2008.

Does this trend imply that short-term contracts are better? Is the dismissal threat of short-term contracts able to overcome potential myopia problems? We find evidence that CEOs with a longer horizon invest more, both in terms of capital expenditures and research and development expenses. To be more precise, CEOs with at-will contracts invest less than their peers, as well as CEOs with less time remaining to their contract expiration. We do not find evidence that CEOs underinvest in order to boost earnings. Returns on assets are lower for CEOs with a shorter time horizon.

In order to quantify the effects of myopic behaviour, we examine differences in firm value for CEOs with different horizons. We identify a discount for firms with short-horizon CEO contracts. This discount seems to stem mainly from the underinvestment effect. Controlling for the influence of at-will contracts on investment, the relationship between at-will contracts and firm value is actually positive. This indicates that short-term contracts do have advantages. In particular, they may discipline the CEO by imposing a permanent dismissal threat. This does not

apply to CEOs whose fixed-term contract is near expiration. Firm value declines during the term of CEOs with fixed-term contracts also after controlling for underinvestment.

One major concern of this analysis is potential endogeneity between the choice of contract length and subsequent performance. Firms that need long-term investment may prefer a longer-term CEO employment contract. In order to circumvent this potential bias, we use the legal environment to instrument the choice between short- and long-term contracts. States with more employee-friendly court records, particularly states that exempt the right to dismiss at-will employees in some situations, are more prone to at-will, or shorter employment contracts. The presence of these so-called at-will exceptions are historically grown and not correlated to investment. We complement this instrument with operating risk measures, which Gillan, Hartzell and Parrino (2009) show to be related to the choice of contract length.

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 Rebello, 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 exogenous 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 tax 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. If this is valid, this should translate in low investment spending in periods just before contract expiration. 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.

Hypothesis 1: If a short contract horizon leads to underinvestment, at-will CEOs and fixed-term CEOs closer to contract expiration will invest less.

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. Our second hypothesis aims at distinguishing over- from underinvestment.

Hypothesis 2: If a short contract horizon leads to overinvestment, at-will CEOs and fixed-term CEOs closer to contract expiration will invest more.

Myopia problems have an impact on firm value. In particular, firms with at-will CEOs will underperform if their CEO underinvests permanently. On contrary, if underinvestment was a desired outcome, we should not observe any discrepancies in firm value. For CEOs with fixed-term contracts, the case is less clear. The goal of underinvestment behaviour is to boost short-term performance. If underinvestment is done successfully, we should not observe any impact on the firm value. To summarize:

Hypothesis 3: If there is underinvestment and it is suboptimal, we expect a decline in firm value for firms with at-will CEO contracts or fixed-term contracts closer to expiration.

Here is an argument why short-term contracts could be optimal. 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.

Hypothesis 4: If short-term contracts are optimal for more talented managers, we expect no decline in firm value for firms with at-will CEO 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 27,532 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. One percent - 192 - of the documents are explicit retention or renewal agreements which 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 1% of the documents - are not explicit employment contracts of 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. We obtain real separation dates from Execucomp, Risk Metrics or BoardEx. We exclude all contracts for which we can neither find the real contract expiration date nor verify that the CEO is still in office.

In total, this procedure leads to the discard of 23,815 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 final sample contains 3,717 contracts between 1989 and 2008, of which most are dated between 1996 and 2008. The contracts were made by 2,371 firms. Panel E reports a breakdown of the contract number per firm. We obtain one single contract for 1,299 of the sample firms, two contracts for 705 firms and over two for 367, or 15% of firms. Nine firms provide us with more than 6 contracts – these contracts are mostly amendments of old ones and renewals.

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 1,182 million USD, comparable with the average COMPUSTAT firm size of 1,105 million USD. Return on assets ratios are on average -0.7% for the sample, compared to 0.1% for the COMPUTAT firms. Debt to assets ratios are on average 21.9% for the sample, compared to 23.9% for the COMPUSTAT firms. Finally, the distribution of states is also comparable to the one of the COMPUSTAT firms. In Panel G, we report a breakdown of the sample per state for the 9 states with over 100 observations. The proportion of each state in our sample is almost identical with the distribution of states within a sample of all COMPUSTAT firms. The highest difference between a state's proportion in our and the COMPUSTAT sample is 2%: New Yorker firms constitute 10% of the COMPUSTAT sample and 8% of ours. California is the state with the highest number of observations (14%), followed by New York and Texas (6%).

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. The average CEO is 52 years old and has tenure of 4 years when he starts the contract. He holds 3% of voting shares, earns $664 million per year, of which 61% is incentive pay. Around half of the CEOs hold the position of the Chairman of the board at the same time.

We report a breakdown of the sample by year in Panel A of table 1. About a fifth of the sample contacts are at-will (22%), compared to the 15% of the Schwab and Thomas (2005) sample. At-will contracts were not popular in the years directly preceding 2000, the year in which Gillan, Hartzell and Parrino (2009) collected a sample of then valid contracts: Out of the 252 contracts starting in 1999, for instance, only 36 are at-will, or 14%, compared with the 13% at-will contracts of the Gillan, Hartzell and Parrino (2009) sample. 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. Most 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 (33%) common, as it is in the Schwab and Thomas (2005) sample.

