

# Executive Severance Agreements

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This version February 10, 2006

## ABSTRACT

This paper studies severance agreements and their relation with CEO turnover. Severance agreements provide an interesting exception to the pay-for-performance paradigm. Not only do executives get paid after being fired, but frequently the payments are already contracted upon at the time the CEO is appointed. Using a representative sample of S&P 1500 firms, I find that half the CEOs have some form of severance agreement in the year they take office. The analysis of the determinants suggests that uncertainty about the quality of the CEO and the stability of the firm drive which CEOs get a severance agreement. Highly paid CEOs are also more likely to get a severance agreement. Pay level, firm size and outside CEOs are the main factors driving the size of the severance package. The analysis of the influence of severance agreements on CEO turnover provides conflicting evidence. Conditional on having an agreement; higher cash (equity) severance amounts are associated with more (less) turnover.

\* I gratefully acknowledge helpful discussions with the members of my committee: Stanley Baiman, John Core (Chair), Wayne Guay, Robert Holthausen, and David Larcker. I also thank Jennifer Blouin, Mary Ellen Carter, Chris Ittner, Frank Moers, Jeffrey Ng, Scott Richardson, Cathy Schrand, Rodrigo Verdi, and seminar participants at the University of Pennsylvania for helpful comments. I appreciate financial support from the Wharton School and the Deloitte & Touche Foundation.

## 1. Introduction

Executive severance agreements are puzzling in that they do not seem to fit the pay-for-performance paradigm. They are frequently contracted upon at the time of the CEO's appointment and can result in the pay-out of substantial sums of money after the CEO has been fired, which usually follows poor performance. This seemingly perverse feature has led some to refer to severance packages as "rewards for failure". Standard explanations for the positive relation between pay and performance, such as sorting and moral hazard, do not readily apply to severance, since severance pay generally follows poor performance. Currently, there is little evidence on these agreements. This paper begins to fill that gap by documenting the incidence and features of executive severance agreements, and testing for the determinants of these agreements. In addition, I investigate whether large severance agreements facilitate or hamper CEO turnover.

Severance agreements have received substantial recent attention from investors, activists and the business press. This interest has been fueled by, and is to some extent informed by, a few high profile cases, such as Michael Ovitz's termination from Disney, which resulted in substantial severance payments.<sup>1</sup> While these cases may be instructive, they are by their very nature not representative of the larger population. The outrage over such cases has had real consequences. Several institutional investors have sponsored shareholder proposals to limit severance pay (or requiring a shareholder vote if a certain amount is exceeded, typically 2.99 times pay). Shareholders at companies such as Verizon, Sprint, and International Paper have approved such proposals. The Council for Institutional Investors goes even further and argues that no severance should be paid in

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<sup>1</sup> Michael Ovitz left after only 14 months in office and collected cash severance pay of \$38.9 million and options valued at \$90.9 million as of the date they vested (*The Wall Street Journal*, March 8, 2005). For an inside view on the negotiations leading to the agreement, see Crystal (1996).

case of termination for poor performance. Similar developments are taking place in Europe. For example, the United Kingdom's Department of Trade and Industry has circulated proposals to curtail severance pay in the United Kingdom (UK DTI (2003)). That such activism can impose significant costs on businesses can be seen from the tax penalties applied to change-in-control agreements (often called golden parachutes).<sup>2</sup>

Starting with Lambert and Larcker (1985), these golden parachutes have been researched extensively. Severance agreements have not received comparable attention even though severance agreements apply to a much larger set of circumstances. Golden parachutes have been justified by some in light of the incentives these agreements provide executives to actively seek out potential acquirers, and to accommodate bids that are value maximizing for shareholders. Such considerations are less applicable to severance agreements. Recent theoretical research suggests several major reasons for severance agreements. Chief amongst those are the uncertainty about the abilities of the CEO, and the uncertainty about the stability of the firm and the viability of the firm's current strategy. In this paper, I provide evidence consistent with these hypotheses.

Related empirical work includes Schwab and Thomas (2004) and Gillan, Hartzell, and Parrino (2005), who study the determinants and features of CEO's employment contracts, and Yermack (2005), who studies separation agreements. Yermack examines the payments made to departing CEOs (both voluntary and involuntary) of 179 Fortune 500 companies who left the firm. These separation agreements are negotiated ex-post and need not be equal to the ex-ante severance agreement.

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<sup>2</sup> IRC § 280G makes nondeductible to the firm, and IRC § 4999 imposes a 20% nondeductible excise tax on the recipient of, an 'excess parachute payment'. An 'excess parachute payment' is any payment that exceeds the base amount (average total pay in the last five years), but the tax is only imposed if the total payment is equal to or larger than three times the base amount. Thus there is a large jump in tax penalties at the three times base amount level. No such penalties apply to severance agreements.

This paper contributes beyond the Yermack paper in several ways. First, my focus on the ex-ante contracts between firms and CEOs, rather than the pay-outs that are negotiated ex-post, more closely matches theory on severance agreements, which often relies on the unenforceability of tacit understandings. Second, my investigation of ex-ante agreements allows for a test of the effects of such agreements on the board's and the manager's decisions, such as the analysis of the role of severance agreements in CEO turnover. Such an analysis is not possible when analyzing only ex-post severance pay-outs. Third, Yermack's focus on a sample of CEOs that have already left the firm potentially introduces a selection problem, especially if these agreements affect the turnover of CEOs either through their effect on the CEO's or the board's behavior.

The purpose of this paper is twofold. First, I document and explain the features of severance agreements, and second, I investigate the consequences these severance agreements have for CEO turnover. Using a sample of 305 newly hired CEOs from S&P 1500 firms between 1994 and 1999; I find that half the CEOs have some form of severance agreement. The median agreement provides for cash severance benefits equivalent to two years of cash compensation. I find that the incidence of severance agreements is positively related to uncertainty about the abilities of the CEO (measured by the time the executive has spent with the firm before becoming CEO) and to uncertainty about the firm's operating environment (measured by standard deviation of returns and the tenure of the prior CEO). I also find evidence that CEOs receiving higher pay, a proxy for high bargaining power of the CEO or the ineffectiveness of the firm's governance, are more likely to receive a severance agreement, but I find no relation between severance agreements and other commonly used proxies for governance

mechanisms. Conditional on having an agreement, the main drivers of the amounts of severance pay are the amount of annual cash compensation, firm size, and whether the CEO comes from outside the firm.

My second set of tests examines the relation between severance agreements and executive turnover. Among the set of potential consequences of severance agreements, I focus on executive turnover because most contracting theories in this area rely on a link between severance and turnover. On one hand, theories predict that a severance agreement makes it more costly for the board to replace the CEO (e.g., Berkovitch, Israel, and Spiegel (2000) and Almazan and Suarez (2003)), whereas on the other hand, theories predict that a severance agreement makes it more attractive for a CEO to leave (e.g., Inderst and Mueller (2005) and Laux (2005)). My empirical analysis yields conflicting results. I find that conditional on having an agreement, greater amounts of cash severance pay are associated with higher turnover, whereas greater amounts of equity-based severance pay are associated with lower turnover.

The organization of the remainder of the paper is as follows. The next section provides some background on severance agreements. Section 3 reviews the literature on CEO turnover and theories of severance pay. Section 4 develops the empirical hypotheses following from these theories. Section 5 discusses the sample selection and describes the data. Section 6 presents the empirical design and the results of the empirical analysis, and Section 7 concludes.

## **2. Background on severance agreements**

The severance agreements in this paper are contracted upon before turnover becomes imminent. These contracts provide for payments upon future involuntary

terminations, except when the termination is ‘for cause’. What constitutes ‘cause’ is narrowly proscribed in the contract (such as conviction of a felony), and consequently terminations ‘for cause’ are rare. Terminations due to mergers and acquisitions are usually addressed in change-in-control agreements. If there is no such agreement, then the regular severance applies. Voluntary terminations, such as those due to a transition to a bigger firm, do not result in severance pay. Commonly, an exception is made for voluntary termination ‘for good reason’ in which case regular severance is paid. What constitutes good reason would also be specified in the contract, e.g., a substantial diminution in duties or pay. See Schwab and Thomas (2004) for more details.

Severance agreements in my sample come in two forms: as part of a more general individual employment contract or as a stand alone severance agreement that could also extend to other managers. SEC regulations require disclosure of the principal terms of these agreements (see Appendix I). Typically, firms attach the text of the employment agreements as an exhibit to the 10K or 10Q following the signing of the contract. In addition, firms describe the principal terms of these agreements in their proxy statements. For the purposes of this study, I mostly rely on the disclosures in the proxy statements. Appendix II shows some representative proxy statement disclosures from firms in my sample. Common amounts of severance are two or three times cash pay (salary plus bonus). Continued vesting of unvested stock options is also fairly common.

