

# THE COSTS AND BENEFITS OF LONG-TERM CEO CONTRACTS

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## Abstract

This paper uses a new data set of 3,954 US CEO employment agreements to study their contractual time horizon. Longer contracts offer protection against dismissals: turnover probability increases by 12% each year closer to expiration. This should encourage CEOs to pursue long-term projects, and CEOs with more contractual time indeed invest more. However, because longer contracts make it harder to dismiss managers, they also impose less discipline. Consistent with this argument, CEOs with a longer contractual horizon receive more salary increases. Overall, firm value does not differ across contract types.

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Executives are often accused of myopia, i.e., failing to invest in projects that only improve long-term shareholder value.<sup>1</sup> Much of this discussion has focused on incentive pay. This paper seeks to draw attention to another, less explored dimension of executive incentives: the contract horizon. Long-term contracting differs from long-term incentive pay: it determines the ease of dismissal and therefore affects discipline. A long contract term promises the executive that he will not get fired if payoffs do not materialize quickly. However, it also allows him to underperform for other reasons without an immediate threat of dismissal. Contract design faces a trade-off between these effects.

Many US chief executive officers (CEOs) operate under fixed-term employment agreements. Dismissal before the contractual termination date is costly and can lead to litigation. Since remaining contract length decreases over time (and changes upon renewal), I am able to track the behavior of a given CEO under the same contract, but a different horizon. Based on 3,954 of these documents, I find that contracts matter. Using a hazard model, I estimate the likelihood of turnover as a function the contract horizon and tenure. One year closer to the expiration date translates into a 12% higher probability of termination.

Contracts affect the CEO's decisions. The focus of the debate on "economic short-termism" is the hypothesis that myopic managers fail to make investments in projects with long-term payoffs (e.g., Dechow and Sloan, 1991; Froot et al., 1992, Asker et al., 2011). Consistent with this view, I find a positive impact of the expected CEO horizon on investment. CEOs with a shorter contract term invest less in CAPEX and R&D than their peers do. Holding the identity of the CEO constant and controlling for firm characteristics, each additional year remaining to expiration translates to 0.3% CAPEX and 0.2% higher R&D expenses as a fraction of assets. That is, a CEO who has five years remaining under his contract on average invests 1.5% of assets into CAPEX than in his last year. With an average

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<sup>1</sup> Effects of a short executive horizon ("myopia") have been discussed by, among others, Narayanan (1985), Stein (1988), Stein (1989), Froot et al. (1992), and Bolton et al. (2006). Laverly (1996) provides an overview of the strategy literature on this topic.

firm size of \$1.8 million, this translates to \$5 million of CAPEX and \$4 million of R&D per year, or \$26 and \$18 million for five years.

A long contract term prolongs the decision horizon for investments—but it also protects the executive from dismissal if he reduces effort or engages in self-serving behavior. A CEO with little time remaining under his contract should therefore have a greater incentive to exert more (short-term) effort for less compensation. Consistent with this argument, CEOs with a shorter contract horizon receive smaller salary increases. Holding the identity of the CEO constant and controlling for other compensation characteristics, base salary on average increases by 2.6% less for every year that approaches towards the end of the contract. In election years, salary on average decreases by 9.5%. CEOs with less time remaining under their contract also perform significantly better (albeit economically to an only small extent) in acquisitions. This indicates that CEOs with a shorter horizon are not only more restrictive, but also more careful in choosing their investments.

Contract design faces a trade-off between these effects. Von Thadden (1995) and Edmans (2011) describe a similar dilemma in a debt structuring setting (without employment horizon). A short contract horizon makes it easier for the firm to dismiss non-performing CEOs, but also deters the executive from long-term investments. Empirically, neither the costs nor the benefits of horizon dominate. In terms of the stock returns or profitability, I find no significant effect of the contract horizon. In other words, there is no evidence that firms systematically write contracts that are too myopic or too long.

Throughout the analysis, I control for firm or compensation characteristics; in addition, all regressions except the analysis of acquisition control for executive-fixed effects. Not all CEOs sign fixed-term employment contracts. I control for selection into such contracts using a Heckman (1979) selection model based on the determinants that Gillan et al. (2009) document. The executive-fixed effects make it impossible to control for other time-varying

variables such as tenure and age: the results are similar when I remove fixed effects and control for tenure and age. The results are also robust in a subsample of firms that sign multiple contracts with different length and with firm-fixed instead of executive-fixed effects.

Empirical studies of CEO employment contracts are recent and few in number. Schwab and Thomas (2005) describe a sample of 375 contracts from a legal perspective. Gillan et al. (2009) show that many CEOs operate without an explicit contract, and study the choice between explicit and implicit contracts. I build on their work by showing the impact of contract horizon on career outcomes and performance. My findings imply that employment contracts affect decisions. This means that contract design is not trivial, and I hope that my work can give some first guidance on this matter.

More generally, this paper contributes to the literature on management horizon and turnover. The theoretical literature on horizon describes “myopic” as negative effects of short managerial horizon on investment (Narayanan, 1985; Stein, 1988; Stein, 1989; Bebchuk and Stole, 1993; Noe and Rebello, 1997; Chemmanur and Ravid, 1999, and Bolton et al., 2006). The literature on CEO turnover discusses effects of the ease of dismissal on monitoring and performance (Weisbach, 1988; Hartzell, 2001; Morck et al., 1989; Denis et al., 1997, and Mikkelsen and Partch, 1997). The following analysis, on the interface of the horizon and the turnover literature, argues that short managerial horizon trades off “myopia”, or negative effects on the investment horizon, and positive effects of discipline. A similar trade-off in spirit has been described by Von Thadden (1995) and Edmans (2011) in a debt financing setting.

Previous empirical work on horizon shows contradictory evidence on the relation between managerial horizon and investment, using dates such as the actual termination or retirement date to mark horizon (Dechow and Sloan, 1991; Gibbons and Murphy, 1992; Murphy and Zimmermann, 1993; Antia et al., 2010, and Gao, 2010). The employment contract data set, in

contrast, provides an ex ante measure of horizon. As contract horizon declines over time but increases at renewals, it introduces more variation in horizon than one single date or measure. This allows me to measure the effects of CEO horizon more precisely.

Finally, contract length and type are direct determinants of CEO turnover. As a consequence, this analysis of contract characteristics contributes to the empirical literature that measures effects of monitoring and ownership on executive turnover.<sup>2</sup> Isolating contractual turnover explains a greater fraction of dismissals and makes it easier to identify effects of other mechanisms.

## 1. DATA

### 1.1. *Sample*

The Securities Exchange Act of 1934, Regulation S-K, Item 402 requires the disclosure of terms of employment contracts and agreements (here forth “contracts”) between US registrants and named executive officers. Following Schwab and Thomas (2005) and Gillan et al. (2009), I collect explicit contracts from SEC filing exhibits and, when possible, from The Corporate Library. For all S&P 1500 firms that do not file an explicit contract, I read all proxy filings and 10ks to obtain summaries of contract terms. Some executives sign at-will employment agreements that include compensation and severance clauses, but do not specify any employment period. These are not included in the sample. I exclude agreements that have not yet been valid (e.g., applicable following a change in control) and offers that have been rejected. I obtain separation dates from ExecuComp, Risk Metrics, or BoardEx and exclude contracts for it is unclear whether the CEO is still in office or when he left. For 81 renewals in 1994 and 1995 I use the renewal agreement to obtain the characteristics of the original contracts that were not filed electronically.

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<sup>2</sup> See Coughlan and Schmidt (1985), Warner, Watts and Wruck (1988), Weisbach (1988), Gilson (1989), Denis, Denis, and Sarin (1997), Huson, Parrino, and Starks (2001), Jenter and Kanaan (2010) and Jenter and Lewellen (2010).

The procedure yields data for 3,954 employment fixed-term contracts for 2,964 CEOs by 2,901 firms entered between 1992 and 2008. Table 1 reports descriptive statistics. Accounting data are reported for the year prior to the start of the contract.

#### TABLE 1 HERE

Panel A of Table 1 reports the number of and average length (in years) of contracts per start year. The number of contracts ranges from 133 in 1995 to 349 in 2006, increasing over time. Contract length decreases steadily over time, from 3.77 in 1995 to 2.78 in 2008. This decline has paralleled increasing public pressure to increase accountability and decrease job security (and entrenchment) of CEOs. This movement has not been confined to the US. In the United Kingdom, CEO contract periods have decreased even more dramatically. While the average contract in 1992/93 lasted three years (Conyon, 1994), most UK companies have moved to one year contracts by 2011 (BIS, 2011).

#### 1.2. *Sample selection issues*

It is important to point out that while most companies disclose the length of their CEO's employment contract, some may omit disclosure even though their CEO is subject to a fixed-term contract. These CEOs are missing in the sample. Non-disclosure is likely to be more common among firms with more information asymmetry (Lang and Lundholm 1993). Investment incentives and discipline are more important for this set of CEOs: omitting them will possibly bias the magnitude of my findings downwards. It is therefore important to control for potential reporting bias.

To put the number of contracts in this sample into perspective: Gillan et al (2009) survey all S&P500 firms in 2000 on their CEO employment terms and find that 255, or 45%, of the CEOs had employment contracts. My sample contains 236 contracts that were in place in 2000 with S&P 500 firms: 19, or 3.8%, are missing. Because S&P 500 firms are larger, they

are likely to have better disclosure quality: the number of omitted contracts may be bigger for the rest of the sample.