Some contracts allow for renewal before contract expiration. We denote the length to the first of renewal or expiration date “duration”. Accounting for the first possible renewal date, the duration is most commonly below (87% including the at-will contracts) or equal to one year (12%). Evergreens, contracts that have an explicit term but are implicitly renewed every day,

constitute 1% 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 expiration as long as they do not leave office. In this fashion, the 3,717 contracts result into 12,334 firm-years combinations for which we have data on employment terms. Table 2 summarizes summary statistics for firm-year combinations. Of the 12,334 years, 35% are under the regime of an at-will agreement. This means that the 826 at-will CEO employment relationships in the sample remain valid for 5.3 years on average. The remaining 65% are years in which a CEO has an explicit termination date. This means the 2,871 CEOs with explicit termination dates remain in office for on average 2.8 years, similar to the original contract length agreed upon.

IV. Empirical results

IV.1 Methodology

A central concern in our analysis is whether performance is driven by the selection of firms into certain contract types. For example, firms with less investment opportunities may be more likely to choose at-will contracts. Estimation strategies that do not control for differences in investment potential will incorrectly attribute lower investment to the contract type only. This concern applies both to the choice between an at-will and a fixed-term contract and the choice of the contract length, which we address in different manners.

We overcome the potential endogeneity of the at-will vs. fixed-term contract choice by using firms' legal environment and its operating risk as natural causes that influenced the choice

of contract type independently from investment. Section IV.2 describes the estimations of the choice of contract type in more detail.

Briefly, we take advantage of the differences in court treatment of dismissals among states: at-will contracts are more popular in states in which employees are better protected against dismissals. Under the historical at-will doctrine dating back to the 19th century, the employer of an at-will employee can terminate the relationship for "*good cause, for no cause, or even for cause morally wrong, without being thereby guilty of legal wrong*"[1]. Between 1960 and 1980, however, both scholars and unions have debated the at-will doctrine, leading to various exceptions of the at-will rule in different states (see Blades, 1967; Matthews, 1975; Summers, 1976). For example, Montana, as the only state to statutorily modify the at-will employment rules, regards a discharge wrongful if: "*it was in retaliation for the employee's refusal to violate public policy or for reporting a violation of public policy; the discharge was not for good cause and the employee had completed the employer's probationary period of employment; or the employer violated the express provisions of its own written personnel policy*."[2] As a consequence, starting from the 1960s and more commonly in the 1980s, courts began to accept three main forms of so-called at-will exceptions: public policy exceptions, implied contract exceptions, and the breach of and implied covenant of good faith and fair dealing, the most relevant for CEO employment (for an overview, see Murg and Scharman, 1982, or Muhl, 2001). Under the public policy exception, dismissal is not allowed if it would violate the state's public policy or a statute. Under the implied contract exception, an employee can dispute his dismissal if he can prove the existence of an implicit, although not written contract. While these exceptions are less relevant in the case of the mostly quite detailed CEO employment contracts, the third

[1] Payne v. Western & Atlantic Railroad Co., 81 Tenn. 507, 519-520, 1884 WL 469 at *6 (Sep. term 1884).
[2] Wrongful Discharge from Employment Act (WDEA). Mont. Code. Ann. § 39-2-904 (2008)

form of exception represents a far broader form of employee protection. States that recognize the exception of good faith and fair dealing require dismissal decisions to be subject to a "just clause" standard. Terminations made in bad faith or motivated by malice are prohibited.

The legal differences among states have a significant impact on the choice of contract types. Miles (2000) shows that the following the adoption of an exception, temporary employment increases by 15%. In our dataset, firms based in states that adopt the good faith and fair dealing exception are almost twice as likely to choose an at-will contract ($t = -6.63$). In these states, the average contract length is also significantly lower than in other states ($t = 4.96$). Nevertheless, at-will exception states still provide a mixed distribution of contract types. On average, 35% of all contracts in states with a good faith and fair dealing exception are at-will. The exception does not seem to be correlated with investment levels. The correlation between capital expenditure, normalized by sales, and the exception is 1.1%. The correlation between the growth in capital expenditure and the exception is 3.8%.

To provide a better estimate of the choice of contract type, we complement the at-will exception state location with operating risk variables. Gillan, Hartzell and Parrino (2009) discuss the relationship between the choice of contract length and operating risk. In particular, they show that firms choose longer contracts 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 (2009), 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.

The estimates of the relationship between performance and the remaining contract length may also be driven by factors underlying the choice of contract length. Specially, firms may choose a long contract if they need to make long-term investments. This only introduces bias in the presence of differing contract length, however. That is, we can circumvent this problem by restricting our sample to contracts of the same length. In order to control for selection bias, we use the procedure of Heckman (1979) with the variables described above in the context of the instrumental regression. Note that this procedure yields more accurate results for longer-term contracts: the first-stage regression rather describes a choice between short-term and long-term contracts than between short-, long- and mid-term contracts. In order to avoid inaccuracies arising from this problem, we choose the sample of five-year contracts for this purpose.

IV.2 The choice of contract terms

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. Tobin's Q is significantly higher for firms that are going to employ at-will CEOs (t = -2.34). Furthermore, sales volatility is higher in firms that enter fixed-term contracts with CEOs (t = -3.38). The other main variables of interest, ROA, stock returns, capital expenditure over sales, and R&D expenditure over sales, are not significantly different between firms with at-will and explicitly termed contracts (t = 1.78 for ROA, 0.21 for returns, 0.86 for capital expenditure over assets, and -0.87 for R&D expenses over assets).