### **3. Literature review**

Before discussing the various theories regarding severance agreements, I first briefly discuss the literature on CEO turnover, as this provides a relevant background for understanding and judging theories of severance agreements.

CEO turnover and its relation with firm performance have been extensively researched in the past two decades. Involuntary turnover is costly to managers. There are costs in the form of loss of reputation and loss in future income. Gilson (1989) and Fee and Hadlock (2004) find that relatively few terminated CEOs find comparable employment. This potentially makes the threat of termination a useful incentive device to constrain moral hazard problems. Stiglitz and Weiss (1983) show analytically that termination of employment based upon low performance can be part of an optimal contract if there is a lower bound to any performance-based pay. Empirical research has found evidence consistent with this prediction. Firm performance, measured as stock returns, or accounting performance relative to the industry average or relative to analysts' forecasts, has consistently been found to correlate negatively with CEO turnover. Various factors, such as the percentage of outside directors, the existence of blockholders, and the relative informativeness of the performance measures, have been found to affect this relation. While these results are generally consistent with the theory, the economic significance of the effect of performance on turnover is generally small, see Brickley (2003) and Murphy (2001) for more extensive overviews.

Resolution of uncertainty about the abilities of the CEO provides another reason for performance related turnover. Low performance is a signal of low ability instead of low effort, and results in higher turnover. Fama (1980) and Gibbons and Murphy (1992) argue that, due to the positive effect of effort on future career opportunities, learning about the executives' abilities generates incentives to provide unobservable effort. Recent literature investigates the relative importance of moral hazard and resolution of uncertainty in explaining executive turnover. In a model of moral hazard with

independent time periods, one would expect performance-related turnover to be uncorrelated with the executive's tenure, since every period is the same and requires similar termination incentives. In contrast, matching models and models with initial uncertainty about the abilities of the CEO predict lower turnover later in the executives' tenure (Jovanovic, 1979). Consistent with the latter, Allgood and Farrell (2003) find that the likelihood of turnover increases in the first few years of a CEO's tenure and reaches a peak after about four or five years in office after which the likelihood declines. Similarly, using a sample of film directors, a job somewhat akin to that of a CEO, John, Ravid and Sunder (2003) find that the drop-out rate is higher early in the career of film directors and lower for directors with more experience. They also find that average past performance matters more than most recent performance, again inconsistent with a moral-hazard-based explanations and consistent with theories based on matching and learning about ability. Consistent with uncertainty about the ability of new CEOs, Clayton, Hartzell and Rosenberg (2005) find that stock return volatility increases following CEO turnover. Overall, these papers suggest that while termination may have incentive effects, these are not the primary explanation for performance-based turnover.

This evidence is important because the moral hazard models leave little room for severance pay. While we might expect to see some instances of ex-post severance pay to induce the executive to refrain from damaging the company, we would not expect to see ex-ante severance agreements. The reason is that specifying payments in case of future terminations reduces the incentives from the threat of termination. Instituting severance agreements therefore exacerbates rather than ameliorates moral hazard problems related to the manager's unobservable actions. Recently, there have been several theoretical

attempts to explain the existence of severance agreements. They all rely on certain deviations from the standard moral hazard model.

In Almazan and Suarez (2003), the deviation from the standard model comes in the form of uncertainty about the quality and availability of a rival CEO. When a superior CEO becomes available, the board is inclined to renege on any implicit agreements with the existing manager. This threat of dismissal undermines the probability of success of the existing manager's value enhancing projects and thus limits his incentives to invest. Severance agreements help the board commit to keeping the CEO and thus provide better incentives to the current CEO. Similarly, the model in Berkovitch, Israel and Spiegel (2000) has uncertainty about the quality of the manager. After resolving the uncertainty, boards have an incentive to fire the CEO after low performance. Ex-ante, the replacement rule may be too harsh to provide the right incentives to the CEO and severance can help the board commit not to fire the manager. In the opposite case, where the replacement rule is too soft, the adoption of risky debt can give boards stronger incentives to fire the manager, because the risk involved with hiring a new manager benefits shareholders at the expense of debt holders. In these and subsequent models, the uncertainty is shared by the firm and the CEO, so that there is no role for sorting or signaling arguments. The difference is in whether the subsequent learning about the ability is symmetric, as in the models above, or asymmetric, as in the models below.

Inderst and Mueller (2005) and Laux (2005) suggest that a major reason for severance agreements is to provide the CEO with incentives to disclose bad news. Initially both managers and the board face the same uncertainty, but subsequently managers learn faster about their type. Without severance agreements, CEOs have an

incentive to hide bad news from the board, because remaining with the firm under poor performance (and receiving low performance-based pay) is better than getting fired and receiving nothing. With severance agreements, disclosure becomes optimal when getting fired and receiving severance pay is preferable to receiving very low performance-based pay. Laux (2005) also suggests that weak boards, which are reluctant to fire the manager, are an alternative way of eliciting the bad news. Finally, Ju, Leland and Senbet (2002) suggest that severance agreements are important in getting the CEO to take on more risk. Receiving protection on the downside, in addition to rewards for success, induces the CEO to take high risk projects.

In addition to the theoretical literature on severance agreements, there are a few related empirical papers. Schwab and Thomas (2004) provide an empirical analysis of a sample of 375 CEO employment contracts of S&P 1500 firms. They provide an in-depth analysis of various features of these contracts. Although not all employment contracts contain a severance provision, and not all severance agreements are part of a full-scale employment contract, the authors nevertheless provide some interesting descriptive statistics on the salary multiples that would become payable in case of involuntary terminations. They find that multiples of two and three times salary are most prevalent.

Gillan, Hartzell and Parrino (2005) also investigate these employment contracts. They focus on predicting which executives have explicit employment contracts. They argue that managers get explicit employment contracts to protect them from opportunistic actions by the firm (such as reductions in benefits, responsibilities etc.) after the manager takes the job. They argue that cross-sectional variation is due to variation in the board's reputation costs. And they predict and find that explicit contracts are more likely when:

the board is more independent; the firm has low reputation (measured as below industry median profitability); the CEO is an outsider, the CEO is older; the ratio of incentive pay to total pay is higher; the industry is less homogeneous; and uncertainty is lower (measured by stock return volatility and industry survival rate). Using a Tobit specification, the authors find similar results when investigating the length of the employment contract. However, they do not test for the existence or features of severance agreements.

Yermack (2005) studies separation agreements for a sample of 179 departing CEOs from Fortune 500 firms. He finds that firm size, the number of years until retirement and an indicator for whether the termination was involuntary are positively and significantly related to ex-post severance payments. He also finds evidence that CEOs may receive substantial amounts in addition to the contractually specified severance benefits. An event study around the release of the proxy statements containing the details of the separation agreement reveals a negative and significant market response. This negative response is concentrated in the voluntary turnover sample. The response in case of an involuntary turnover is zero. There is some further evidence suggesting that the negative response is larger for bigger severance packages.

#### **4. Hypothesis development**

Based on the existing theories on severance and findings from the general compensation literature, I formulate two sets of hypotheses. First, I discuss hypotheses regarding the existence and size of severance agreements. Second, I discuss hypotheses linking severance arrangements to executive turnover. The hypotheses are designed to test, and distinguish amongst, the available theories.

#### *4.1 Determinants of severance agreements*

This section discusses the determinants of severance agreements. The hypotheses are phrased in terms of variables affecting the likelihood of a severance agreement. However, I also expect these variables to have the same directional effect on the magnitude of severance, i.e., factors expected to increase the likelihood of a severance agreement are also expected to increase the amounts of severance.