Panel B reports summary information for the year before the contract start. The sample firms have a mean firm size in terms of book assets of \$1,756 million. Return on assets (ROA) averages 2% for the sample, the market-to-book ratio 2.62. Lang and Lundholm (1993) find that larger and better performing firms get better disclosure quality ratings by the Association for Investment Management and Research (AIMR). If the sample was biased towards firms with better reporting standards, it would contain larger and more profitable firms. This is not the case: a comparison with COMPUSTAT firms with no contract reveals that these firms are larger and more profitable, with mean assets of \$2,621 million and mean ROA of 7.1%. This also suggests that the sample bias within smaller firms may not be more accentuated. Industry adjusted (Brown and Hillegeist, 2007) AIMR scores in 1994 and 1995 (the last rankings before they were discontinued) were higher for firms that did not disclose a contract (100% vs. 93% for those that did). The sample firms also have a greater frequency of restatements (4.7%, vs. 4.5% for firms with no disclosed contract). Overall, these numbers do not suggest that firms outside the sample actually have a contract but a lower standard of disclosure. I will revisit this question with the selection discussion of Section III.

### *1.3. More descriptive statistics*

Panel B also reports the means for contracts ordered by their length. Firms with longer contracts are larger and more profitable. They spend equally much on capital investment compared to firms with shorter contracts but less on R&D. Typically, contracts are longer in industries with less exits and more homogeneous returns. Longer contracts are also more likely to be the first contract. CEOs with longer contracts have some characteristics of powerful executives: they have more voting power, are more likely to be Chairman, have a larger Gompers et al. (2003) governance index (a larger index means more dictatorial) and

receive more compensation. Ex-post, CEOs with longer contracts stay longer, with an average tenure at retirement of 7.95 for CEOs with five-year contracts vs. 6.28 years for CEOs with one-year contracts.

Panel C provides a list of the number of contracts by their length. Most contracts are less than six years long, with a mode of three (1,515 contracts), followed by two-year (741) and five-year contracts (551). Of the 39 contracts that are longer than ten years, 12 are explicitly linked to the executive's retirement age. In total, 28 contracts in our sample are explicitly linked to age. As Jenter and Lewellen (2011) document, this typically happens at the age of 65 (23 contracts) or around. Most of the 64 contracts with duration below one year are renewals effective until the end of the respective calendar year (38 contracts); the remaining 26 contracts are for interim CEOs. Evergreens, contracts that are automatically renewed every day or month to retain the same contract length, are not frequent, with a total of 73 contracts. I list the percentage of a specific length out of all contracts of the (sub-) sample underneath the number. The distribution for first contracts and renewed contracts are quite similar to each other. At the renewal, CEOs tend to receive more evergreen contracts and longer contracts, but also extremely short ones.

Employment contracts are typically governed by the law of the state where labor is located. In the case of the CEO, this is usually the state of the headquarter (and casual observation of the contracts confirms this hypothesis). Panel D provides the number of contracts by headquarter state for the 15 states with the largest number of contracts in the sample, obtained from the filing. Most firms are based in California, followed by New York and Texas. This is similar to the overall distribution of firms within the COMPUSTAT database.

Panel E provides the number of contracts by industry for the 15 industries with the largest number of contracts. Typically, industries with long-term investment needs such as utilities



have longer contracts (average length of 4.03) and more volatile sectors such as medical equipment shorter ones (average length of 2.78).

## 2. SOME STYLIZED FACTS ON CEO CONTRACTS

### 2.1. *Contract length in a legal context*

In a fixed-term employment contract, the firm commits to paying compensation for a certain number of years; this remains valid after possible premature termination. As an immediate consequence, the cost of termination is increasing in the numbers of years remaining under the contract. Upon early termination, the executive is typically entitled to a multiple of the base salary and the minimum bonus, but this sum can be augmented contractually. As an example, take John Mack's 2005 five-year contract with Morgan Stanley:

*If, during the Employment Period, the Company shall terminate the Executive's employment other than for Cause, death or Disability or the Executive shall terminate employment for Good Reason: (i) the Company shall pay to the Executive in a lump-sum cash payment as soon as practicable after the Date of Termination the aggregate of the following amounts:*

*...an amount equal to the product of (1) the Executive's Total Compensation for the most recently completed fiscal year and (2) the greater of (x) a fraction, the numerator of which is the number of days from the Date of Termination through the fifth anniversary of the Effective Date, and the denominator of which is 365 and (y) 1.[...]<sup>3</sup>*

Hence, in Mr. Mack's case, the cost of dismissal prior to contract expiration is the product of his total compensation and the number of years remaining until the contractual termination date. The total compensation of Mr. Mack was \$45 million in 2006, the first year of his employment contract, and so severance pay for termination in 2006 would have exceeded

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<sup>3</sup> Morgan Stanley, Form 8K, filed September 22, 2005, Exhibit 10.

\$182 million. Assuming that compensation remains at this level, severance pay in 2009 would have been \$45 million, which is \$137 million less.<sup>4</sup>

## 2.2. *Contract horizon and realized tenure*

Morgan Stanley's operating income in 2009 was over \$1 billion. While \$137 million is a non-trivial amount, it seems less so compared with the firm value a CEO can destroy. Also, fixed-term contracts are renewable, typically with a 30 day notice period before the expiration date. If renewal happens always and automatically, contracts should have no effect. However, contracts may matter over and above the strictly legal consequences of breach on severance pay. The contractual employment horizon can serve as a signal of commitment: it shows a mutual understanding between the CEO and the board on the CEO's evaluation period. For example, some investment projects can be initially unpopular and take time to become profitable. A long evaluation period allows the CEO to work without an immediate threat of dismissal. It can therefore prolong the CEO's decision horizon.

### TABLE 2 HERE

Before we begin the analysis, it is therefore important to see whether CEO employment contracts are at all related to tenure and the time of retirement. Table 2 provides sample means for the years in which the contracts are effective, capped at 2008. In the first line, it reports the incidence of CEO turnover, that is, in how many of the years the CEOs leave the firm. In Panel A, I report the average for different employment types. CEOs without a contract leave their position in 9.2% of all years, compared to 7.6% for CEOs with fixed-term contracts. The likelihood of leaving the firm is greater for shorter contracts. CEOs with five-year contracts have a probability of leaving of 6.3%. CEOs with contracts shorter than one year have a probability of leaving of 13.7%. The fraction of CEO turnover decreases for each additional year that the contract is longer. The numbers also indicate that contracts are often

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<sup>4</sup> For details on severance pay, see Rusticus (2006), Rau and Xu (2009) or Goldman and Huang (2010).

renewed: CEOs under one-year contracts do not leave every year, and CEOs under five-year contracts do not leave in 20% of all years. Yet CEOs under one-year contracts have a probability of leaving that is twice as high as the one for CEOs under five-year contracts. Contracts that renew automatically every day or month, so-called evergreen contracts, have a turnover incidence of 2%.

Panel B takes CEOs under three-year and five-year contracts and follows them over their tenure. For three-year contracted CEOs, the table shows averages for CEOs with three years remaining under their contracts, with two years, in the last year before (election year) and in the year of the planned expiration. CEOs with a three-year contract are more likely to leave in the expiration year than at the start of the contract: 4.63% leave in the first year, 9.86% in the second, 9.83% in the third and 11.54% in the year that the contract expires. The pattern is similar for CEOs with five-year contracts: 2.19% leave in the first year and 10.68% in the last.

That CEOs are more likely to leave as they approach the end of their contract does not necessarily reflect the decreasing cost of breaching it. Firms may hire a CEO to accomplish a specified task (e.g., turn around an unprofitable unit) for a specified time (Anderson et al., 2013). Whether he will be needed for another task is to be decided at the end of the first one. The time pattern of retirements may then reflect how well both parties were able to estimate the time needed. In other words, the contract horizon may be derived from the evaluation period needed rather than its determinant.

What then is the role of a contract? My discussions with HR personnel suggest that it is precisely a formalization of the evaluation period. Employment contracts matter not because of the monetary penalty for breach, but because they are a formal commitment of the firm to a certain evaluation period. The low likelihood of exits at longer contract horizons reflects that this commitment is credible.

The length of the evaluation period should have an effect on the CEO's decision horizon. A longer evaluation period should allow the CEO to undertake projects that are hard to judge at the beginning; it may also allow him to slack.

### *2.3. The benefits of a long-term contract: investment*

It can be difficult to assess the performance of an investment project before its payoffs materialize. If a CEO's employment contract is due for renewal soon, he has an incentive to forgo projects that will not positively affect his visible performance (Stein, 1988; Stein 1989; Chemmanur and Ravid, 1999). A longer contractual horizon encourages the CEO to take projects that are initially more costly if they become profitable before the end of his contract.

A longer employment horizon also allows for more incentive-compatible compensation for longer-term projects. It is easier to assign responsibility when the executive is still in charge after the project has paid off. If the CEO performs well, the board can reward him with salary increases, bonuses and perquisites (Gibbons and Murphy, 1992; Narayanan, 1985). Given that non-vested stock and options are often forfeited upon termination (Dahiya and Yermarck, 2008), a longer contractual horizon also increases the expected value and incentive effect of long-term stock and option vesting schemes. Non-pecuniary benefits are discussed not only in the management (Matta and Beamish, 1998), but also in the finance literature (Casamatta and Guembel, 2010): some CEOs want to build legacies, become recognized or even famous for their performance. CEOs can reduce effort if they do not expect to be rewarded in time.