Panel C shows the CEO and governance characteristics sorted by contract type. Most notably, firms that operate in states with at-will exceptions have a higher fraction of at-will contracts. This is consistent with our argument in the previous section and encourages us to use these legal aspects as instruments. In addition to the legal variables, we find only one significant difference between at-will and fixed-term CEOs: CEOs with a longer existing tenure more often sign contracts with explicit contract terms ($t = 2.54$). Because CEOs with higher tenure tend to have more bargaining power, this indicates that the CEO themselves may prefer contracts with longer terms. Our hypothesis 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.

We also report an industry breakdown in Panel H, suppressing industries with less than 100 observations. Of these industries, the group with the highest concentration of at-will contracts is the software industry, with 122 at-will vs. 311 fixed-term contracts. This seems consistent with Gillan, Hartzell and Parrino (2009) who argue that firms with high operating risks prefer limiting their contract risk with shorter contracts. The industry with the largest fraction of fixed-term contracts is the banking industry, with 485 fixed-term and 55 at-will contracts.

Table 3 reports the results of Probit regressions. In column 1, we test legal and risk variables against each other. First, note that states with an at-will exception for good faith and fair dealing are 30% more likely to issue at-will contracts ($t = 5.52$). This is consistent with our argument above as well as the findings of Miles (2000). Other at-will exceptions are not

significantly related to the proportion of at-will contracts. These provisions are more restrictive than the exception for good faith and fair dealing. Second, we confirm the finding of Gillan, Hartzell and Parrino (2009) that operating risk is relevant for the choice of contract type. In particular, firms industries with higher sales volatility are more likely to issues a CEO contract at-will (t = 3.87). The relationship between the choice of at-will contracts and other risk measures is not significant. For our main specification laid out in column 2, we include the indicator for states with good faith and fair dealing and the industry sales volatility. We control for former CEOs and firm size. As in the Gillan, Hartzell and Parrino (2009) sample, larger firms are more likely to issue at-will contracts (t = 2.00), although not significantly in all specifications. The coefficient of an indicator of prevailing CEOs is not significant.

IV.3 Contract horizon and investment

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.

We regress the growth in 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 R&D expenditure. The literature shows that a number of variables affect investment. Polk and Sapienza (2009) argue that the market-to-book ratio can measure investment opportunities, but also mispricing, thus changing the price of invested capital. We include the first two lags of the market-to-book ratio. Polk and Sapienza (2009) also use discretionary accruals as a measure of mispricing and show that it is related to investment (see also 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. 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. 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. 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 an indicator variable that equals zero if the governance index is missing and one else. We also include an indicator variable that equals one if the CEO is also the chairman, as this allows him more flexibility. 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 and tenure 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 industry and year indicators. As described in section IV.1, we instrument at-will contracts with the legal and risk variables introduced in section IV.2.

Table 4 summarizes the results. At-will CEOs invest significantly less than their peers (t = -2.66). On average, an at-will CEO increases CAPEX by around 64% and R&D expenses by 33% less than his peers. Note that the investment measures 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 investment

policy, firms with at-will contracted CEOs decrease their investments subsequently. The instruments are jointly significant ($p < 0.01$) in the first stage.

Next, we analyze if CEO behaviour changes with his or her contract horizon and report the results in column 2. Specifically, we measure investment 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. All other control variables remain the same. In order to eliminate potential bias from the higher number of firm-year observations of longer-term contracts, we repeat the analysis with only 5-year contracts. Here, we compute the Mill's ratio with a regression where the dependent variable equals one for all five-year contracts over the same independent variables.

For fixed-term CEOs, investment decreases over the course of a contract, and most pronouncedly so for the change in CAPEX. Firms invest more when the CEO contract has a higher number of remaining years ($t = 2.12$). One more year remaining translates into 2% more growth in CAPEX. The effect is more pronounced when we restrict the sample to 5-year contracts. One more year remaining in a 5-year contract translates into 5% higher growth in CAPEX. That is, CEOs increase CAPEX by 25% more in the first than in the last year of a 5-year contract. Note that due to the reduced number of observations, this coefficient is only significant on a 10% level ($t = 1.78$). The result is similar when we apply the same technique to

R&D expenses. One more remaining contracted year translates into 5% higher growth in CAPEX (t = 1.90).

Of the control variables, firms invest more when they are larger, their leverage is low, when their market-to-book ratio is higher, and when the governance index is larger (indicating bad governance). Inconclusive is the relationship between investment and the fraction of institutional investors, which changes its sign across specifications. Other coefficients are not significant and rather small.

Our evidence supports the underinvestment hypothesis. At-will CEOs and CEOs with fixed-term contracts closer to expiration invest less than their peers. We do not find evidence for overinvestment. According to the overinvestment hypothesis, CEOs make larger investments before elections. This could include non-regular investments such as acquisitions. We do not find any significant difference in the number of acquisitions made between election year and non-election year CEOs (t = 0.20).

IV.4 Contract horizon and profitability

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 company

characteristics that have been shown to impact earnings. Larger firms have more market power and therefore should be more profitable. We control for firm size by including the log of book assets. 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, an indicator variable that equals one for CEOs who are also Chairman of the same firm, the executive's age and his tenure. Finally, we include industry and year indicator variables. As before, we instrument the at-will indicator as outlined in section IV.1 and include the Heckman's Lambda from the contract selection stage when we conduct regressions without at-will contracts.