##### *4.1.1 Uncertainty about the fit between CEO and firm*

Ex-ante uncertainty about the fit between the CEO and the firm leads to some instances in which the fit turns out to be poor. The resulting turnover will be costly to the executive in terms of lost pay and reputation. Severance agreements can be viewed as an insurance policy against this poor fit. However, given that there is also a moral hazard problem in the firm, we would expect only partial insurance or, at the extreme, no insurance. As the uncertainty about ability becomes greater relative to the moral hazard problem, we would expect to see more and higher severance agreements. The theory on severance provides another reason for this relation. The greater turnover resulting from the higher uncertainty reduces the manager's incentives to make relationship specific investments (Berkovitch, Israel and Spiegel (2000), and Almazan and Suarez (2003)).<sup>3</sup> In those models, boards can commit to not fire the CEO upon moderately disappointing performance by instituting a severance agreement. This will increase the likelihood the executive stays with the firm, and thus his incentive to invest. The uncertainty about the fit between the CEO and the firm has two sides, uncertainty about the CEO and

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<sup>3</sup> The model in Almazan and Suarez (2003) is stated in terms of uncertainty about the quality of a potential rival CEO, but can be reformulated in terms of uncertainty about the quality of the current CEO.

uncertainty about the (future) needs of the firm. This leads to the following two hypotheses:

*H1: Greater uncertainty about the abilities of the CEO increases the likelihood of a severance agreement.*

*H2: Greater uncertainty about the (future) needs of the firm increases the likelihood of a severance agreement.*

The measure for uncertainty about the ability of the new CEO is the time he/she has spent at the company. This is measured in two ways: the number of years the CEO worked for the firm before becoming CEO, and an indicator variable based on whether the executive joined the firm within the last twelve months (labeled outside CEO). This provides an intuitive measure of the uncertainty about ability. Executives who have been with the firm for a long time have already demonstrated their fit in the organization and the board has had several years to observe their performance. It also has the advantage of being specific to the executive rather than being a general measure of firm uncertainty. Moreover it is plausible that the monitoring technology of the board is similar across internal and external CEOs, thus holding the moral hazard problem more or less constant. The uncertainty about the CEO's abilities is likely less if the CEO worked in the same industry before. I therefore include an indicator variable based on whether the executive's prior firm was in the same industry.

When there is high uncertainty about the needs of the firm, there is also likely to be uncertainty about how the executive will perform in the new position even though the executive might have a long track record. I examine four measures of uncertainty. The first uncertainty measure is the volatility of the stock returns in the year prior to taking office. The second measure is the performance of the firm in the year prior to taking

office. When the firm performs poorly, this causes uncertainty about the suitability of the current strategy. The third and fourth uncertainty measures are related to the probability a strategy change is needed, which is the key driver in the models of Inderst and Mueller (2005) and Laux (2005). The third measure is the number of years the prior CEO spent in office and the fourth measure is realized executive turnover in the same industry (based on the Barth, Beaver, Hand and Landsman (1999) classification) in the next three years (as a proxy for the expected turnover). Longer tenure of the prior CEO suggests a relative stability in the needs of the firm, whereas high turnover in the industry suggests a need for frequent strategy changes.

#### *4.1.2 The need to provide risk taking incentives*

An important part of the CEO's job is to make investment decisions that significantly influence the future profitability of the firm. Often there is significant uncertainty about the future payoff of projects. This means that even projects that appear to have a positive net present value (NPV) at the time of the investment can turn out very poorly. In these cases we can expect higher CEO turnover, either because the board uses the outcome of the project to judge the investment decision, or because external pressure forces the board to use the CEO as scapegoat. This would lead the CEO to forgo positive NPV projects with a substantial probability of low outcomes. To prevent this, boards can provide severance as insurance against these low outcomes, thereby inducing the CEO to take on riskier projects (e.g., Ju, Leland and Senbet (2002)). This leads to the following hypothesis:

*H3: Greater need for risky investment increases the likelihood of a severance agreement.*

I measure the need for high risk investments in two ways. The first measure is the volatility of stock returns, under the assumption that firms with higher risk also have a higher risk investment opportunity set. This measure is also used as a measure of firm uncertainty (see hypothesis 2). In addition, I use the book-to-market ratio, a frequently used inverse measure of growth opportunities. Growth opportunities do not need to result in high risk investments. However, economic theory would suggest that the high value growth opportunities reflected in the book-to-market ratio be of higher than average risk.

#### *4.1.3 CEO pay level*

There are several reasons to study the relation between severance agreements and the level of CEO compensation. First, a tradeoff is expected between severance and other forms of pay. CEOs that get large severance agreements need less other benefits to reach the same certainty equivalent. This predicts a negative relation between the level of pay and the likelihood of severance agreements. Second, pay level is a proxy for the bargaining power of the new CEO and the strength of the governance system (e.g., Core, Holthausen, and Larcker (1999)). This predicts a positive relation between the level of pay and the likelihood of severance agreements. Finally, the overall pay level may be a proxy for the expected ability of the manager. This has several conflicting implications. On one hand, high estimated ability could be associated with high uncertainty or larger losses resulting from terminations, which leads to more severance agreements. On the other hand, high ability CEOs may be less likely to be terminated and they might have better outside opportunities and thus suffer less from any termination, both leading to less severance pay. Given the conflicting predictions, the following hypothesis is stated in the null form:

*H4: The new CEO's excess compensation is unrelated to the likelihood of severance agreements.*

#### *4.1.4 Corporate governance*

Prior literature on executive compensation has frequently looked at the effects of corporate governance on compensation levels and mix, e.g., Core, Holthausen, and Larcker (1999). Not all findings from this literature carry over to the setting in this paper. For example, given my focus on starting CEOs it is less likely that they have already captured the board at the time of the severance negotiation. Nevertheless, it might be instructive to see if any relation between governance and severance is present.

There are several reasons to expect a negative relation between severance agreements and governance quality. First, Almazan and Suarez (2003) argue that severance payments will be higher under weak boards, because under weak boards the CEO can resist his termination unless he is paid enough to leave. However, this argument is more compelling for ex-post rather than for ex-ante severance agreements because there is no need for an ex-ante contract if, ex-post, the CEO can effectively veto his termination. More generally, managerial power (weak governance) is assumed to be used to increase expected pay levels and decrease pay-for-performance (e.g., Bebchuk and Fried (2004)); severance is one way to accomplish this. Self-selection of managers based on risk preferences also predicts a negative relation between governance quality and severance agreement, since risk averse managers will desire severance agreements and move into firms with weak governance.

In contrast, viewing governance mechanisms as having different costs and benefits, rather than being good or bad, provides an alternative perspective. Insider boards are not so much powerless vis-à-vis the CEO, but rather are moved by sympathy

towards the CEO once having worked with him or her intensively. In the future, this will make them naturally less inclined to replace CEO, unless upon very poor performance. Insider boards are thus an alternative commitment device not to fire the CEO lightly (e.g., Laux (2005)), resulting in a positive relation between strong boards and the incidence of severance agreements. Similarly, in the Berkovitch, Israel, and Spiegel (2000) model, risky debt (akin to strong governance) and severance are used as competing mechanisms. Severance decreases turnover by making firing more costly to the board, whereas high debt increases turnover because turnover increases uncertainty (e.g., Clayton, Hartzell, and Rosenberg (2005)) which benefits shareholders at the expense of bondholders. Therefore they expect a negative relation between severance and debt. However, high levels of debt are likely also indicative of uncertainty about the prospects of the firm, which would lead to more severance agreements. Given conflicting predictions on the governance variables, I state the following hypothesis in null form:

*H5: Corporate governance is unrelated to the likelihood of a severance agreement.*

My main governance proxy is the fraction of outside directors, because outside directors are associated with a stronger relation between performance and CEO turnover (e.g., Weisbach (1988)) consistent with stronger monitoring in the theories. To test the risky debt hypothesis in Berkovitch, Israel, and Spiegel (2000), I use firm leverage.

#### *4.2 The effect of severance agreements on CEO turnover*

This section discusses the relation between severance agreements and executive turnover. The theories on severance pay in the literature differ starkly in their assumptions and the role of severance. However, in terms of empirical predictions they often agree that the likelihood/amounts of severance pay should be higher in situations

where there is greater uncertainty, either about the ability of the manager, the availability and ability of a rival CEO, or the need for a strategy change. To further distinguish between the theories I look at the relation between severance agreements and CEO turnover. With respect to this relation, there are two opposite effects. First, severance agreements prevent the board from firing the CEO in situations where there are only moderately better replacements available, because the costs of firing exceed the benefits. This implies that higher contractually specified severance amounts reduce the probability of CEO turnover, a view advocated in Berkovitch, Israel and Spiegel (2000) and Almazan and Suarez (2003). Second, severance pay has the opposite effect on the actions of the CEO. Severance makes the CEO come forward with bad news that could eventually get him replaced. The CEO chooses to disclose this information because getting fired and collecting severance pay makes him better off than staying with the firm and getting low performance-based pay. Thus, in this case higher severance will increase the probability of CEO turnover. This is the argument in Inderst and Mueller (2005) and Laux (2005). Since there are conflicting predictions, the hypothesis is stated in null form:

*H6: The amount of the severance agreement is unrelated to probability of turnover.*

## **5. Sample selection**

I collect a sample of executives for whom I can obtain information on the existence and features of severance agreements and follow the career path. I focus on a group of starting CEOs since uncertainty about their job-specific abilities is likely greatest, and the theories on ex-ante severance agreements are most applicable. To obtain such a sample, I first collect a comprehensive sample of firms with coverage on CRSP, Compustat, and Execucomp. Then I select the subsample of firms with a new CEO in

fiscal years 1994 through 1999. This ensures that at least five years of data are available after the executive takes office. Utilities (SIC codes 4900-4999) and firms in the financial sector (SIC codes 6000-6999) are excluded. Firms without coverage on the IRRC anti-takeover provisions database are also excluded. The resulting sample provides a wide variety of firms. To give an overview, firms are classified using the Compustat historical index identifier as S&P 500, S&P MidCap or S&P SmallCap firms. The number of new CEOs per group and year are displayed in Panel A of Table I.