A disincentive to invest given a short horizon is not necessarily suboptimal. An executive with a short horizon has little incentive to exert effort to work on the long-term project. Noe and Rebello (1997) argue that a CEO with project-specific knowledge is harder to replace. Therefore, *given* a short CEO horizon, it can be optimal for the firm to forgo positive-NPV projects. In addition, lower-rank executives may have to reverse decisions under new

leadership and therefore incentives to reduce effort on long-term projects. At the same time, tournaments for a possible succession give the upper management incentives to focus on short-term results.

To analyse the effects of CEO horizon, I consider two forms investment spending: capital expenditures (CAPEX), and R&D expenses. I normalize CAPEX and R&D expenses by lagged total assets; the results are qualitatively similar if I normalize them by sales or PP&E. Table 2 reports means in the same fashion as for the percentage of retirements. The mean of CAPEX is 6.5% of assets in firms with a CEO contract and 7.7% in those without. It does not show any decipherable pattern across contracts, with a mean of 6.5% of assets in firms with a five-year CEO contract and 6.3% in firms with a contract below one year. A very different pattern is evident with the *remaining* contract horizon. In firms with three-year CEO contracts, CAPEX amounts to 6.58% in the first year and declines monotonically to 5.66% in the final year. In firms with five-year CEO contracts, CAPEX falls monotonically from 6.97% in the first year to 4.91% in the final year.

We do not observe the same pattern in R&D. They vary much more than CAPEX between contracts with different lengths, and neither decrease nor increase consistently with tenure. The apparent lack of connection between R&D and contract horizon seems counterintuitive. R&D affects innovation and therefore the long-term performance of a firm, which CEOs with a longer contract horizon should care about more. R&D also affects profitability directly, which makes it more prone to “real earnings management” directly before renewals. On the other hand, innovative firms with high R&D spending often operate in volatile industries. Long-term contracting can be more costly in a risky environment (Gillan et al., 2003). To disentangle these effects, it is therefore important that we control for other firm characteristics. We shall revisit these results within a multivariate framework.

#### 2.4. *The cost of a long-term contract: discipline*

Gompers et al. (2003) write: “corporations are republics. [...] One extreme, which tilts towards a democracy, reserves little power for management and allows shareholders to quickly and easily replace directors.” Unlike other employees, CEOs rarely take up comparable positions after contract termination, 2.2% in the Gibbons and Murphy (1992) sample and 3.2% in the Brickley, Linck and Coles (1999) sample. Dismissal can therefore serve as a threat: it seems unlikely that CEOs would happily terminate their contract.

Contractual employment horizon is the most direct determinant of the ease of dismissal. Premature termination of fixed-term contracts leads to negotiations and perhaps litigation, and the costs of termination are proportional to the time remaining between the actual and contractual expiration date. The time remaining under the contract should therefore have an effect on the CEO’s discipline, effort and self-serving behavior.

Empirically, discipline is hard to measure, especially if underperformance may be related to the initial underperformance of longer-term projects rather than lack of effort. I use the year-on-year change in base salary, a measure to the CEO’s benefit and the firm’s cost. This is not a perfect measure of discipline: firms can, for example, decide to increase base salary to adjust risk-taking incentives.

Changes in base salary do not differ consistently between contracts with different length. Under a given contract length, however, base salaries show an interesting pattern. After a moderate increase in the first year, the increase peaks in the second year before flattening down rapidly over the next years. The second-year peak is 43% for CEOs with three-year contracts and 41% for CEOs with five-year contracts; the expiration year’s salary growth is 11% for both CEOs with three-year contracts and those with five-year contracts.

Again, I advise to take this positive relationship between contract horizon and CEO compensation with caution. There is no doubt that we can explain such patterns with alternative explanations—and CEOs themselves possibly with even better ones. For example,

contracts come with sign-on equity grants which do not need to be replenished in the second year, and the perceived fall in total compensation is off-set by a rise in fixed compensation. (Although it is not entirely clear why total compensation needs to be fixed across years.)

Ultimately, we need to examine performance to know whether CEO contract horizon induces discipline.

### 2.5. *A trade-off*

Long-term contracts commit to discretion over a certain period of time. This gives executives freedom to implement costly investment projects that are more lucrative in the long-run as well as costly projects that are less lucrative. Longer contracts can alleviate myopic underinvestment, but they may induce less effort during the implementation. The public discussion sometimes blames executives for being too myopic (see Froot et al., 1992) and other times for being not being responsible (see Bebchuk and Fried, 2004). It is an empirical question which effect dominates. If firms design contracts optimally and adapt them to their specific needs, we should not find a significant relationship between firm value and horizon.

Table 2 provides means for three measures of performance: stock returns, accounting profitability, and announcements to acquisitions. Arguably, stock returns should be the least sensitive to contract horizon. An efficient market should reflect no systematic time patterns. Indeed, stock returns do not vary with contract horizon for the subsamples of three- or five-year contracts. Neither do stock returns vary consistently across firms with different CEO contract length: there is no evidence for valuation effects of longer contracts.

Return on assets is the appropriate target variable for real earnings management. In Stein (1988) and (1989), the manager cuts investment in order to boost net income, which increases short-term investors' evaluation of the firm. Consistent with this argument, ROA is high in firms with contracts that are shorter than one year, with 7.0% compared to an average of 2.2% for all CEOs under fixed-term contracts. For CEOs with three-year contracts, ROA is

also the highest in the election year; however, there is no such spike for CEOs with five-year contracts. Moreover, there is no consistent horizon-related pattern in any other way.

Both stock returns and ROA are imperfect measures of performance in a setting with inter-temporal choices: decisions may be suboptimal but already priced into the stock; investments may be lucrative later but reduce profitability earlier. Acquisitions allow me to isolate performance effects of investment decisions. They are also usually non-standard and therefore are likely to involve the CEO personally (for similar settings see Masulis et al., 2007 and Bebchuk et al., 2011). I measure the three-day announcement returns to acquisitions listed by the Securities Data Corporation. Not all CEOs make acquisitions. In total, the number of acquisitions made by CEOs with a contract in the sample is 1,594. The average return to acquirers in the sample is negative -0.3%, similar to the numbers found in the M&A literature.

Announcement returns are generally higher for CEOs with shorter contracts. Acquisitions by CEOs with contracts over five years have returns of -1.4%, CEOs with contracts shorter than one year returns of around 0. The effect of the time remaining under a given contract is unclear. CEOs with three-year contracts experience higher returns for acquisitions announced earlier on, and CEOs with five-year contracts for acquisitions announced towards the end of the contract.

Overall, there is no clear univariate evidence for any positive or negative performance effect of contract horizon. This implies that firms do not systematically choose suboptimal contracts. Contrary to critics of short-termism or CEO power I find no evidence that CEOs destroy firm value because they are too myopic or their contracts are too long.

Univariate statistics do not control for any confounding effects. To address those, section IV will repeat this discussion with multivariate tests.

### **3. SELECTION**



Before proceeding to the multivariate analysis of contractual horizon, it is important to model the choice into fixed-term contracts to control for selection and endogeneity. Firms that choose to enter fixed-term contracts may have different investment opportunities. While I can track CEOs under different fixed-term contracts over time and observe them under changes in their remaining contract length, I cannot conclude that CEOs with no such contract would react the same way. To control for the selection bias arising from this non-random exclusion, I follow the approach of Heckman (1979) and use the choice regression described below to compute the Mills ratio. A similar selection problem exists for the choice between fixed-term contracts of different length, which I approach with a similar correction, using the contract length instead of the contract itself as the choice variable.

I choose a state law characteristic for the identifying restriction: the at-will exception rule of good faith and fair dealing (here forth “exception rule”). This state-wide rule prohibits terminations made in bad faith or motivated by malice.<sup>5</sup> This rule protects rank-and-file employees with shorter contracts or without contracts, which makes such forms of employment more attractive. The ensuing popularity of shorter contracts makes it difficult for executives to negotiate longer contracts for themselves. The direct judicial consequences of the rule to CEOs are likely to be limited, however, since they are protected by individual contracts. The listing of these so-called at-will exceptions is reported in appendix A.1 as in Walsh and Schwarz (1996) and Muhl (2001). In most states, the rules were adopted between 1960 and 1980, following debates that were driven by political sentiments of that time as well as the particularities of isolated precedent cases.

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<sup>5</sup> There are two other exceptions that are less relevant for us. Under the public policy exception, dismissal is not allowed if it violates the state’s public policy or a statute. Under the implied contract exception, an employee can dispute his/her dismissal if he/she can prove the existence of an implicit (i.e., not written) contract.

The exception rule is relevant for contract design: firms with headquarters<sup>6</sup> in states that adopt the good faith and fair dealing exception are significantly less likely to offer fixed-term contracts ( $t = 11.92$ ). The states are not, however, related to relevant outcome variables such as innovation. For example, California, the state with the highest number of patents (see appendix), is an exception state, while New York and Texas, the next active states, are not. Some industries are concentrated in exception states, albeit not resulting in a pattern related to investment. Drugs (SIC 28, or 13 of the Fama and French (1997) industries), the industry with the highest R&D expenditure per sales, is overproportionately present in exception-states, while electronics (SIC 36, Fama-French 22), the industry with the next-highest R&D expenditures, is not. Within the least investment-intense industries, there are overproportionately many construction firms (SIC 15-17, Fama-French 18) based in exception states but less insurance companies (SIC 63, Fama-French 46). Panel D of Table 1 provides a breakdown of the sample by state (for the 15 states with the most observations). The sample composition is comparable to the overall COMPUSTAT distribution and provides a mixture of states with more and less patents as well as both states with and without the exception.