Results are shown in table 5. Contrary to Stein's (1989) prediction, firms with at-will CEOs are not more profitable. The coefficient on the indicator variable for at-will contracts is negative ($t = -2.47$). The instruments are jointly significant ($p < 0.01$). Firms with more remaining CEO contract years are more profitable – around 0.2% per remaining year ($t = 2.12$). This effect is more pronounced for 5-year contracts. For each remaining year in a 5-year CEO employment contract, profitability is higher by 1% ($t = 4.05$).

The control variables affect earnings in the following manner. Larger firms 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. Finally, Chairman-CEOs and CEOs with higher tenures are also associated with higher profitability.

Overall, we do not find support for the hypothesis that CEOs underinvest in order to boost their earnings. If it was their intention, they did not succeed: profitability is still lower for

at-will CEOs. Furthermore, firms are more profitable when the CEO is further away from his election. This indicates that CEOs work harder in their first years – but not that they try to boost their earnings in the last year.

IV.5 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 book leverage, and the Herfindahl index. Also, we include an indicator for firms incorporated in Delaware because Daines (2001) finds that these firms have higher valuations. As above, we control for the governance index of

Gompers, Ishii and Metrick (2003), Chairman-CEOs, CEO age and tenure. In the regression where we include CEOs at-will, we instrument the at-will indicator with the first stage variables described in Section IV.2. In the regressions where we exclude CEOs at-will, we control for the selection with Heckman's Lambda as described above. Finally, we include year indicator variables.

Tobin's Q should also be related to investment: firms with higher investment and investment opportunities should have a higher firm value. Because we have shown that CEOs with at-will contracts invest less on average, however, the estimates on the at-will indicator may be biased if we include investment as a regular independent variable. To circumvent this problem, we start by estimating investment (measured as CAPEX over sales) simultaneously with the specification described in Section IV.3. The results are reported in column 1 of Table 6. Controlling for investments, the coefficient on at-will contracts is positively related to firm value ($t = 6.08$). This changes if we leave out the investment variable. We report the results in column 2. In a regular 2-stage regression excluding investment as an independent variable, the coefficient on the at-will indicator is negative and significant ($t = 2.06$). That is, at-will contracts have a negative influence on firm value, but primarily so via its negative influence on investments. Controlling for investments, at-will contracts may actually have a positive influence on firm value. This is consistent with the argument that at-will contracts, with their implicit threat of dismissal, induce more discipline on the CEO. Note that in both specifications, the instruments are jointly significant ($p < 0.01$). Note also that Qs of firms with at-will contracts are significantly *higher* in the year prior to the employment agreement, that is, this effect is not likely to be due to a selection bias.

The results on fixed-term contracts differ from this. In column 3, we report the results of a regression of Tobin's Q on the number of remaining years, in which we estimate CAPEX over sales in a first stage as described above. The number of remaining years is positively associated with Tobin's Q ($t = 2.46$). That is, CEOs with longer horizons improve firm value over and above the underinvestment effect of myopia. Note that the instruments are jointly significant ($p < 0.01$). The coefficient on the number of remaining years stays positive if we leave out the investment variable. That is, both the overall effect of a long horizon and the effect above investments are positive. This makes sense as less remaining years do not pose a dismissal threat nearly as strong as the one of at-will contracts, which can be terminated any day.

All control variables are related to Q in the manner documented in literature. Higher investment levels are positively associated with Tobin's Q. We confirm the Delaware premium found by Daines (2001). The effects on the Herfindahl index, leverage, the Chairman-CEO indicator, the CEO's age and tenure are not robust, as they flip their signs across specifications and are significant only in some of them.

V. Conclusion

With a sample of 3,717 CEO employment contracts from 1989 to 2008, we show that firms with short term CEO contracts underinvest. We cannot support the argument that CEOs do so in order to improve short-term firm value. CEOs with shorter horizons are associated with lower earnings.

The underinvestment effect translates into firm value. Firms with shorter horizons CEOs trade at a discount to their peers. We find a lower market-to-book value for CEOs with at-will

contracts as well as for CEOs with shorter remaining fixed-term contract horizon. For at-will contracted CEOs, this effect seems to be dominated by the lack of investment. Controlling for the effect on investment, at-will CEOs are actually associated with a higher market-to-book ratio. This may be due to the disciplining effect of at-will contracts, which can be terminated by the firm any day.

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 concentrate the effect into the end of contract terms. Contract horizon is a powerful tool in executive incentivation. 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 cyclicality patterns. This, in turn, will have impact on stock price cycles.

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FIGURE I

AVERAGE CONTRACT LENGTH PER YEAR

This graph shows the mean contract length per year. Table 1, Panel F provides the numbers underlying the graph.