Given the substantial amount of hand-collection needed, I generate a random subsample of the available firms. This is accomplished by sorting the firms within each year based on the market values at the end of the prior fiscal year and then picking every other firm. This procedure results in a sample of 357 new CEOs and ensures that there will be a wide variety in the size of the firms. For each of these 357 firms, I then check the proxy statements to find out whether the executive has a severance agreement, and if so, collect its terms. In addition, I collect data on CEO characteristics such as age and whether the CEO is an outsider. I then follow this executive until he/she is terminated (or 2005 is reached), updating the information on the severance agreement and change-in-control agreements when necessary. After checking the proxy statements, I further eliminate 52 firms for various reasons, such as because the CEO is an interim CEO or for lack of data. Panel B of Table I summarizes the sample selection process.

Panel A of Table II provides descriptive statistics on the features of the severance agreements and, for comparison, change-in-control agreements. Just over half of the CEOs (160 out of 305) have some form of severance agreement. In contrast, 263 CEOs (or 86% of the sample) have some form of change-in-control agreement. The most

common component of the severance agreements is some multiple of salary, with a median multiple of two times salary. These come in two forms: either a fixed multiple, such as two times salary, or as salary continuation during the remainder of the contract. In the latter case, I use the initial contract length to measure the multiple. In a little less than 60% of the contracts, a multiple of bonus is also included. And 42.5% of all agreements (68/160) include accelerated vesting of the executives unvested stock options. A few contracts include fixed amounts instead of, or in addition to, the multiples of salary and bonus. The cash severance amount is defined as the sum of those fixed amounts, and the product of the multiples and the applicable salary and bonus. The total severance amount also includes the value of the vesting provisions. There is considerable dispersion in the amounts, with a median cash (total) severance pay \$1.726 (\$2.278) million and a mean of \$2.613 (\$5.897) million. To provide more insight in the relative importance of these severance agreements, I scale the severance amount by the total cash pay in the first full year of employment, or the first year of employment if higher. The amounts are significant enough to be noticed by the executive (the median is two times cash pay), but not so large as to create perverse incentives.<sup>4</sup>

I further collect accounting data from Compustat, stock price data from CRSP, and executive compensation data from Execucomp. I obtain shareholder rights provisions from the IRRC Governance database. Given that this data is not updated every year, I match with the closest available year. Board independence data is obtained from the IRRC Directors database. This database only starts in 1996 and I use the 1996 data for

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<sup>4</sup> Note that the change-in-control agreements are both more common and provide for larger payments. This finding is consistent with the negative incentive effects of change-in-control agreements being more problematic than those of severance agreements leading to higher optimal levels of protection.

1994 and 1995 as well.<sup>5</sup> Based on my hand-collected data from proxy statements I have information for 305 firms. Given the way I selected the sample, coverage in the databases is nearly complete. When for a firm a certain variable is still missing, I use the sample mean of that particular variable. Panel B of Table II gives the descriptive statistics for the 305 firms that are used in the analyses.

The average new CEO has spent about eight years at the firm before being elevated to the CEO position. But there is considerable variation in tenure with 31% having joined the firm within one year of taking the CEO position (labeled as outside CEOs). 57% of the outside CEOs come from a similar industry (based on the Barth, Beaver, Hand, and Landsman (1999) industry classification) and 32% were previously CEO at another firm. As could be expected the performance in the year before appointment is below average, both industry adjusted return on assets and market adjusted stock returns are negative. Given the data requirements the firms in the sample are large with mean (median) market values of \$5.47 billion (\$1.27 billion). The firms tend to have a majority of independent directors. Excess pay, defined as the residual of year-specific regression of log of total pay on log of market value, market-to-book, volatility of stock returns and industry dummies (using the Barth, Beaver, Hand, and Landsman (1999) classification) estimated using all available CEOs on Execucomp, is positive on average. This is to be expected, given that the pay level used is the maximum of the first year's total pay or the first full year's total pay.

Table III shows the Pearson correlations between the variables used in the analyses. From this we can see that CEOs who joined the firm within a year of their elevation to the CEO position, and generally CEOs that have not been with the firm very

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<sup>5</sup> In the future I will hand-collect data for those two years instead.

long, are more likely to receive a severance agreement. Firms that underperform in terms of ROA are also more likely to grant a severance agreement. Large firms are somewhat less likely to give severance agreements, which could be due to the fact that they are more likely to have inside candidates. Firms with high levels of uncertainty are more likely to have severance agreements. Similarly firms where the prior CEO had a long tenure are less likely to have severance agreements. Finally, firms with higher (excess) pay are more likely to receive severance agreements. When looking at severance multiple (only for the 154 firms with positive cash severance amounts), a somewhat different picture emerges. Firm size and excess pay are both strongly positively related to the severance amounts. The tenure of the prior CEO is also (negative and) significantly related to the severance multiple. Obviously, these are just univariate comparisons that should be further analyzed using regression analysis.

## **6. Research design and discussion of results**

This section consists of three parts. First, I discuss the results of the determinants of the existence of a severance agreement. Second, I discuss the determinants of the amounts of severance pay. Third, I discuss the analysis linking severance agreements to CEO turnover.

### *6.1.1 Determinants of the existence of severance agreements*

To investigate which CEOs have any form of severance agreements in the year they take office, I run a probit model using all 305 firms. The independent variables are described in the hypothesis development section. In addition, I include firm size (measured as the log of market value in the prior year) and an indicator variable for whether the executive is 60 years or older when becoming CEO (this occurs in 7.5% of

the firm-years), as control variables. Year dummies are also included, but not reported. Table IV shows the results of this analysis. I first discuss columns I through VI, which cover the incidence of all types of severance agreements, and then discuss column VII, which focuses only on accelerated vesting provision. Because the independent variables are in part capturing the same constructs, I introduce them separately in columns I through IV, before combining them all in columns V and VI.

Column I shows that greater uncertainty about the CEO's firm-specific abilities, measured by the outside CEO indicator, results in a higher probability of having a severance agreement, consistent with hypothesis 1. I find that whether the outside CEO came from the same industry has no significant incremental impact on the beyond the main effect of being an outsider. In a robustness test, I find the same for whether the executive was CEO at his or her prior firm. Consistent with hypothesis 2, firm performance is negatively correlated with the likelihood of a severance agreement. However, this relation is reversed for outside CEOs. Incoming CEOs over 60 years old are less likely to have a severance agreement. This is consistent with those executives having less uncertainty given their long track record and also consistent with them having less to lose given their proximity to retirement.

From column II we learn that consistent with hypothesis 2 the length of time the prior CEO has spent in office is negatively and significantly related to the probability of having a severance agreement. This suggests that firms with more stability and less frequent strategic change have less need for severance agreements. The industry level probability of turnover is not significantly related to the incidence of severance

agreements. This does not support hypothesis 2. Results are similar when using the realized turnover in the past two years instead of the future three years.

Column III shows the effect of the return volatility on the probability of having a severance agreement. The relation is positive, but only marginally significant. This result supports the idea that severance agreements are more prevalent in environments with a greater need for high risk investment decisions (hypothesis 3). However, the coefficient on the book-to-market ratio, an inverse measure of growth opportunities, is opposite of what would be predicted under the risk incentive hypothesis. This result is more consistent with CEOs in firms with poor prospects protecting themselves with severance agreements. In a robustness test, I also included the fraction of total compensation that comes in the form of options as a measure of the need for risk incentives. Prior literature has argued that firms use stock options to provide executives with incentives to increase firm risk (Guay (1999)). I view options, which provide large benefits if the project succeeds, and severance, which provides protection if the project fails, as complements. Thus, I would predict a positive relation between option-based compensation and severance agreements. However, it turns out that there is no relation.