Firms that do not report CEO contracts may have none, but there is also the possibility that they omit their disclosure. The threat of litigation by outside parties has little bite since—without disclosure—outsiders do not observe whether the CEO has a contract. To identify firms that fail to disclose their CEO contracts, I use determinants of disclosure quality: firm size, the number of equity issuances, and the standard deviation of analyst forecasts. Lang and Lundholm (1993) and Brown and Hillegeist (2007) show that these variables affect the disclosure quality as measured by the discontinued *AIMR*. The listed determinants being

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<sup>6</sup> The contracts explicitly declare the governing state law. It coincides with the state of the headquarter location in most cases. In contrast, the choice of contract type and the state of incorporation are not significantly related.

rather generic firm characteristics, I also include a variable that indicates whether the firm has made any restatements in the relevant year, as reported by *Audit Dynamics*.

I follow Gillan et al. (2009) in their choice of other determinants of long-term contracts. Gillan et al argue that risk should be relevant for the contract length: riskier firms have to renegotiate contracts more often. I use their estimates of industry risk: homogeneity of stock returns, median sales volatility, and the survival rate per year. Furthermore, CEO and board characteristics should affect the negotiation. In particular, there is less uncertainty about incumbent CEOs, especially when they have been in their position for a long time. A similar argument can be made for older CEOs that have a longer track record in general. I control for incumbent CEOs, age, tenure, and use the governance index of Gompers et al (2003) to control for the power of the board. To ensure that geographical effects are due to the at-will exceptions and not to other legal differences across states, I control for other geographical indexes such as the anti-takeover index (for the state of incorporation) of Bertrand and Mullainathan (1999) and the anti-competition enforceability index of Garmaise (2011). All regressions contain industry and year fixed effects to control for exogenous shocks to the labor market.

#### TABLE 3 HERE

Table 3 reports the multivariate results. Column 1 shows the results of a probit specification that predicts the choice to enter a fixed- term contract with all the above mentioned variables. Column 2 to 6 use the variables that are found to be significantly related to contract choice in column 1 to predict the choice to enter a fixed, five-, four-, three-, two- or one-year contract, respectively. These regressions are used to compute inverse Mills ratios for the regressions reported in the next section.

First, states with the exception rule are significantly less likely to issue fixed-term contracts, less likely to enter into five-, four-, three- or two-year contracts, but more likely to

enter one-year contracts. This is consistent with my previous argument and with the findings of Miles (2000). Of the other two geography variables, anti-takeover laws are significantly related to contract length and the Garmaise index only marginally so. CEOs are more likely to enter fixed-term and longer contracts if anti-takeover laws apply, consistent with a complementary nature of external and internal governance.

I find little evidence that firms with lower disclosure quality are less likely to *disclose* a contract. To the defence of the disclosure bias hypothesis, firms with a greater number of SEOs are more likely to be in the sample. These firms have more disclosure duties. However, smaller firms and firms with more earnings restatements are less likely to be in the sample of CEOs with a (disclosed) fixed-term contract. The fact that these variables are related to the incidence of a contract as well as the length indicates that they measure firm characteristics unrelated to disclosure. The standard deviation of analyst forecasts is not significantly related to contract choice, which further suggests that information asymmetry is of little relevance to sample selection.

Industry homogeneity is associated with less contracts and shorter contracts. In homogenous industries, both the CEO and the firm have more outside options, which makes a contract less important. The industry risk variables are not significantly related to the contract choice. Incumbent CEOs are more likely to receive a fixed-term contract, but also one-year contracts. These are likely to have automatic renewal terms. Older CEOs and CEOs with a longer tenure are more likely to have no contract or shorter contracts, perhaps because firms are less uncertain about their potential. The Gompers et al. (2003) governance index is positively associated with longer contracts. This measure is lower for well-governed firms. The positive association suggests that boards with less bargaining power are more likely to sign longer contracts.

#### **4. MULTIVARIATE RESULTS**

#### 4.1. *Contract horizon and realized tenure*

Table 4 reports the multivariate results. I begin with the most immediate effect of employment contracts, namely on the executive's realized tenure. Panel A reports the hazard ratios of Cox (1972) models for the probability that the CEO exits his position. The hazard model allows me to treat the probability of turnover as a function of tenure rather than every firm-year as an independent observation in a pooled regression (for another application of hazard models in the turnover literature, see Jenter and Kanaan, 2010).

Each regression in Panel A controls for age, stock performance as well as year and industry fixed effects. The regressions for the samples of all fixed-term contracts and the five-, four-, and three-year contracts also control for selection into the respective sample, using the Mills ratios computed in the previous section. Because age is collinear with the contract horizon, I use a dummy variable that indicates CEOs over 65, the most prominent retirement age (see Jenter and Lewellen, 2011). Using other measures of performance (industry adjusted, return quintiles, accounting measures) yields qualitatively similar results. The year and industry fixed effects allow me to net out any aggregate shocks that might be correlated with the executive labor market.

Data availability restricts the sample to 9,011 firm-years. Of these, 5,286, or 59% are right-censored observations of CEOs who have not left office by 2008. This composition is comparable to the previous literature (e.g., 58% in the sample of Hartzell, 2001).

The first three columns use the entire fixed-term contracts sample and focus on the number of years remaining under the contract, the election year, and the length of the contract, respectively. The next three columns restrict the sample to CEOs with five, four, and three-year contracts, and the last column restricts the sample to CEOs with renewed contracts.

TABLE 4 HERE

I find a negative and statistically significant relationship between the number of years remaining under the contract and turnover. Turnover becomes 12% more likely for each year towards the expiration date (column 1). For CEOs with five-year contracts, the likelihood per year is 20% (column 4), for CEOs with four-year contracts 34% (column 5) and for CEOs with three-year contracts 19% (column 6). Contract horizon is also important under renewed contracts: the likelihood of turnover increases by 9% for each year towards the expiration date, a smaller magnitude than for the overall sample.

The coefficients for the election year or the contract length are not statistically significant. Age is only significant in subsample regressions and with inconsistent signs. Stock returns are significantly negatively related to CEO turnover, consistent with Jenter and Kanaan (2010)—albeit only for the renewed sample.

#### *4.2. Investment*

In Panel B and C, I examine the relationship between contract horizon and investment, measured as changes in CAPEX and R&D expenses over lagged total assets, respectively. The regressions in Panel B and C control for Tobin's Q, cash flow, respective selection corrections (except for the renewed subsample) as well as executive fixed effects. The executive fixed effects net out any fixed differences between CEOs in investment style. For example, CEOs that sign long contracts may be better in making long-term plans, which would translate into higher levels of investment. The inclusion of executive fixed effects ensures that my estimates are not driven by any such fixed differences across CEOs. To account for dependencies across observations caused by serial correlation, standard errors are estimated allowing for correlation of the error term at the executive-level.

Investment decreases over the course of a contract. Firms invest more when the CEO contract has more years remaining (column 1). One more year remaining translates into a 0.3% higher CAPEX and 0.2% higher in R&D as a fraction of total assets. The effect is the

most pronounced for CEOs with five- and four-year contracts. One more year remaining, given an originally five-year (four-year) contract, translates into 0.5% (0.5%) higher CAPEX and 0.4% (0.5%) higher R&D. The effect is not significant for CEOs with three-year contracts. For CEOs with renewed contracts, the effect is of similar magnitude and significant 0.4% for CAPEX but not significant for R&D: as with the univariate statistics, the effects are more pronounced for CAPEX than R&D.

The coefficients on the election year and the length of the contract are not significantly different from zero for R&D, but significant for CAPEX: in the year before election (column 2), CAPEX falls by 0.5%; and every further year under the contract translates into 0.1% more CAPEX. The coefficients on Q and cash flow are positive and significant, as expected.

#### 4.3. *Discipline*

Are CEOs more likely to award themselves private benefits if they are further away from their renewal date? To answer this question, I examine salary increases. Firms may increase fixed compensation to compensate for changes in incentive pay: to control for this, I include the fraction of incentive to total compensation as well as the natural logarithm of total compensation (inflation adjusted to the year 2000) in the regression. As before, the regressions control for executive fixed effects and respective selection corrections.

Panel D reports the results. Column 1 of Panel D reports that for every year that the CEO has until the expiration of his contract, base salary on average increases by 2.6% more. In election years (column 2), salary on average drops by 9.5%. The result is more pronounced for the contract length subsamples. For CEOs with five-year contracts, salary increases are by 4.6% higher for each more year that he is away from expiration; the number is 11.5% for four-year contracts and 9.2% for three-year contracts. Renewed contracts show a pattern similar in direction and magnitude to the entire sample, with an average 1.6% increase for

every year under the contract. The coefficient of contract length is not significant. The compensation variables are also not significantly related to changes in base salary.

The results, as any results that accuse CEOs of self-serving behaviour, must be interpreted with caution. CEOs with a greater contract horizon receive greater increases in base salary. These benefits make the CEOs better off in years of greater contract horizon and are a cost to the firm, but they may have other time-varying benefits that I am not aware of.

#### 4.4. *Performance*

How do the effects on investment and discipline affect the overall performance? To establish a relationship between contract horizon and firm value, I examine three measures of performance: stock returns (Panel E), return on assets (Panel F), and announcement returns of acquisitions (Panel G). Stock returns and return on assets are regressed on measures of contract horizon, controlling for the Inverse Mills ratio (except for the renewed sample) and executive fixed effects. The regression of acquisition returns does not control for executive fixed effects, but transaction characteristics as well as year- and industry fixed effects.