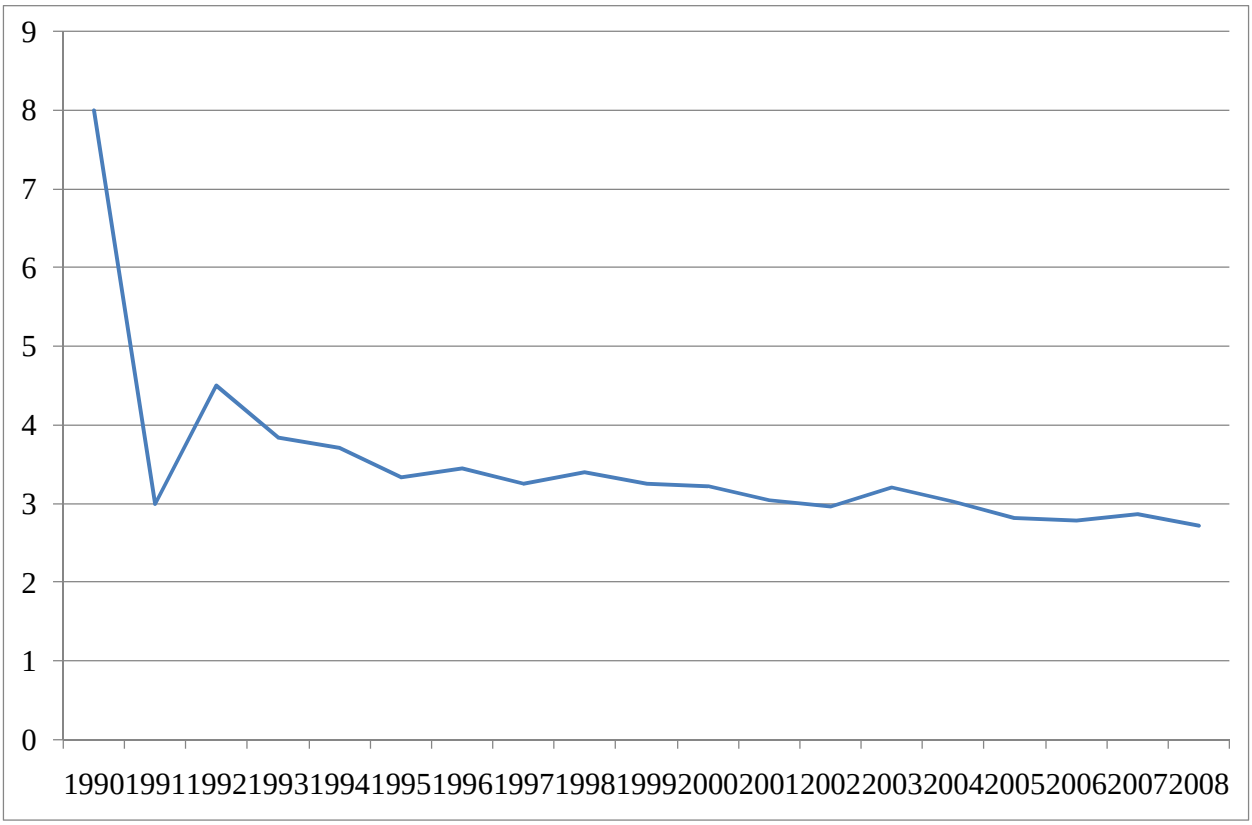

TABLE I

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.

Panel A: Number of contracts per year

Year	Total sample	fixed term	at will
1989	3	0	3
1990	4	1	3
1991	7	1	6
1992	10	6	4
1993	18	13	5
1994	65	45	20
1995	111	77	34
1996	181	153	28
1997	199	159	40
1998	239	179	60
1999	252	216	36
2000	303	242	61
2001	291	221	70
2002	289	241	48
2003	338	262	76
2004	367	293	74
2005	340	255	85
2006	303	233	70
2007	345	258	87
2008	52	36	16
Total	3,717	2,891	826

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 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 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. CAPEX/sales is capital expenditures over sales, and R&D/sales is research and development expense over sales. All numbers are measured in the last fiscal year ending before the start date of the contract. All numbers except for indicator variables and discrete variables are winsorized at the 1% level.

Panel B: Average firm and industry characteristics by contract

	N	Total sample	fixed term	at will	t-statistic of differences
Q	3,358	2.52	2.47	2.73	(2.34)
Assets	3,715	1,181.62	1,200.33	1,116.19	0.97
ROA	3,653	-0.7%	-0.4%	-1.7%	1.78
Leverage	3,714	21.9%	23.5%	16.1%	5.31
Industry sales volatility	3,717	1,138.40	1,123.84	1,189.38	(3.38)
Industry survival rate	3,717	98.7%	98.8%	98.3%	1.49
Market adj. returns	2,240	8.0%	8.0%	7.8%	0.21
Industry homogeneity	3,717	27.9%	27.8%	28.0%	(0.07)
Capex/sales	3,398	11.3%	11.1%	11.9%	0.86
R&D expense/sales	1,889	39.3%	38.3%	42.1%	(0.87)

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 an indicator variable 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 indicator variable; 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. At-will (public policy), at-will (implied contract) and at-will (good faith & fair dealing) are indicator variables the equal one if the contract is governed by the law of a state with at-will exception of the mentioned type. All numbers are measured in the last fiscal year ending before the start date of the contract. All numbers except for indicator and discrete variables are winsorized at the 1% level.

Panel C: Average CEO and governance characteristics by contract

	N	Total sample	fixed term	at will	t-statistic of differences
Age	3,606	51.87	51.98	51.47	1.62
Old CEO	3,717	25%	25%	26%	0.98
Tenure	3,717	3.76	3.89	3.31	2.54
Over 60	3,717	0.14	0.14	0.13	1.05
% CEO voting power	615	3.34	3.64	2.26	1.61
Salary	1,043	663.85	671.48	638.47	1.21
Incentive to total compensation	1,042	61.0%	61.5%	59.6%	0.92
Abnormal compensation	1,029	223.29	439.76	(492.23)	1.33
Governance index	3,717	2.38	2.33	2.57	(1.43)
Chairman and CEO	3,537	52.3%	53.0%	49.9%	1.58
at-will (public policy)	3,717	72.8%	71.4%	77.7%	(3.61)
at-will (implied contract)	3,717	66.6%	65.5%	70.7%	(2.81)
at-will (good faith and fair dealing)	3,717	25.8%	23.2%	34.6%	(6.63)

Panel D shows the number of contracts sorted by length.