In column IV, I find evidence that higher levels of excess pay are associated with a higher probability of having a severance agreement. This does not provide support for the hypothesis that there is a trade-off between severance agreement and other components of pay. It is consistent with managers with greater ability being able to get severance agreements, perhaps because they have more to lose. However, it is also consistent with managers with greater bargaining power being able to extract rents through both the regular pay elements and a severance agreement. Of the corporate

governance metrics from hypothesis 5, the fraction of independent directors has no effect on the probability of having a severance agreement. In a robustness test, I find that an alternative governance measure, an entrenchment index based on Bebchuk, Cohen and Ferrell (2005), also has no significant effect. I do find an effect of (industry-adjusted) leverage on the incidence of severance agreements. However, the relation is positive, opposite the prediction in Berkovitch, Israel, and Spiegel (2000). This finding is more consistent with firms in poor conditions being more likely to grant severance agreements. Overall, these results do not provide support for the hypothesis that weak governance increases the incidence of severance agreements (Almazan and Suarez (2003)), nor for the hypothesis that weak governance decreases the likelihood of severance agreements (Laux (2005)). However, if we view excess pay as indicative of the ineffectiveness of the overall governance structure (e.g., Core, Holthausen, and Larcker (1999)), then there is some support for weak governance being associated with more severance agreements.

When combining the variables in column V, I find that several of the variables lose significance. However, overall, the inferences remain the same. In column VI, I introduce an alternative measure of uncertainty about the CEO, the number of years he or she worked for the firm before becoming CEO. Not surprisingly, this reduces the effect of the outside CEO variable, since both measures reflect the same construct. It also reduces the effect of the age variable, suggesting it is experience rather than age that is important. Finally, column VII shows the determinants of the accelerated vesting provision for the CEO's equity holdings. Here I find that larger firm size, higher return

volatility, higher excess pay, lower growth opportunities, and shorter tenure with the firm are associated with a higher incidence of vesting provisions in severance agreements.<sup>6</sup>

### *6.1.2 The influence of the prior CEO's contract*

Thus far I have examined the severance agreement of the current CEO in isolation and tried to find economic determinants of their existence. An alternative viewpoint is that these agreements arise as part of the firm's 'compensation culture'. To study this further, I collect data on the existence of a severance agreement for the prior CEO. If the view that severance agreements are part of the overall compensation package that the firm offers is correct, we would expect to see strong persistence in the incidence of severance agreements. If the old CEO had an agreement, we would expect the new CEO to also have one. However, if economic determinants are the most important in explaining severance agreements, we might still find persistence in the incidence of severance agreements, as long the firm characteristics remain relatively constant.

I find evidence consistent with persistence in severance agreements. When succeeding a CEO with an agreement, 77% of the new CEOs have an agreement, whereas for successors of CEOs without an agreement the corresponding number is 37%. Table V further analyzes this. The first two columns show the effect of a straightforward control for the presence of a predecessor with a contract. As could be expected, the coefficient on this indicator variable is highly significant. Some firm variables lose significance after inclusion of this indicator. This is to be expected, given that some of the same underlying firm characteristics may have shaped the decision to grant the prior CEO the protection of a severance agreement. However, overall, the results look similar to those in Table IV.

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<sup>6</sup> I do not separately display the incidence of cash severance agreements, as this is nearly identical to the analysis of the total severance agreement (154 out of 160 firms with some form of agreement).

The continued significance of several firm and CEO variables provides evidence against the extreme version of the ‘compensation culture’ argument, where the decision to grant is just based on custom and not on economic considerations.

Next, I study what makes a firm switch from an agreement to no agreement, or the reverse. In the third and fourth columns of Table V, I look only at firms where the prior CEO did not have a severance agreement. Here I find that the presence of outside CEOs, CEOs with a short tenure at the firm, and CEOs with strong bargaining power, is more likely to lead to the initiation of a severance agreement. Older executives following a CEO with no agreement are not likely to get a severance agreement. Results for firms where the prior CEO had an agreement, displayed in columns V and VI, are somewhat different. The CEO’s age does not seem to matter, but in contrast to before, the firm’s growth prospects do matter. The better the prospects, the less likely the new CEO will follow the old CEO and get a severance agreement. Experience with the firm continues to be important.

## *6.2 Determinants of the amount of contractual severance pay.*

The prior section studied the effect of various factors on the existence of the severance agreements. In this section, I focus on the amounts agreed upon in the severance contracts. First, I focus firms with severance agreements, and then I discuss potential selection bias.

### *6.2.1 Determinants of the amount of cash severance pay*

The result of the analysis of the magnitude of severance agreements is displayed in Table VI. The first three columns study the amount of cash severance pay (based on 154 firms with positive cash severance). To make the amounts comparable, I scale by the

CEOs current cash compensation. The resulting multiple can be viewed as the number of years the (current) cash pay has been safeguarded by the severance agreement, and best captures the level of protection offered to the CEO. I then analyze the impact the hypothesized determinants have on this ratio.

I find that firm size is consistently positively related to the cash severance multiple. Note that this is not mechanical, since I already scale by the CEO's pay level. Consistent with the analysis of the determinants of the incidence of severance agreements, I find that outside CEOs receive more severance. Consistent with hypothesis 1, I also find that the positive effect of outside CEOs is substantially diminished when the CEO came from a firm in a similar industry. If introduced separately, tenure of the prior CEO (negative) and book-to-market (positive) are also significantly correlated with severance amounts (not tabulated). Overall, these results are consistent with, but weaker than, the results on the incidence of severance agreements. Correspondingly, the adjusted R-squared of the models is quite low. This does not mean that severance amounts per se are hard to predict. The main predictor of cash severance would be the level of pay. Regressing (the log of) severance pay on (the log of) cash pay and controls yields adjusted R-squareds of up to 50%. However, this type of regression would not adequately capture what I am looking for here, which is the level of protection offered to the CEO.

In columns IV through VI, I include both the equity component and the cash component of severance pay. I use the Core and Guay (1999) algorithm to calculate the value of the unvested portion of the equity holdings that become vested upon termination. It seems natural to scale the sum of cash and equity severance by total compensation. However, this measure can fluctuate a lot over time, given the erratic nature of option

grants. This is especially troublesome for the first year, in which the CEO often gets a ‘starting package’ of incentives. I therefore use the average of the first and second year’s total pay as the deflator to smooth out large option grants.

The results of the analysis are displayed in Table VII. As with the analysis of cash severance pay, it seems that large firms offer more protection when they decide to grant a severance agreement. There is also some evidence that outsiders get larger severance agreements. Contrary to the results on the incidence of severance agreements, the excess pay variable is now negative and significant. The most likely explanation is of a mechanical nature. High equity grants result in high excess pay. These grants will also show up in the denominator of the multiple, since they are part of total pay. However, they do not necessarily show up in the numerator, because less than half of the severance agreements contain accelerated vesting provisions. There is also a bit of evidence that independent directors help in reducing the severance amounts. Overall, it is clear that the analysis of the amounts is less consistent with the hypotheses than the analysis of the existence of severance agreements.

### *6.2.2 Potential selection bias in the analysis of the amounts of severance pay*

Since only half of the CEOs have an agreement in the year they take office, the question arises of how to deal with selection of CEOs into severance agreements. One way of dealing with the problem is to ignore it and estimate a regular regression on the executives with agreements only. This procedure is appropriate only if the selection is relatively random. Another approach is to explicitly take into account the selection problem. We can model the problem as follows (e.g., Wooldridge (2002)):

$$\text{Severance amount model: } y_1 = \mathbf{x}_1\beta + u$$

$$\text{Severance contract model: } y_2 = \mathbf{1}\{\mathbf{x}\gamma + v > 0\}$$

Here the function for the severance amount is specified in first equation. However, we only observe this amount if the second equation has been met, that is, if there is a contract. We always observe whether there is a contract ( $y_2$ ), and the list of potential determinants ( $\mathbf{x}$ , of which  $\mathbf{x}_1$  is a subset). Problems arise in estimating the amount model without regard to the selection, because  $u$  and  $v$  are likely correlated. That is, there are unobserved determinants of writing a severance contract that also determine what amount is specified in contract, e.g., the manager's risk aversion. If we are willing to assume that  $u$  and  $v$  are bivariate normal, and independent of  $\mathbf{x}$ , then we can estimate this model using the Heckman two-step estimator. This involves first estimating a probit of  $y_2$  on  $\mathbf{x}$  to determine who has a contract, and then running an OLS of  $y_1$  on  $\mathbf{x}_1$  and a correction factor derived from the probit estimates (the Inverse Mill's ratio). For this model to work well, it is preferable to have some variables in  $\mathbf{x}$  that are not also in  $\mathbf{x}_1$ . However, this is not necessary to obtain an estimate. If we do not have these additional variables, and we are furthermore willing to assume that  $\beta = \gamma$  and  $u = v$ , then this model reduces to the familiar Tobit model:

$$\text{Severance amount model: } y_1 = \mathbf{x}_1\beta + u$$

$$\text{Severance contract model: } y_2 = \mathbf{1}\{\mathbf{x}_1\beta + u > 0\}$$

This assumption matches the theoretical literature on severance well, since there is usually no distinction between the decision to write the contract and the decision on the amount of severance. However, from a practical perspective, there is no reason to assume it to be true. If the assumption is incorrect, the Tobit estimates will be inconsistent,

whereas the Heckman procedure will be consistent in both cases. Thus, given that the Heckman model is (somewhat) more robust, it is the preferred estimator. However, for comparison purposes, I show both approaches.