There is hardly any relationship between contract horizon and stock returns or return on assets. The only significant coefficient is only so for the five-year contract sample, a positive coefficient of remaining years for ROA. That is, there is no systematic effect of contract horizon on stock or accounting performance. In other words, there is no evidence that firms make CEO contracts that are systematically too short or too long.

Stock returns and accounting profitability measure performance over one specific year. This makes them imprecise measures in the context of contract horizon. Some of the CEOs decisions will only affect profitability in later years. The market, in contrast, can foresee any systematic horizon effects and incorporate them into prices at the beginning of the contract. Acquisition announcement returns, in contrast, allow me to isolate the effect of specific investment decisions. The more precise measure comes, however, at the cost of a smaller



sample size of 1,196 acquisitions, of which 247 are made by CEOs with five-year contracts, 106 by those with four-year contracts and 420 by CEOs with three-year contracts.

Panel G reports the results of regressions where the dependent variable is the three-day return to acquisition announcements. Because not all firms make acquisitions, standard errors for this regression are estimated allowing for correlation of the error term at the year-level. Column 1 shows a significantly negative coefficient on the time remaining under the CEO's contract. For each year more under the CEO contract, the acquisition announcement returns are 0.1% lower. This result only holds in one of the subsamples: the CEOs with four-year contracts, where the effect is 0.7%. The coefficients on the election year and the contract length are insignificant.

The results on the other control variables resemble the previous literature but are only significant in some specifications. Using equity to finance the acquisition is associated with smaller returns, consistent with the findings of the literature (Asquith, 1983; Agrawal et al., 1992; Loughran and Vijh, 1997; Rau and Vermaelen, 1998). Hostile transactions and transactions with multiple bidders are met with negative stock reaction, consistent with Schwert (2000).

## **5. ROBUSTNESS**

### *5.1. CEOs with multiple contracts*

The contract sample contains 1,734 firm-CEO pairs that sign contracts with different lengths. These observations allow me to calculate how the same set of firms and executives reacts to a change of contract length. This does not remove any potential selection bias, but may reduce the effect of unobservable firm characteristics. I report results for “switchers” in column 1 of Table 5, and repeat the regressions of turnover, CAPEX, salary growth and stock returns in Panel A, B, C, and D. All results are equal or stronger. That is, they are not entirely accounted for by unobserved firm characteristics.

### *5.2. Renewal dates*

Some firms provide a first possible renewal date prior to the expiration date. The commitment character of renewal dates is not clear: discussions with lawyers and compensation consultants suggest that renewal dates do not affect severance pay, and such contracts can be renewed on any date after (or even before) their indicated renewal dates. Nevertheless, the first renewal date can serve as an early boundary of executive horizon. Column 2 provides the above mentioned regressions, using the renewal dates instead of the expiration dates if applicable. The results are qualitative similar, with smaller magnitudes on retirement and salary results and a greater magnitude for CAPEX.

### *5.3. Firm-fixed effects*

Column 3 in Panels B, C, and D report results for the above mentioned regressions, using firm instead of executive fixed effects. All results are qualitatively similar and of similar magnitude for CAPEX but smaller magnitude for salary growth. The results on returns are insignificant as before.

### *5.4. Other control variables*

In this section, I control for other variables related to the CEO. Compensation incentives may alleviate the negative effects of contract horizon (Dechow and Sloan, 1991), in particular incentive pay and restricted compensation (Gopalan et al., 2010). I use compensation data from ExecuComp and Capital IQ. Compensation data are not available for a fraction of my observations. To control for this, I include variables that indicate when such data are available. Tenure and age are strongly correlated with the contract horizon and therefore were previously omitted in regressions with executive-fixed effects. We add these two variables to the OLS regressions reported in Panels B-D and omit the fixed effects. The results are in line with the previous findings and reported in Columns 3 of Panel A and 4 of Panel B, C, and D. The coefficients on the years remaining are qualitatively similar. Incentive compensation is

positively related to turnover and negatively to salary growth. Total compensation, in contrast, is negatively related to turnover and CAPEX. Salary grows more for CEOs with a greater fraction of unexercisable options. Tenure and age are not related to CAPEX, but negatively to salary growth, consistent with an argument that firms learn less about senior CEOs and therefore need to adjust their salaries less often.

### *5.5. Subsamples*

The following three columns report results of the same regressions, including interaction terms with subsample indicators. First, longer contracts may have a greater incentive effect in more research intense firms. To test this argument, I divide the sample into firms with R&D expenses (normalized by sales) above and below median. Second, short contracts may impose more discipline for firms that have more excess cash. To test this argument, I divide the sample into firms with above/below median cash-to-assets ratios. Third, the contract incentives may be more relevant if the firm is more opaque, i.e. where it is harder to evaluate the performance of the executive. To test this argument, I divide the sample into firms with above/below median analyst forecast standard deviations.

Controlling for subsample indicators and interactions with the number of years remaining does not change the coefficient of the number of years remaining significantly. Of the interaction terms, the only significant one is the between the years remaining and the subsample with low analyst forecast errors in the CAPEX regression. As predicted, contract incentives have a smaller effect on these transparent firms.

## **6. CONCLUSION**

Using a data set of 3,954 fixed-term CEO employment contracts, I document heterogeneity in the employment horizon of US CEOs. Employment contracts are not empty promises. The contractual horizon predicts the likelihood that an executive actually leaves office. CEOs with longer remaining contracts have a lower probability of termination.

These factors have consequences on decision making. Consistent with the predictions of myopic underinvestment models, CEOs with a shorter horizon invest less. This applies to both CAPEX and R&D activity. Given that they make acquisition investments, however, stock price responses to the acquisition announcements are greater for CEOs under shorter contracts. Evidence on CEO compensation indicates that such positive effects may be related to the more immediate dismissal threat at shorter contract horizon: CEOs enjoy less salary increases when they are closer to the scheduled expiration date.

Ultimately, firms have to trade-off the effects of CEO horizon on discipline and investment. Firms that are more concerned about investment are perhaps better off with a longer horizon CEO contract, while firms with concerns about discipline and entrenchment should prefer shorter contracts. On average, neither the cost nor the benefits of CEO horizon dominate. Contract horizon does not exhibit any significant relations to firm value. In other words, firms do not systematically write CEO contracts that destroy value because they are too myopic or too protective.

This project is a first effort to document the effects of contract horizon. Inferences on the differences between contract types are necessarily clouded by potential endogeneity concerns and have to be read with caution. I hope that these preliminary results can give some practical orientation to both the governance literature and the contract design praxis. Given the availability of new data, I am confident that future research will illuminate various other effects, interactions, and remedies for the phenomena described in the current paper. For example, executive horizon may affect capital structure policies and decisions. Horizon may also explain time-varying risk-taking behavior, and investor horizon and executive horizon may affect each other. The findings on the time variation of investment may have implications for the cyclicity of investment and, ultimately, of stock prices.

Understanding the interaction between compensation and horizon is crucial for contract design. This analysis shows that contractual horizon is not a substitute for long-term compensation: in addition of setting a long-term horizon, it also provides the threat of abandoning all compensation. Whether and how long-term compensation and severance pay can dampen or accentuate some of the effects are promising questions for future research.

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**Table 1**  
**Summary statistics (start of the contract)**

Panel A: Number and length of contracts per year																
Year	Before 1995	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Total
Number of contracts	126	133	184	313	262	262	259	278	282	275	344	330	349	325	232	3954
Average contract length	4.23	3.77	3.72	3.47	3.21	3.44	3.45	3.30	3.24	3.15	3.30	3.13	3.06	2.93	2.78	3.28

  

Panel B: Average firm and industry characteristics by contract								
		W/O	Fixed-term	Fixed-term				
		Contract	Contract	1 year	2 year	3 year	4 year	5 year
Firm	Assets (\$ millions)	2,621	1,756	2,082	1,757	2,046	1,811	2,361
	ROA	7.1%	1.6%	-1.7%	-0.3%	0.8%	2.4%	2.8%
	Market-to-book	2.71	2.62	2.58	2.59	2.45	2.81	2.58
	Leverage	22%	24%	22%	23%	23%	27%	26%
	R&D/assets	8%	4%	6%	4%	3%	5%	2%
	CAPEX/assets	8%	6%	6%	7%	6%	6%	7%
Disclosure quality	AIMR	100%	93%	74%	90%	86%	97%	95%
	Restatement	4.5%	4.7%	7.0%	4.1%	5.2%	3.8%	3.9%
Industry	Survival	96%	99%	97%	98%	98%	99%	100%
	Industry sales volatility	8%	8%	8%	8%	8%	8%	8%
	Homogeneity	41%	32%	32%	31%	29%	31%	37%
CEO/ Governance	Age	55	53	53	52	52	52	53
	Former CEO	17%	28%	31%	31%	24%	33%	27%
	Percent CEO voting power	4.50	0.69	0.29	0.45	0.43	1.19	0.53
	Compensation (2000 \$, tds)	4344	2726	2348	2606	2379	3336	3844
	Incentive to total compensation	59%	35%	33%	32%	32%	38%	33%
	Percent unexercisable	28%	10%	8%	9%	8%	12%	11%
	Governance index	8.78	9.19	9.21	8.91	9.24	9.25	9.51
	Chairman and CEO	64%	50%	43%	48%	48%	48%	58%
	Ex post horizon	7.43	7.02	6.28	6.66	6.99	7.07	7.95
	Exception rule	27%	22%	28%	22%	21%	22%	23%