Panel D: Number of contracts sorted by length

Length (years)	Frequency	Percent	Cumulated
0	842	22.65	22.65
1	329	8.85	31.50
2	508	13.67	45.17
3	1,252	33.68	78.85
4	267	7.18	86.04
5	416	11.19	97.23
6	60	1.61	98.84
7	21	0.56	99.41
8	6	0.16	99.57
9	4	0.11	99.68
10	8	0.22	99.89
11	1	0.03	99.92
13	1	0.03	99.95
15	1	0.03	99.97
18	1	0.03	100.00
Total	3,717		

Panel E shows the number of contracts per firm.

Panel E: Number of contracts per firm

# contracts	Frequency	Percent	Cumulated
1	1,299	54.79	54.79
2	705	29.73	84.52
3	241	10.16	94.69
4	80	3.37	98.06
5	25	1.05	99.11
6	12	0.51	99.62
7	5	0.21	99.83
8	1	0.04	99.87
9	2	0.08	99.96
10	1	0.04	100
Total	2,371		

Panel F shows the average contract length per year for fixed-term contracts.

Panel F: Contract length per start year

Year	Total sample	Fixed term
1990	2.00	8.00
1991	0.43	3.00
1992	2.70	4.50
1993	2.78	3.85
1994	2.57	3.71
1995	2.32	3.34
1996	2.91	3.44
1997	2.61	3.26
1998	2.54	3.40
1999	2.80	3.26
2000	2.57	3.22
2001	2.31	3.05
2002	2.48	2.97
2003	2.48	3.20
2004	2.43	3.04
2005	2.11	2.81
2006	2.15	2.79
2007	2.15	2.88
2008	1.88	2.72

Panel G reports a breakdown of the contracts by state. It excludes states with less than 100 contracts. It reports the total number of contracts and the number of at-will and fixed term contracts per state, as well as the percentage of the firms located in the respective state as a percentage of all firms in the COMPUSTAT database.

Panel G: Breakdown by state							
State	**N**		**fixed term**		**at-will**		**Compustat distribution**
CA	604	14%	392	65%	212	35%	14%
IL	178	4%	125	70%	53	30%	5%
MA	157	4%	112	71%	45	29%	4%
TX	265	6%	213	80%	52	20%	7%
NY	373	8%	309	83%	64	17%	10%
PA	183	4%	153	84%	30	16%	3%
NJ	191	4%	163	85%	28	15%	4%
FL	190	4%	155	82%	35	18%	5%
OH	147	3%	127	86%	20	14%	2%

Panel H reports a breakdown of the contracts by Fama-French 49 industry. It excludes industries with less than 100 contracts. It reports the total number of contracts and the number of at-will and fixed term contracts per industry.

Panel H: Breakdown by industry			
Industry	**at-will**	**fixed-term**	**Total**
Software	122	311	396
Medical equipment	43	139	169
Chips	48	191	228
Drugs	69	272	339
Wholesale	27	130	146
Business Services	51	236	286
Trading	27	171	199
Insurance	18	106	137
Communication	21	131	160
Oil	16	101	127
Retail	34	225	272
Banking	55	485	548

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. 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. Governance index is the index developed by Gompers, Ishii and Metrick (2003). The board is considered busy if 50% or more of the board members hold three or more board seats. All numbers except for indicator and discrete variables are winsorized at the 1% level.

Panel A: Average contract horizon characteristics by firm and year

	N	Total sample	fixed term	at will
Chairman and CEO	12334	0.53	0.56	0.47
Tenure	12334	5.58	5.61	5.53
Age	12334	52.81	52.91	52.63
Over 60	12334	0.20	0.20	0.19
Governance index	12334	2.35	2.15	2.72
Busy board	3019	0.5%	0.6%	0.4%

Panel B shows average firm characteristics. Capex/sales is the ratio of capital expenditures over assets; R&D/sales is the ratio of research and development expense over sales; 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 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. 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; Herfindahl index is the Herfindahl index of the industry. All numbers except for discrete variables are winsorized at the 1% level.

Panel B: Average firm characteristics by firm and year

	N	Total sample	fixed term	at will
Capex/sales	11395	11.00%	10.89%	11.20%
R&D/sales	6381	41.01%	40.99%	41.05%
ROA	12092	-0.87%	-0.54%	-1.47%
Q	11488	2.47	2.40	2.60
Acquisitions (firm)	12334	0.54	0.54	0.54
Returns	8471	1.74%	1.57%	2.04%
Turnover	8468	1.43	1.36	1.56
Governance index	12334	2.35	2.15	2.72
Leverage	12328	21.24%	22.75%	18.50%
Assets	12332	1272.73	1271.33	1275.29
Herfindahl index	12334	0.02	0.02	0.02

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. At-will (public policy), at-will (implied contract) and at-will (good faith & fair dealing) are indicator variables the equal one if the contract is governed by the law of a state with at-will exception of the mentioned type. Former CEO equals one if the CEO was already the CEO of the firm in the year before the contract starts. Log sales the natural logarithm of sales. Industry sales volatility is the 49 Fama French industry average of the variance in revenues in the seven past years. 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 indicator and discrete variables are winsorized at the 1% level. This table shows coefficients and t-statistics underneath.