Table VII displays the results of the selectivity tests. The first two columns show the results for the Heckman procedure. The results on the cash severance are very similar to the OLS results, and not surprisingly the coefficient on the Inverse Mill's ratio is not significant, suggesting that there is no serious selection bias. Results on total severance deviate somewhat more from the OLS but the coefficient on the Inverse Mill's ratio is still not significant. Also note the substantial loss of power relative to the OLS. I try to alleviate this problem by adding the indicator variable for the prior CEO's severance agreement to the contract model, but leaving it out of the amounts model. Results are quite similar. There is still no evidence of a significant selection bias. The last two columns show the results from the Tobit model. These results are quite different from the Heckman model results suggesting that the Tobit model is misspecified.

### *6.3 Relation between severance arrangements and CEO turnover*

The prior sections have discussed the determinants of the existence and features of ex-ante severance agreements. This section investigates one possible consequence of these agreements, the effect on CEO turnover. Severance agreements could either reduce the likelihood of turnover by making it more expensive for the board to fire the CEO, or it could increase the likelihood of turnover by making the CEO more inclined to come forward with bad news that might result in his or her dismissal. In resolving this issue, I focus only on turnover during the ordinary course of business and exclude turnover due to the death of the executive or due to mergers and acquisitions. I focus on the first five

years after the initial year for two reasons. First, theories on matching and uncertainty about CEO quality seem more plausible in the first few years of a CEO's tenure. Second, five years is the maximum number of years for which I can (potentially) collect data for all my firms, 1999 being the last starting year for new executives. During these five years, I have 1119 firm-year observations, 80 of which have a turnover event. This means that about 26 percent of the CEOs leave within the first five full years after taking office (not counting those who leave due to death or mergers and acquisitions).

Usually analysis of CEO turnover is performed using a binary choice model such as a logit model. However, this does not take into account that the likelihood of leaving the firm varies with the tenure of the CEO. Hazard models allow for incorporation of this duration dependence. The proportional hazard model I use has the following form:

$$\text{Hazard}(\mathbf{x},t) = \lambda_0(t) * \exp(\mathbf{x}\beta)$$

The hazard function describes the (instantaneous) probability of turnover as a function of the time in office,  $t$ , and covariates,  $x$ , and consists of two parts: a baseline probability that is just a function of the time in office, multiplied by a function of the covariates only. This implies that the effect of the covariates is always proportional to the baseline probability of turnover.

The baseline hazard can be given either a parametric or a non-parametric specification. Given the coarse nature of my data (annual observations), I use a discrete hazard model developed by Prentice and Gloeckler (1978)<sup>7</sup>, in which I allow the turnover probability to vary by year of tenure as CEO. The results are displayed in Table VIII.

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<sup>7</sup> The Stata program (pgmhaz) for this hazard model was developed by Stephen Jenkins of the University of Essex and can be downloaded at <http://www.iser.essex.ac.uk/teaching/degree/stephenj/ec968/>.

The first three columns of Table VIII only take into account the cash component of severance. In column I, I show the severance variables only. From this we can see that conditional on having a severance agreement, larger agreements are associated with more turnover. However, the dummy on for the existence of a severance agreement is negative, suggesting that the CEOs with very low severance (less than one times salary and bonus) have lower turnover than CEOs without any agreement. In column II, I introduce standard control variables such as firm performance and CEO age. As could be expected, turnover is higher for older CEOs and CEO with poor (stock) performance. However, the results on the severance variables are similar. In the third column, I introduce several of the determinants of severance agreements to ascertain whether the relation between severance and turnover is causal or whether it is caused by the same underlying factors that determine severance agreements. These variables, outside CEO, return volatility, and excess pay, have little effect on the model, although they do manage to nudge the coefficient on the severance multiple just below the 10% significance level.

In columns IV through VI, I look at the total severance multiple and find starkly different results. These results suggest that conditional on having some form of severance agreement, the larger the severance amount, the lower the CEO turnover. The positive coefficient on the severance dummy indicates that CEOs with relatively small severance agreements (less than about 20 months of total pay) have higher turnover than those without severance agreements. Columns V and VI suggest that the introduction of control variables has little effect on the coefficient on severance amounts. Also note that the outside CEO variable is now positively and significantly associated with future turnover thus strengthening the claim that they should get more (severance) protection. Column

VII splits the severance amount in its cash and equity parts and finds similar results. It is the equity component that drives the negative association with turnover. In future tests, I hope to resolve this issue.

## **7. Conclusion and future work**

In this paper, I study severance agreements and their relation with CEO turnover. Severance agreements, which provide for benefits in case the executive is fired, provide an interesting exception to the pay-for-performance paradigm. Not only do executives get paid after having failed, but frequently these payments are contracted upon at the time the CEO is appointed. Several recent papers provide a theoretical justification for these agreements. Using a representative sample of new CEOs of S&P 1500 firms, I find that half the CEOs have some form of severance agreement in the year they take office. The median agreement provides for cash payments equal to two years worth of total cash pay. In addition, a substantial portion of the agreements (42.5%) provides for vesting of the CEO stock and option portfolio.

The analysis of the determinants of the presence and size of these agreements supports theories that predict that uncertainty about the quality of the CEO, measured by the time the executive worked for the firm before becoming CEO, and uncertainty about the viability of the firm's strategy, are driving which CEOs get a severance agreement. CEOs with high pay are also more likely to get a severance agreement. Pay level, firm size and the outside CEOs are the main factors driving the size of the severance package.

The investigation of the relation between severance agreements and executive turnover provides conflicting results. It appears that conditional on having an agreement greater amounts of cash severance pay are associated with higher turnover. However,

greater amounts of equity-based severance pay are associated with less CEO turnover. In future work, I hope to investigate this puzzling finding further by distinguishing the causes of turnover more precisely. In combination with this, I also plan to study the ex-post severance amounts, and how these relate to the ex-ante agreements studied in this paper.

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## **Appendix I: Disclosure rules regarding severance agreements and employment contracts (regulation S-K)**

### **Executive Compensation**

#### **Reg. §229.402. Item 402**

(h) *Employment Contracts and Termination of Employment and Change-in-Control Arrangements*. Describe the terms and conditions of each of the following contracts or arrangements:

- (1) Any employment contract between the registrant and a named executive officer; and
- (2) Any compensatory plan or arrangement, including payments to be received from the registrant, with respect to a named executive officer, if such plan or arrangement results or will result from the resignation, retirement or any other termination of such executive officer's employment with the registrant and its subsidiaries or from a change-in-control of the registrant or a change in the named executive officer's responsibilities following a change-in-control and the amount involved, including all periodic payments or installments, exceeds \$100,000.

## **Appendix II: Examples of disclosures in the proxy statements**

*From K-Mart's 1996 proxy statement:*

ARRANGEMENTS. The Company has entered into employment or severance agreements with the executive officers named under Compensation of Officers herein. Mr. Hall's agreement, which has a term ending June 3, 2000, provides for an annual salary of at least \$1 million, an annual on-plan incentive bonus of at least \$1 million (guaranteed for fiscal 1995 and based on the attainment of performance goals in the future) and the 1995 grants of the stock options and restricted shares described under Compensation of Officers herein. If his employment is terminated by the Company other than for cause or disability or if he terminates for good reason, he will be entitled to receive monthly severance payments equal to his monthly base salary at the time of termination, plus 1/12th the annual on-plan bonus for the year in which termination occurred (the "severance payments"). The severance payments will be made during a severance period equal to the term remaining on his employment agreement at the time of termination, but in no event for less than 12 months or more than 36 months.