  

Panel C: Contract length													
Length (years)	<1	1	2	3	4	5	6	7	8	9	10	>10	Evergreens
All fixed-term	64	416	741	1515	410	551	92	55	22	25	23	39	73
	2%	11%	19%	38%	10%	14%	2%	1%	1%	1%	1%	1%	2%
First contract	26	282	506	1132	266	394	55	32	7	10	14	11	19
	1%	10%	19%	41%	10%	14%	2%	1%	0%	0%	1%	0%	1%
Renewals	38	134	235	383	144	157	37	23	15	15	9	28	54
	3%	11%	19%	31%	12%	13%	3%	2%	1%	1%	1%	2%	4%

  

Panel D: Number of contracts by state (15 states with the largest number of contracts)															
State	CA	NY	TX	FL	NJ	PA	IL	MA	OH	VA	GA	MN	CT	CO	MD
Number of contracts	528	440	331	213	213	214	163	157	161	119	110	95	112	85	93
Average contract length	3.33	3.40	3.15	3.60	3.28	3.15	3.14	3.17	3.33	3.28	3.34	2.86	3.35	3.37	3.50
Sample distribution	13%	11%	8%	5%	5%	5%	4%	4%	4%	3%	3%	2%	3%	2%	2%
COMPUSTAT distribution	14%	10%	7%	5%	4%	3%	5%	4%	2%	2%	2%	2%	2%	3%	2%

  

Panel E: Number of contracts by industry (15 industries with the largest number of contracts)															
Industry	Insurance	Electronic Equipment	Restaurants, Hotels, Motels	Drugs	Business Services	Wholesale	Measuring and Control Equipment	Medical	Real Estate	Retail	Oil	Communication	Machinery	Banking	Utilities
Number	522	256	270	241	240	188	160	131	141	128	124	120	99	109	76
Average contract length	3.19	2.95	3.56	3.15	3.51	3.15	3.19	2.78	3.39	3.45	3.44	3.34	3.42	3.22	4.03
Sample distribution	13%	6%	7%	6%	6%	5%	4%	3%	4%	3%	3%	3%	3%	3%	2%
COMPUSTAT distribution	8%	8%	4%	5%	6%	11%	2%	5%	3%	3%	3%	4%	4%	2%	2%

This table presents descriptive statistics. Accounting numbers are measured at the fiscal year that ends before the contract start date. Variables are defined in appendix A.2.



**Table 2**  
**Summary statistics (by firm and year)**

		Panel A. By contract type										
		Without contract	With fixed-term contract			Length of fixed-term contract						
			All	Evergreen	>5	5	4	3	2	1	<1	
Retirement	Turnover	9.2%	7.6%	2.0%	1.4%	6.3%	7.0%	8.3%	9.6%	12.1%	13.7%	
Investment	CAPEX/assets	7.7%	6.5%	5.6%	7.2%	6.5%	5.9%	6.4%	7.0%	5.8%	6.3%	
	R&D/assets	8.4%	3.5%	1.7%	2.5%	2.8%	4.2%	3.4%	4.8%	5.9%	2.6%	
Compensation	Change in salary (%)	23	20	264	14	16	20	24	26	16	12	
Performance	Stock return	1.2%	2.4%	2.0%	2.6%	2.3%	2.9%	2.4%	2.0%	2.4%	1.9%	
	Return on assets	7.1%	2.2%	9.0%	7.5%	2.3%	3.3%	1.7%	0.0%	-0.1%	7.0%	
	Acquisition returns	-0.4%	-0.3%	-0.5%	-1.4%	-0.2%	-0.1%	-0.5%	0.7%	-0.1%	0.0%	
Observations	All	18,334	16,741	405	2,770	2,906	1,796	5,651	2,335	1,071	212	
	Acquisition sample	4,349	1,594	17	105	247	106	420	185	70	461	

  

		Panel B. By number of years remaining									
		# Years remaining - three-year contracts				# Years remaining - five-year contracts					
		3	2-3	1-2	<1	5	4-5	4-3	3-2	2-1	<1
Retirement	Turnover	4.63%	9.86%	9.83%	11.54%	2.19%	5.22%	8.17%	7.28%	10.18%	10.68%
Investment	CAPEX/assets	6.58%	6.41%	6.39%	5.66%	6.97%	6.92%	6.47%	6.08%	6.11%	4.91%
	R&D/assets	3.28%	3.50%	3.33%	3.61%	2.26%	2.78%	3.20%	2.77%	3.37%	2.67%
Compensation	Change in salary (%)	23	43	11	11	13	41	10	9	8	11
Performance	Stock return	2.18%	2.54%	2.68%	2.47%	1.86%	2.49%	1.62%	2.48%	3.83%	1.61%
	Return on assets	1.74%	1.36%	1.75%	2.74%	3.81%	1.61%	1.78%	1.81%	1.96%	1.56%
	Acquisition returns	0.15%	-0.71%	-1.36%	-1.33%	-0.18%	0.34%	-2.57%	-0.92%	1.88%	0.96%
Observations	All	1,987	1,608	1,179	847	763	613	530	421	331	248

This table presents descriptive statistics for all years in which the sample contracts are valid. Variables are defined in appendix A.2.

**Table 3**  
**Choice of contract type (first stage)**

Dependent variable		Fixed-term contract	Fixed-term contract	5-year contract	4-year contract	3-year contract	2-year contract	1-year contract
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Geography	Exception rule	-0.248*** (0.01)	-0.240*** (0.01)	-0.100*** (0.02)	-0.145*** (0.03)	-0.099*** (0.03)	-0.148*** (0.03)	0.261*** (0.02)
	Anti-takeover	0.108*** (0.01)	0.102*** (0.01)	0.030* (0.02)	-0.03 (0.03)	0.080*** (0.01)	0.033*** (0.01)	-0.082*** (0.02)
	Garmaise	-0.004* (0.003)						
Disclosure quality	Size	-0.275*** (0.02)	-0.275*** (0.02)	-0.091*** (0.01)	-0.082*** (0.01)	-0.164*** (0.01)	-0.133*** (0.01)	-0.004 (0.01)
	Restatements	0.175*** (0.05)	0.176*** (0.05)	0.089* (0.05)	0.126*** (0.05)	0.090*** (0.03)	-0.011 (0.07)	-0.087 (0.06)
	Log number of SEOs	0.581*** (0.01)	0.574*** (0.01)	0.389*** (0.01)	0.159*** (0.01)	0.665*** (0.005)	0.462*** (0.01)	-0.088*** (0.01)
	Analyst forecast STD	-0.001 (0.0005)						
Risk	Industry homogeneity	0.788** (0.34)	-1.353*** (0.23)	-0.793*** (0.2)	0.053 (0.43)	1.105*** (0.27)	-1.000*** (0.35)	-1.361*** (0.43)
	Industry sales volatility	0.041 (0.14)						
	Industry survival rate	0.191 (0.34)						
Governance	Renewal	0.317*** (0.09)	0.317*** (0.09)	0.067* (0.03)	0.147*** (0.05)	0.019 (0.04)	0.257*** (0.05)	0.417*** (0.05)
	Age	-0.006*** (0.002)	-0.006*** (0.002)	0.005*** (0.001)	-0.005*** (0.002)	-0.009*** (0.002)	-0.009*** (0.001)	-0.001 (0.001)
	Tenure	-0.040*** (0.003)	-0.040*** (0.003)	-0.014*** (0.003)	-0.018*** (0.004)	-0.031*** (0.002)	-0.027*** (0.003)	0.014*** (0.001)
	Governance index	0.110*** (0.007)	0.110*** (0.007)	0.052*** (0.005)	0.047*** (0.004)	0.060*** (0.004)	0.045*** (0.004)	-0.007** (0.003)
Fixed effects	Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant		-3.157*** (0.36)	-2.937*** (0.18)	-3.379*** (0.26)	-2.681*** (0.26)	-4.990*** (0.16)	-3.178*** (0.12)	0.677** (0.31)
<i>N</i>		32,268	32,268	31,617	31,720	32,172	32,153	19,785

This table presents marginal effects from Probit regressions and standard errors (in parentheses) that are heteroskedasticity robust and clustered by year. All variables are measured in the last fiscal year ending before the start date of the contract. Asterisks indicate that the estimates are significantly different from zero at the \*\*\* 1% level, \*\* 5% level, \* 10% level.