Dependent variable	**At will contract**	
	(1)	**(2)**
At-will (public policy)	0.064	
	(1.09)	
At-will (implied contract)	0.075	
	(1.435)	
At-will (good faith & fair dealing)	0.301***	0.338***
	(5.522)	(6.612)
Former CEO	-0.095	-0.099
	(-0.811)	(-0.845)
Log sales	0.017	0.019*
	(1.756)	(2.003)
Industry sales volatility	0.000***	0.000***
	(3.871)	(3.727)
Industry survival rate	-0.352	
	(-1.34)	
Industry homogeneity	0.045	
	(0.834)	
Constant	-0.881**	-1.129***
	(-3.257)	(-15.659)
N	3,717	3,717

* 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 the year-on-year growth in capital expenditures as the dependent variable. Panel B shows the results of the regression with the year-on-year growth in research and development expenses as the dependent variable. In both Panels, column 1 is a two-stage regression in which the at-will indicator is instrumented with the regression reported in Table III, column 2. Panel A, column 2 shows a regression including all firms with fixed-term contracts. Panel A, column 3 and Panel B, column 2 show regressions including only firms with 5-year contracts.

The dependent and independent variables are the following. At-will is an indicator variable 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. 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. 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. Log assets is the natural logarithm of book assets. 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. ROA is return over assets; leverage is net debt over assets; tangibility is 1 minus the fraction of intangible assets over total assets;; governance index is the index developed by Gompers, Ishii and Metrick (2003); the governance dummy 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 age of the CEO; tenure is the number of years since the CEO started to be CEO at the respective firm; fraction of individual investors is 1 - the ownership fraction of insiders as reported in the 13f database of Thomson; tenure is the number of years that the CEO has served as a CEO in the relevant firm. Lambda is the Heckman's Lambda from the regression as shown in table 3, column 2. In column 2 of Panel A, Lambda is the Heckman's Lambda from a regression where the independent variable is 1 - the at-will indicator. In column 3 of Panel A and in column 2 of Panel B, Lambda is the Heckman's Lambda from a regression where the independent variable is an indicator for five-year contracts. All regressions include indicator variables for years and Fama-French 49 industries.

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, except for Q, which is measured one and two years before the last fiscal year, respectively. All variables except for indicator and discrete variables are winsorized at the 1% level. This table shows coefficients and t-statistics underneath.

	Panel A: Capex			Panel B: R&D expense	
	(1)	(2)	(3)	(1)	(2)
At will	-0.639**			-0.334***	
	(-2.656)			(-3.51)	
Remaining Years		0.020*	0.054		0.046
		(2.122)	(1.775)		(1.903)
Q (lag 1)	0.059***	0.057***	0.068**	0.026***	0.038**
	(8.312)	(7.832)	(3.205)	(6.91)	(2.816)
Q (lag 2)	-0.024***	-0.029***	-0.043*	-0.002	-0.011
	(-3.376)	(-4.052)	(-2.084)	(-0.534)	(-0.806)
KZ index	-0.003	-0.003	-0.009	0	-0.004
	(-1.137)	(-1.399)	(-1.21)	(0.094)	(-0.9)
Log assets	0	0.001**	0.001*	0	0
	(1.912)	(2.696)	(2.289)	(1.396)	(-0.324)
Accrual	-0.098	0.004	-0.148	0.045	0.259
	(-0.928)	(0.036)	(-0.434)	(0.737)	(1.253)
ROA	-0.271***	-0.218***	-0.003	-0.081**	0.168
	(-5.164)	(-4.63)	(-0.016)	(-2.817)	(1.608)
Leverage	-0.281*	-0.106	-0.125	-0.228***	-0.334
	(-2.488)	(-0.995)	(-0.363)	(-3.456)	(-1.399)
Tangibility	0.002	0.002	-0.002	-0.001	-0.007
	(0.234)	(0.152)	(-0.07)	(-0.14)	(-0.323)
Governance index	0.320**	0.260*	0.257	0.074	0.094
	(3.093)	(2.49)	(0.976)	(1.118)	(0.456)
Governance dummy	0.044	0.075*	-0.076	0.009	-0.09
	(1.24)	(2.184)	(-0.666)	(0.418)	(-1.102)
Chairman and CEO	-0.003	-0.001	0.004	-0.002	0.005
	(-1.165)	(-0.572)	(0.604)	(-1.233)	(0.733)
Executive's age	-0.001	-0.003	-0.004	0.002	0.007
	(-0.464)	(-1.007)	(-0.593)	(1.356)	(1.322)
Tenure	0.056	0.037	0.159	-0.016	-0.011
	(1.033)	(0.682)	(1.065)	(-0.448)	(-0.082)
Fraction individual investors	dropped	-0.041***	0.033	0.019*	0.029
		(-3.523)	(0.802)	(2.36)	(1.017)
Lambda		-0.289*	-9.081***		-3.871*
		(-2.375)	(-3.792)		(-2.369)
Constant	1.051	3.880**	0.757	1.519*	-0.471
	(1.402)	(3.044)	(0.552)	(2.467)	(-0.5)
Year indicators	Yes	Yes	Yes	Yes	Yes
Industry indicators	Yes	No	Yes	Yes	Yes
N	6,735	4,277	893	3,092	358

* 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. Column 1 is a two-stage regression in which the at-will indicator is instrumented with the regression reported in Table III, column 2. Column 2 shows a regression including all firms with fixed-term contracts. Column 3 shows a regression including only firms with 5-year contracts.