*From Storage Technology's 1997 proxy statement:*

On June 24, 1996, the Company and Mr. Weiss entered into an employment agreement, which supersedes his December 1995 agreement and expires in May 1999. The agreement provides for annual base compensation of \$550,000, subject to adjustment, and participation in the MBO bonus program at a bonus percentage of 70%. For 1997, Mr. Weiss' base compensation has been set at \$620,000 and his bonus percentage is 80%. In the event of an involuntary termination without cause, or in the event of death, the agreement provides for a severance payment equal to the greater of (i) his annual base compensation through the end of the employment term, or (ii) 100% of his annual base compensation plus 100% of his then-current bonus percentage for the year of termination (whether or not such bonus would have been otherwise payable). In the event of a change in control followed by voluntary termination within 24 months, Mr. Weiss would receive an amount equal to the greater of two times his annual base salary plus two times 100% of the then-current bonus amount or the amount described above, and his outstanding stock options and restricted stock would become fully vested. Upon termination for cause, compensation would be paid only through the date of termination. The agreement also provides for medical and life insurance, financial services and an automobile allowance.

*From Lone Star Industries 1998 proxy statement:*

The Company has employment agreements with each of David W. Wallace and William M. Troutman. Pursuant to their respective agreements, Mr. Wallace is Chairman of the Company at an annual salary of \$210,000 and Mr. Troutman is President and Chief Executive Officer of the Company at an annual salary of \$400,000. Each of these

employment agreement's initial term runs through June 30, 1998 and, thereafter, renews for successive two-year terms unless terminated at the end of the then current term by either the Company or the executive on at least six months prior notice (in which case, if terminated by the Company, the executive receives one year's salary as severance pay and receives medical and certain other benefits during this one-year period). Upon a "change in control", as defined in his agreement, each of Messrs. Wallace and Troutman may terminate his employment and receive severance pay equal to two and one-half years' salary and receive medical and certain other benefits during this severance period.

*From Northwestern Steel and Wire 1998 proxy statement:*

On March 28, 1997, the Company, upon Compensation Committee and Board of Director approval, entered into an employment agreement with Thomas A. Gildehaus in connection with his becoming employed by the Company as Chief Executive Officer. At that time, the Company granted options to Mr. Gildehaus as described above under the heading "Option/SAR Grants in Last Fiscal Year". The employment agreement provides for a minimum annual salary of \$390,000, participation in the Company's annual short term incentive plan and in the Company's non-qualified Supplemental Executive Retirement Plan, supplemental life insurance, a disability income policy and other typical Company benefit programs. The employment agreement also includes severance benefits if Mr. Gildehaus is terminated for any reason other than "for cause" or Mr. Gildehaus terminates his employment with the Company for "good reason" (each as defined in the agreement), equal to the sum of base compensation and target bonus for the short term incentive plan then in effect. The employment agreement also contains a change in control provision. See "Change in Control Agreements" below for additional information. The employment agreement includes non-competition, non-solicitation and confidentiality obligations on the part of Mr. Gildehaus. As to Mr. Gildehaus, if either the Company terminates Mr. Gildehaus' employment with the Company for any reason, or Mr. Gildehaus resigns for "good reason" within one (1) year following a "change in control", Mr. Gildehaus shall be entitled, as a severance benefit, to twice the sum of the base compensation and target bonus then in effect, payable upon such termination.

*From IMC Global's 2000 proxy statement:*

EMPLOYMENT AGREEMENT. In connection with the employment of Mr. Pertz, in September 1998, the Company entered into an employment agreement with Mr. Pertz. The agreement is for an initial three-year term. The agreement terminates in the event of Mr. Pertz' death or disability. In the event of disability, he is entitled to base salary through the unexpired term of the agreement or, if earlier, his eligibility for retirement benefits. The Company may also terminate the agreement with or without "cause" (as defined in the agreement). In the event of termination by the Company without cause, Mr. Pertz is entitled to severance benefits equal to three times his then-current base salary, three times his highest annual bonus earned during the three prior years under the MICP and three times his highest annual award earned during the three prior years under

the LTIP. He is also entitled to continued participation in medical, dental, life and disability plans for up to three years. In addition, the vesting of outstanding stock options is accelerated and his balance in the defined contribution Supplemental Executive Retirement Plan becomes fully vested. Mr. Pertz may also terminate the agreement for "good reason" (as defined in the agreement, and which includes failure to promote him to Chairman of the Board of the Company by November 1, 2000). In the event of termination by Mr. Pertz for good reason, he is entitled to receive severance benefits as if he were terminated by the Company without cause. As of March 1, 2000, the amount of cash severance payments to Mr. Pertz in the event of termination by the Company without cause or by Mr. Pertz for good reason is estimated to be \$5,486,261.

## Table I: Sample Selection

### Panel A: Available firms by year and index

Index	1994	1995	1996	1997	1998	1999	all years
S&P 500	46	50	35	44	36	51	262
MidCap	29	23	19	31	34	32	168
SmallCap	19	16	18	46	53	58	210
Not classified	3	14	8	12	21	16	74
Total	97	103	80	133	144	157	714

### Panel B: Sample selection process

New CEOs on Execucomp (1994-1999)	1097
Insufficient data on CRSP, Compustat or IRRC	<u>-383</u>
Sample available	714
Randomly removed half of the sample	<u>-357</u>
Hand-checked sample	357
CEO acts as interim CEO only	-18
Executive was CEO of same firm in a prior period	-11
Unusual pay relations (i.e. management contract)	-4
Execucomp miscoding of CEO start date	-8
Insufficient data from proxy statements	<u>-11</u>
Final sample	305

**Table II: Descriptive Statistics**

**Panel A: Features of severance agreements**

Variable	N	Mean	Std	Min	p5	Q1	median	Q3	p95	Max
Severance dummy	305	0.50	0.50	0	0	0	1	1	1	1
Salary multiple	149	2.39	1.20	0.25	1.00	1.50	2.00	3.00	5.00	5.92
Bonus multiple	87	2.55	1.16	0.50	1.00	2.00	2.75	3.00	5.00	5.00
Cash severance amount (\$000)	154	2.613	3.201	63	275	750	1.726	3.001	8.336	26.000
Severance / cash pay	154	2.19	1.41	0.15	0.52	1.00	2.00	3.00	5.00	7.52
Severance vesting	305	0.22	0.42	0	0	0	0	0	1	1
All severance dummy	305	0.52	0.50	0	0	0	1	1	1	1
Total severance amount (\$000)	160	5.897	10.673	0	289	872	2.278	5.902	22.877	71.127
Total severance / total pay	160	1.11	0.97	0.00	0.13	0.45	0.81	1.66	2.67	6.20
CIC dummy	305	0.86	0.35	0	0	1	1	1	1	1
CIC salary multiple	216	2.71	0.90	0.50	1.00	2.00	3.00	3.00	4.67	5.92
CIC bonus multiple	180	2.76	0.83	0.50	1.00	2.50	3.00	3.00	4.33	5.00
CIC cash amount (\$000)	221	3.054	3.056	64	409	1.403	2.388	3.807	7.508	26.000
CIC amount/cash pay	221	2.71	1.23	0.32	0.88	2.00	2.99	3.11	5.00	7.52
CIC vesting	305	0.74	0.44	0	0	0	1	1	1	1

*Description of variables:*

- Severance dummy = Dummy, equal to one if the CEO has a cash severance agreement
- Salary multiple = Multiple of salary in severance agreement
- Bonus multiple = Multiple of bonus in severance agreement
- Cash severance amount (\$000) = Total amount of cash severance (in \$1,000)
- Severance/cash pay = Cash severance divided by first full year of cash pay
- Severance, vesting = Dummy, equal to one if the severance agreement includes vesting of options and/or lapse of restrictions on stock
- All severance dummy = Dummy, equal to one if the CEO has any kind of severance agreement
- Total severance amount (\$000) = Total amount of cash severance + equity severance (in \$1,000)
- Total severance / total pay = Total severance divided by 2-year average total pay
- Change-in-Control dummy = Dummy, equal to one if the CEO has a change-in-control agreement
- CIC salary multiple = Multiple of salary in change-in-control agreement
- CIC bonus multiple = Multiple of bonus in change-in-control agreement
- CIC cash amount (\$000) = Total amount of cash payments under change-in-control agreement (in \$1,000)
- CIC amount/cash pay = Cash CIC divided by first full year of cash pay
- CIC vesting = Dummy, equal to one if the change-in-control agreement includes vesting of options and/or lapse of restrictions on stock