**Table 4**  
**Effects of contract horizon**

Panel A: CEO turnover							
Sample	Fixed-term contracts	Fixed-term contracts	Fixed-term contracts	5-year contracts	4-year contracts	3-year contracts	Renewed
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Remaining years	0.878*** (0.026)			0.803** (0.073)	0.665*** (0.093)	0.806*** (0.062)	0.910** (0.039)
Election year		0.856 (0.091)					
Contract length			0.991 (0.02)				
Aged over 65	1.011 (0.141)	1 (0.14)	1.003 (0.14)	0.225*** (0.128)	1.176 (0.787)	1.641* (0.422)	1.005 (0.195)
Stock returns	0.533 (0.218)	0.547 (0.222)	0.549 (0.224)	0.362 (0.391)	0.122 (0.19)	0.506 (0.367)	0.134*** (0.092)
Mills	1.814*** (0.174)	1.794*** (0.172)	1.807*** (0.174)	595.690** (1650.62)	1290.641* (5475.929)	3.007* (2.008)	
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	9,011	9,011	9,008	1,322	861	2,598	4,647
Panel B: CAPEX/Assets							
Remaining years	0.003*** (0.0007)			0.005*** (0.001)	0.005* (0.003)	0.003 (0.002)	0.004*** (0.001)
Election year		-0.005** (0.00199)					
Contract length			0.001** (0.00071)				
Tobin's Q	0.007*** (0.00076)	0.007*** (0.00076)	0.007*** (0.00076)	0.006*** (0.002)	0.003 (0.002)	0.005** (0.002)	0.009*** (0.001)
Cash Flow	0.002** (0.00092)	0.002** (0.00092)	0.002** (0.00093)	0.003 (0.004)	0.001 (0.002)	0.002 (0.003)	-0.001 (0.002)
Mills	-0.017*** (0.003)	-0.018*** (0.003)	-0.018*** (0.003)	0.062 (0.088)	0.042 (0.078)	-0.056 (0.054)	
Executive F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.518	0.517	0.517	0.568	0.553	0.609	0.529
N	13,537	13,537	13,521	1,493	1,105	2,641	5,745
Panel C: R&D/assets							
Remaining years	0.002** (0.0007)			0.004* (0.002)	0.005** (0.003)	0.001 (0.003)	0.001 (0.001)
Election year		-0.001 (0.0027)					
Contract length			0 (0.0007)				
Tobin's Q	0.007*** (0.0012)	0.007*** (0.0012)	0.007*** (0.0012)	0.004 (0.0031)	-0.001 (0.005)	0.004 (0.004)	0.009*** (0.002)
Cash Flow	0.004** (0.002)	0.004** (0.002)	0.004** (0.002)	0.003 (0.007)	0 (0.006)	0.004 (0.004)	0.003 (0.004)
Mills	-0.005 (0.005)	-0.005 (0.005)	-0.005 (0.005)	-0.093 NA	0.049 NA	-0.016 (0.056)	
Executive F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.682	0.681	0.681	0.615	0.696	0.678	0.665
N	13,537	13,537	13,521	1,493	1,105	2,641	5,745
Panel D: Change in base salary							
Remaining years	2.588*** (0.53)			4.508** (2.091)	11.478** (4.734)	9.217*** (2.681)	1.603*** (0.49)
Election year		-9.503*** (2.11)					
Contract length			0.473 (0.341)				
Incentive/total compensation	0.815 (7.323)	0.659 (7.342)	0.688 (7.338)	40.443 (31.074)	-23.258 (59.293)	26.381 (27.671)	-2.393 (8.178)
Log total compensation	-2.039 (1.795)	-2.265 (1.804)	-2.295 (1.798)	-9.619 (6.807)	-1.799 (10.757)	-7.997 (6.946)	-0.718 (2.017)
Mills	0.784 (3.503)	-0.032 (3.492)	-0.038 (3.513)	-39.368 (80.085)	99.773 NA	36.003 (119.329)	
Executive F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.177	0.176	0.168	0.092	0.016	0.062	0.213
N	8,552	8,552	8,542	873	628	1,488	6,255

Panel E: Stock returns							
Sample	Fixed-term contracts	Fixed-term contracts	Fixed-term contracts	5-year contracts	4-year contracts	3-year contracts	Renewed
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Remaining years	-0.001 (0.001)			-0.001 (0.003)	0.003 (0.005)	0.003 (0.003)	0.001 (0.001)
Election year		0.005 (0.004)					
Contract length			-0.001 (0.001)				
Mills	-0.004 (0.005)	-0.004 (0.005)	-0.004 (0.005)	0.289** (0.139)	0.166 (0.266)	0.044 (0.068)	
Executive F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.019	0.019	0.019	0.036	0.076	0.05	0.022
N	14,559	14,559	14,549	1,697	1,155	3,222	5,866
Panel F: Return on assets							
Remaining years	0 (0.00094)			0.003 (0.003)	0.002 (0.004)	0 (0.002)	0 (0.002)
Election year		-0.003 (0.00238)					
Contract length			0 (0.00093)				
Mills	-0.040*** (0.005)	-0.040*** (0.005)	-0.040*** (0.005)	-0.096 (0.074)	-0.114 (0.118)	-0.118*** (0.038)	
Executive F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.74	0.74	0.74	0.794	0.778	0.762	0.593
N	16,741	16,741	16,725	1,892	1,300	3,727	6,837
Panel G: Merger announcement returns							
Remaining years	-0.001** (0.001)			-0.004 (0.003)	-0.007* (0.004)	0.006 (0.004)	-0.001 (0.001)
Election year		0.002 (0.004)					
Contract length			-0.001 (0.001)				
Payment with stock	-0.014* (0.008)	-0.013** (0.006)	-0.016* (0.009)	-0.028** (0.013)	-0.008 (0.038)	-0.022 (0.016)	-0.012 (0.007)
Hostile	-0.025 (0.021)	-0.033 (0.019)	-0.043*** (0.012)	0 (0)	-0.02 (0.021)	-0.031 (0.024)	0.059** (0.022)
Multiple bidders	-0.023 (0.019)	-0.022* (0.013)	-0.026 (0.017)	-0.173*** (0.029)	0.047 (0.032)	-0.018 (0.021)	-0.032 (0.018)
Tender offer	0.001 (0.01)	0.011 (0.009)	0 (0.011)	-0.02 (0.031)	0.024 (0.027)	-0.013 (0.011)	0.006 (0.009)
Toehold	-0.001 (0.008)	-0.002 (0.007)	-0.002 (0.008)	0.001 (0.009)	-0.009 (0.026)	-0.015** (0.006)	0.011* (0.006)
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.013	0.018	0.005	0.04	0.017	0.038	0.051
N	1,196	1,196	1,156	247	106	420	406

Panel A presents the results of hazard model estimations, reporting hazard ratios for CEO turnover and standard errors underneath. Panel B-G present the results of OLS regressions, reporting coefficients and standard errors underneath that are heteroskedasticity robust and clustered by executive (Panel B-F) or year (Panel G). The dependent variables are as reported in the Panel title. All balance sheet and income statement variables are measured in the last fiscal year ending before the start date of the contract. Asterisks indicate that the estimates are significantly different from zero at the \*\*\* 1% level, \*\* 5% level, \* 10% level.

**Table 5**  
**Robustness**

Panel A: CEO turnover						
Sample	Switchers (1)	All fixed-term (2)	All fixed-term (3)	All fixed-term (4)	All fixed-term (5)	All fixed-term (6)
Remainingyears	0.788*** (0.031)		0.875*** (0.029)	0.914* (0.043)	0.893*** (0.033)	0.859*** (0.028)
Remaining years to renewal		0.847*** (0.019)				
Remainingyears x high R&D				0.948 (0.054)		
High R&D				1.161 (0.146)		
Remainingyears x high FCF					0.972 (0.051)	
High FCF					1.174 (0.135)	
Remainingyears x low analyst forecast error						1.074 (0.058)
Low analyst forecast error						0.674*** (0.072)
Aged over 65	0.863 (0.149)	0.859 (0.129)	0.9 (0.137)	0.918 (0.116)	0.908 (0.114)	0.909 (0.114)
Stock returns	0.343*** (0.142)	0.515* (0.205)	0.344** (0.16)	0.496** (0.17)	0.488** (0.167)	0.483** (0.165)
Incentive/Total compensation			4.363*** (1.371)			
Total compensation			0.732*** (0.052)			
Unexercisable options			0.778 (0.195)			
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Industry F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Data availability indicator			Yes			
N	6,214	9,011	9,011	9,011	9,011	9,011

  

Panel B: CAPEX/Assets							
Sample	Switchers (1)	All fixed-term (2)	All fixed-term (3)	All fixed-term (4)	All fixed-term (5)	All fixed-term (6)	All fixed-term (7)
Remainingyears	0.003*** (0.001)		0.003*** (0.0005)	0.002*** (0.0007)	0.003*** (0.0009)	0.003*** (0.0006)	0.004*** (0.0008)
Remaining years to renewal		0.004*** (0.0006)					
Remainingyears x high R&D					0 (0.0011)		
High R&D					0 (0.0051)		
Remainingyears x high FCF						0.001 (0.0009)	
High FCF						-0.003 (0.0036)	
Remainingyears x low analyst forecast error							-0.001 (0.0009)
Low analyst forecast error							0 (0.0027)
Tobin's Q	0.006*** (0.001)	0.006*** (0.0009)	0.008*** (0.0007)	0.007*** (0.0006)	0.007*** (0.0007)	0.007*** (0.0007)	0.007*** (0.0007)
Cash Flow	0.001 (0.0008)	0.001 (0.0008)	0.001 (0.0006)	0.001 (0.0008)	0.001 (0.0007)	0.001 (0.0007)	0.001 (0.0007)
Tenure				0 (0.0002)			
Age				0 (0.0002)			
Incentive/Total compensation				0.009 (0.0063)			
Total compensation				-0.007*** (0.0017)			
Unexercisable options				-0.001 (0.0033)			
Executive F.E.	Yes	Yes			Yes	Yes	Yes
Firm F.E.			Yes				
Data availability indicator				Yes			
N	8,301	13,537	16,343	13,537	13,537	13,537	13,537