At-will is an indicator variable 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. Log assets is the natural logarithm of book assets; the Herfindahl index is the 49 Fama French industry Herfindahl index measured in sales; 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; tenure is the number of years since the CEO started to be CEO at the respective firm. Lambda is the Heckman's Lambda from the regression as shown in table 3, column 2. In column 2, Lambda is the Heckman's Lambda from a regression where the independent variable is 1 - the at-will indicator. In column 3, Lambda is the Heckman's Lambda from a regression where the independent variable is an indicator for five-year contracts. All regressions include indicator variables for years and Fama-French 49 industries.

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 indicator variables and discrete variables are winsorized at the 1% level. This table shows coefficients and t-statistics underneath.

Dependent Variable	**ROA**		
	(1)	**(2)**	**(3)**
At will	-0.135*		
	(-2.47)		
Remaining Years		0.002*	0.010***
		(2.125)	(4.047)
At will x high turnover probability			
At will x low turnover probability			
Remaining years x high turnover prob.			
Remaining years x low turnover prob.			
Log assets	0.048***	0.044***	0.040***
	(46.282)	(44.442)	(13.694)
Herfindahl index	0.421	0.538	0.549
	(1.089)	(1.363)	(0.431)
Governance index	-0.002*	-0.003**	-0.003
	(-2.153)	(-3.154)	(-1.496)
Governance index not missing	-0.009	-0.01	0.004
	(-0.87)	(-1.107)	(0.173)
Chairman and CEO	0	0.010***	0.004
	(-0.094)	(3.414)	(0.457)
Executive's age	0	0	0.001
	(-0.753)	(-1.481)	(1.381)
Tenure	0.001***	0.001***	0.001*
	(5.684)	(6.09)	(1.992)
Lambda		-0.01	0.754***
		(-0.387)	(4.431)
Constant	-0.224*	-0.362***	-0.517**
	(-1.999)	(-3.64)	(-3.149)
Year	Yes	Yes	Yes
Industry	Yes	Yes	Yes
R-squared	30%	40%	43%
N	10,442	8,861	1,159

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

TABLE VI

CONTRACT HORIZON AND TOBIN'S Q

This table presents the coefficients from regressions of industry-adjusted Tobin's Q on the variables listed below. Column 1 and 2 report regressions in which the at-will indicator is instrumented with the regression reported in Table III, column 2. In column 1, 3 and 5, CAPEX/sales is instrumented with the regression reported in Table V. Column 3 and 4 show regressions including all firms with fixed-term contracts. Column 5 and 6 show regressions including only firms with 5-year contracts.

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 substracting 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 an indicator variable 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. CAPEX/sales is the ratio of capital expenditures over sales; leverage is the ratio of net debt over assets; Delaware equals one if the firm is incorporate in Delaware; log sales is the natural logarithm of sales; 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; executive's age is the age of the CEO; tenure is the number of years since the CEO started to be CEO at the respective firm. Lambda is the Heckman's Lambda from the regression as shown in table 3, column 2. In columns 3 and 4, Lambda is the Heckman's Lambda from a regression where the independent variable is 1 - the at-will indicator. In column 5 and 6, Lambda is the Heckman's Lambda from a regression where the independent variable is an indicator for five-year contracts. We also include year indicator variables.

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 indicator and discrete variables are winsorized at the 1% level. This table shows coefficients and t-statistics underneath.

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Dependent Variable	**Tobin's Q**					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
At will	2.446***	-0.372*				
	(6.079)	(-2.064)				
Remaining Years			0.023*	0.024**	0.043	0.038
			(2.461)	(2.967)	(1.903)	(1.85)
Capex/sales	14.339***		1.294***		1.169**	
	(13.728)		(8.083)		(2.998)	
Leverage	0.650***	-0.695***	-0.493***	-0.601***	-0.444***	-0.534***
	(5.039)	(-19.239)	(-10.663)	(-15.665)	(-4.114)	(-5.74)
Delaware	0.106***	0.078***	0.054	0.102***	0.044	0.086
	(4.275)	(3.479)	(1.794)	(3.869)	(0.636)	(1.398)
Herfindahl index	-4.541	-6.381*	-0.163	0.292	6.209**	4.814*
	(-1.448)	(-2.317)	(-0.172)	(0.343)	(2.928)	(2.525)
Governance index	0.033	-0.01	-0.016	-0.014	-0.033	-0.027
	(1.771)	(-1.387)	(-1.571)	(-1.56)	(-1.709)	(-1.516)
Governance index not missing	-0.021	-0.179*	-0.273**	-0.273**	-0.354	-0.334
	(-0.123)	(-2.468)	(-2.754)	(-3.066)	(-1.891)	(-1.931)
Chairman and CEO	0.019	0.069**	0.080*	0.092***	-0.026	0.007
	(0.332)	(3.024)	(2.512)	(3.342)	(-0.348)	(0.111)
Executive's age	0.003	-0.004**	-0.004*	-0.006***	0.003	0
	(0.951)	(-2.809)	(-2.072)	(-3.415)	(0.525)	(0.074)
Tenure	0.020***	0.002	0.003	0.001	-0.003	-0.005
	(4.411)	(1.347)	(1.266)	(0.572)	(-0.621)	(-1.294)
Lambda			0.239	-0.073	3.879**	2.700*
			(1.933)	(-0.695)	(2.868)	(2.455)
Constant	-0.978	1.656	-0.01	1.772*	-1.492	-0.484
	(-0.884)	(1.51)	(-0.009)	(2.329)	(-1.692)	(-0.979)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	8,171	10,223	5,220	6,398	1,048	1,264