Panel C: Salary growth							
Sample	Switchers	All fixed-term	All fixed-term	All fixed-term	All fixed-term	All fixed-term	All fixed-term
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Remainingyears	2.890*** (0.687)		1.649*** (0.3427)	0.704*** (0.2257)	2.266*** (0.7326)	1.893*** (0.4411)	2.150*** (0.486)
Remaining years to renewal		1.708*** (0.358)					
Remainingyears x high R&D					-0.665 (0.8147)		
High R&D					-3.336 (4.1489)		
Remainingyears x high FCF						-0.21 (0.6095)	
High FCF						-1.607 (2.4005)	
Remainingyears x low analyst forecast error							-0.715 (0.5501)
Low analyst forecast error							0.946 (1.6688)
Tenure				-0.971*** (0.0804)			
Age				-0.275*** (0.0761)			
Incentive/Total compensation	15.848 (11.6695)	13.793 (10.6742)	3.403 (6.2456)	-6.988* (3.5914)	2.12 (6.9273)	2.336 (6.9469)	2.372 (6.9112)
Total compensation	-5.955** (2.8231)	-4.577* (2.532)	-2.584* (1.493)	-0.249 (0.8095)	-2.019 (1.6952)	-2.033 (1.6913)	-2.057 (1.6822)
Unexercisable options				19.459*** (2.915)			
Executive F.E.	Yes	Yes		Yes	Yes	Yes	Yes
Firm F.E.			Yes				
Data availability indicator				Yes			
N	4,181	8,552	9,303	8,552	8,552	8,552	8,552

  

Panel D: Stock returns							
Sample	Switchers	All fixed-term	All fixed-term	All fixed-term	All fixed-term	All fixed-term	All fixed-term
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Remainingyears	0 (0.001)		0 (0.0007)	0 (0.0005)	0.001 (0.001)	0.001 (0.0009)	0 (0.001)
Remaining years to renewal		0.001 (0.001)					
Remainingyears x high R&D					-0.001 (0.0015)		
High R&D					0.004 (0.0076)		
Remainingyears x high FCF						-0.001 (0.0014)	
High FCF						0.007 (0.005)	
Remainingyears x low analyst forecast error							0.001 (0.0012)
Low analyst forecast error							-0.006 (0.0042)
Tenure				0 (0.0002)			
Age				0 (0.0001)			
Incentive/Total compensation				0.009 (0.0061)			
Total compensation				0.001 (0.0015)			
Unexercisable options				-0.002 (0.0042)			
Executive F.E.	Yes	Yes		Yes	Yes	Yes	Yes
Firm F.E.			Yes				
Data availability indicator				Yes			
N	7,930	14,559	15,999	14,559	14,559	14,559	14,559

Panel A presents the results of hazard model estimations, reporting hazard ratios for CEO turnover and standard errors underneath. Panel B-D present the results of OLS regressions, reporting coefficients and standard errors underneath that are heteroskedasticity robust and clustered by executive. The dependent variables are as reported in the Panel title. All variables are measured in the last fiscal year ending before the start date of the contract. Asterisks indicate that the estimates are significantly different from zero at the \*\*\* 1% level, \*\* 5% level, \* 10% level.

## APPENDIX

### A.1. At-will exceptions

Code	State	At-will exceptions			Garmaise	Anti-takeover	Patents
		Public policy	Implied contract	Good faith and fair dealing			
AL	Alabama	0	1	1	5	0	9,017
AK	Alaska	1	1	1	3	0	1,075
AZ	Arizona	1	1	1	3	1	27,065
AR	Arkansas	1	1	0	5	0	3,867
CA	California	1	1	1	0	0	303,592
CO	Colorado	1	1	0	2	0	31,339
CT	Connecticut	1	1	0	3	1	45,008
DC	District of Columbia	1	1	0	6	0	1,576
DE	Delaware	1	0	1	7	1	10,827
FL	Florida	0	0	0	9	0	55,303
GA	Georgia	0	0	0	5	1	23,774
HI	Hawaii	1	1	0	3	0	1,946
ID	Idaho	1	1	1	6	1	14,903
IL	Illinois	1	1	0	5	1	92,974
IN	Indiana	1	0	0	5	1	33,766
IA	Iowa	1	1	0	6	0	13,330
KS	Kansas	1	1	0	6	1	9,086
KY	Kentucky	0	1	0	6	1	9,738
LA	Louisiana	0	0	0	4	0	11,803
ME	Maine	0	1	0	4	1	3,099
MD	Maryland	1	1	0	5	1	29,470
MA	Massachusetts	1	0	1	6	1	69,616
MI	Michigan	1	1	0	5	1	82,589
MN	Minnesota	1	1	0	5	1	48,550
MS	Mississippi	1	1	0	4	0	3,597
MO	Missouri	1	0	0	7	1	20,864
MT	Montana	1	0	1	2	0	2,623
NE	Nebraska	0	1	0	4	1	4,697
NV	Nevada	1	1	1	5	0	5,591
NH	New Hampshire	1	1	0	2	0	10,766
NJ	New Jersey	1	1	0	4	1	95,136
NM	New Mexico	1	1	0	2	0	6,345
NY	New York	0	1	0	3	1	139,544
NC	North Carolina	1	0	0	4	0	31,587
ND	North Dakota	1	1	0	0	0	1,603
OH	Ohio	1	1	0	5	1	83,265
OK	Oklahoma	1	1	0	1	0	16,955
OR	Oregon	1	1	0	6	0	23,386
PA	Pennsylvania	1	0	0	6	1	84,618
RI	Rhode Island	0	0	0	3	1	6,413
SC	South Carolina	1	1	0	5	1	12,229
SD	South Dakota	1	1	0	5	1	1,385
TN	Tennessee	1	1	0	7	1	17,301
TX	Texas	0	0	0	3	0	106,463
UT	Utah	1	1	1	6	0	12,413
VT	Vermont	1	1	0	5	0	5,613
VA	Virginia	1	0	0	3	1	23,797
WA	Washington	1	1	0	5	1	32,901
WV	West Virginia	1	1	0	2	0	4,321
WI	Wisconsin	1	1	0	3	1	36,818
WY	Wyoming	1	1	1	4	1	1,282

This table presents the at-will exceptions, anti-takeover regulations, the Garmaise (2011) index, and the number of patents issued between 1977 and 2004 by state.

## A.2. Variable definitions

<i>Age</i>	Executive's age in years
<i>Aged over 65</i>	1 if the CEO is more than 65 years old
<i>Analyst forecast STD</i>	Standard deviation of analyst forecasts of that year's EPS
<i>Anti-takeover</i>	State with "business combination laws" according to Bertrand and Mullainathan (1999)
<i>Acquisition returns</i>	Announcement returns of an acquisition, measured between the two trading days before and after the announcement day
<i>Assets</i>	Book assets (in \$ millions)
<i>CAPEX/assets</i>	Capital expenditures divided by lagged assets
<i>Cash flow</i>	Earnings before extraordinary items plus depreciation, divided by lagged assets
<i>Contract length</i>	Expiration year minus start year of the contract
<i>Election year</i>	1 if the contract is due to expire in the following year
<i>Exception rule</i>	1 if the contract is governed by the law of a state with a good faith & fair dealing at-will exception
<i>Garmaise</i>	Index of Garmaise (2006)
<i>Governance index</i>	The index developed by Gompers, Ishii and Metrick (2003)
<i>High R&amp;D</i>	1 if R&D/sales is above median
<i>High FCF</i>	1 if cash divided by assets is above median
<i>Hostile</i>	1 if the board officially rejects the offer according to SDC
<i>Incentive/total compensation</i>	Value of bonus, stock, and option grants to total CEO pay
<i>Industry homogeneity</i>	Median (across all firms of one of the 49 Fama-French industries) of the percentage variation in monthly stock returns that is explained by an equally weighted industry index; market-adjusted returns are annual stock returns adjusted by the value-weighted CRSP index.
<i>Industry sales volatility</i>	49 Fama-French industry average of variance in sales over the past seven years
<i>Industry survival rate</i>	Industry rate of year-to-year survival within the COMPUSTAT database
<i>Leverage</i>	Ratio of net debt divided by assets
<i>Low analyst forecast error</i>	1 if analyst forecast STD is below median
<i>Multiple bidders</i>	1 if there are contesting bids for an acquisition
<i>Number of SEOs</i>	Number of equity issuances announced by the firm in the given year
<i>Payment with stock</i>	1 if an acquisition is completely paid in stock
<i>Post SOX</i>	1 after the Sarbanes-Oxley Act has become effective
<i>R&amp;D/assets</i>	Research and development expenditures divided by lagged assets
<i>Remainingyears</i>	Expiration year minus current year
<i>Renewal</i>	Indicator variable for CEOs who were in office at the time of the contract start
<i>Restatements</i>	1 if the firm files an earnings restatement in that year
<i>Return on assets (ROA)</i>	Earnings before interest and taxes divided by assets
<i>Stock return</i>	Annual stock returns
<i>Salary</i>	CEO's base salary in thousands of US\$, adjusted to 2000 \$
<i>Size</i>	Log of sales
<i>Tenure</i>	Number of years the CEO has been in office
<i>Tender offer</i>	1 when a tender offer is launched in an acquisition. A tender offer is a formal offer of determined duration to acquire a public company's shares made to equity holders
<i>Tobin's Q</i>	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.
<i>Toehold</i>	1 if the acquirer owns more than 0.5% of the target prior to an acquisition
<i>Total compensation</i>	CEO's total annual compensation (TDC2) in thousands of US\$, adjusted to 2000 \$
<i>Turnover</i>	1 if the executive leaves the CEO position
<i>Unexercisable options</i>	Value of unexercisable options divided by the value of unexercised options