## Panel B: Explanatory variables

Variable	N	Mean	Std	Min	Q1	median	Q3	Max
Tenure at appointment	305	8.29	9.30	0.00	0.17	5.67	12.67	38.25
Outside CEO	305	0.31	0.47	0	0	0	1	1
Outsider from same industry	96	0.57	0.50	0	0	1	1	1
Outsider was CEO before	96	0.32	0.47	0	0	0	1	1
Return on assets	305	-0.01	0.10	-0.62	-0.05	-0.01	0.03	0.32
Stock return	305	-0.10	0.39	-1.07	-0.35	-0.11	0.08	1.39
Prior CEO's tenure	305	10.36	9.15	0.25	4.17	7.50	13.17	48.58
Industry CEO turnover	305	0.18	0.04	0.07	0.15	0.17	0.20	0.27
Return volatility	305	0.11	0.06	0.03	0.07	0.10	0.14	0.34
Book-to-market	305	0.65	0.26	0.10	0.47	0.66	0.84	1.37
Excess pay	305	0.48	0.78	-1.55	-0.01	0.42	0.98	3.86
Independent directors	305	0.60	0.19	0.00	0.50	0.60	0.75	0.93
Leveraget-1	305	0.03	0.16	-0.26	-0.07	0.01	0.12	0.78
Age at appointment	305	51.40	6.24	34.00	47.00	52.00	56.00	70.00
Market value-1 (in \$B)	305	5.47	14.29	0.02	0.44	1.27	3.98	130.56
Prior CEO's contract	305	0.33	0.47	0	0	0	1	1

### Description of variables:

Tenure at appointment	=	Number of years CEO worked for firm before becoming CEO
Outside CEO	=	Dummy, equal to one if the CEO joined the firm within a year of appointment
Outsider from same industry	=	Dummy, equal to one if outside CEO comes from a firm in the same industry using the Fama-French industry classification
Outsider was CEO before	=	Dummy, equal to one if the CEO joined the firm within a year of appointment
Return on assetst-1	=	Return on assets in the fiscal year preceding the appointment (industry adjusted)
Excess stock returnt-1	=	Market adjusted stock return in the fiscal year preceding the appointment
Prior CEO's tenure	=	Number of years prior CEO was in office
Industry turnover	=	Realized CEO turnover in the same industry in the three years following appointment as CEO
Return volatility	=	Standard deviation of monthly returns in the fiscal year preceding the appointment
Market-to-book	=	Inverse of Tobin's Q, calculated as book value of assets divided by the sum of The market value of equity and the book value of liabilities
Excess pay	=	Residual of year-specific regression of log total pay (TDC1) on log of market value, Q, and industry dummies, estimated using all available CEOs on Execucomp
Independent directors	=	Number of independent directors divided by board size
Leveraget-1	=	Debt-to-assets ratio at the end of the fiscal year preceding the appointment (industry adjusted)
Age at appointment	=	Age of CEO at time of appointment
Market value-1 (in \$B)	=	Market value of equity at the end of the fiscal year preceding the appointment
Prior CEO's contract	=	Dummy, equal to one if the prior CEO had a severance agreement

All industry adjustments are based on the classification in Barth, Beaver, Hand, and Landsman (1999).

**Table III: Correlation matrix**

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV
I Severance dummy	1	.	<b>0.37</b>	<b>-0.41</b>	-0.11	<b>-0.25</b>	-0.01	<b>0.19</b>	<b>0.11</b>	<b>0.33</b>	0.05	<b>0.12</b>	-0.02	-0.10
II Severance multiple	.	1	0.12	-0.05	-0.04	<b>-0.18</b>	0.09	0.03	0.11	<b>0.19</b>	0.01	0.02	0.12	<b>0.19</b>
III Outside CEO	<b>0.37</b>	0.12	1	<b>-0.59</b>	<b>-0.12</b>	<b>-0.26</b>	-0.02	<b>0.24</b>	<b>0.12</b>	<b>0.43</b>	0.07	0.02	0.02	<b>-0.21</b>
IV Tenure at appointment	<b>-0.41</b>	-0.05	<b>-0.59</b>	1	<b>0.13</b>	<b>0.30</b>	0.00	<b>-0.25</b>	<b>-0.12</b>	<b>-0.34</b>	-0.02	-0.08	<b>0.20</b>	<b>0.26</b>
V Return on assetst-1	-0.11	-0.04	<b>-0.12</b>	<b>0.13</b>	1	0.05	0.07	<b>-0.33</b>	<b>-0.42</b>	-0.06	-0.03	0.04	0.06	<b>0.37</b>
VI Prior CEO's tenure	<b>-0.25</b>	<b>-0.18</b>	<b>-0.26</b>	<b>0.30</b>	0.05	1	0.01	<b>-0.17</b>	-0.08	<b>-0.14</b>	<b>-0.15</b>	-0.10	-0.02	-0.04
VII Industry turnover	-0.01	0.09	-0.02	0.00	0.07	0.01	1	<b>0.19</b>	-0.04	0.01	0.01	0.10	<b>-0.18</b>	0.06
VIII Return volatility	<b>0.19</b>	0.03	<b>0.24</b>	<b>-0.25</b>	<b>-0.33</b>	<b>-0.17</b>	<b>0.19</b>	1	0.06	<b>0.20</b>	<b>-0.12</b>	0.07	<b>-0.17</b>	<b>-0.33</b>
IX Book-to-market	<b>0.11</b>	0.11	<b>0.12</b>	<b>-0.12</b>	<b>-0.42</b>	-0.08	-0.04	0.06	1	-0.05	0.00	0.06	0.05	<b>-0.41</b>
X Excess pay	<b>0.33</b>	<b>0.19</b>	<b>0.43</b>	<b>-0.34</b>	-0.06	<b>-0.14</b>	0.01	<b>0.20</b>	-0.05	1	<b>0.16</b>	0.02	-0.04	0.01
XI Independent directors	0.05	0.01	0.07	-0.02	-0.03	<b>-0.15</b>	0.01	<b>-0.12</b>	0.00	<b>0.16</b>	1	-0.03	<b>0.12</b>	<b>0.20</b>
XII Leveraget-1	<b>0.12</b>	0.02	0.02	-0.08	0.04	-0.10	0.10	0.07	0.06	0.02	-0.03	1	0.08	0.01
XIII Age at appointment	-0.02	0.12	0.02	<b>0.20</b>	0.06	-0.02	<b>-0.18</b>	<b>-0.17</b>	0.05	-0.04	<b>0.12</b>	0.08	1	0.10
XIV Log(market value)t-1	-0.10	<b>0.19</b>	<b>-0.21</b>	<b>0.26</b>	<b>0.37</b>	-0.04	0.06	<b>-0.33</b>	<b>-0.41</b>	0.01	<b>0.20</b>	0.01	0.10	1

Correlations that are significant at 5% or better are indicated in bold.

**Table IV: Determinants of the existence of severance agreements**

This table shows the results of seven probit models predicting whether the executive has a severance agreement in the year of appointment to CEO. The dependent variable in columns I through VI is the all severance dummy, indicating the CEO has some form of severance (cash and/or equity) agreement (160 out of 305 observations). The dependent variable in column VII is the indicator variable for the existence of an equity severance agreement (68 out of 305 observations). For variable definitions see the notes to Table II. Reported are the coefficients from the models with t-statistics in italics. In addition to the variables listed in the table, the models include year dummies. Significance levels are indicated by stars: \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%, all based on two-tailed tests.

Model		I	II	III	IV	V	VI	VII
Outside CEO	+	0.992 *** <i>4.018</i>	0.906 *** <i>3.615</i>	0.971 *** <i>3.928</i>	0.828 *** <i>3.076</i>	0.751 *** <i>2.758</i>	0.408 <i>1.389</i>	-0.056 <i>-0.181</i>
Outsider from same industry		0.187 <i>0.619</i>	0.169 <i>0.555</i>	0.097 <i>0.317</i>	0.069 <i>0.216</i>	0.005 <i>0.017</i>	-0.009 <i>-0.027</i>	0.099 <i>0.338</i>
Return on assets	-	-2.590 ** <i>-2.446</i>	-2.393 ** <i>-2.250</i>	-1.539 <i>-1.337</i>	-2.534 ** <i>-2.334</i>	-1.662 <i>-1.411</i>	-1.666 <i>-1.381</i>	-1.894 <i>-1.536</i>
Outside CEO * ROA	?	4.792 *** <i>2.737</i>	4.594 *** <i>2.604</i>	4.545 *** <i>2.592</i>	4.820 *** <i>2.699</i>	4.470 ** <i>2.497</i>	4.283 ** <i>2.385</i>	3.673 * <i>1.949</i>
Tenure at appointment	-						-0.039 *** <i>-3.137</i>	-0.055 *** <i>-2.905</i>
Prior CEO's tenure	-		-0.021 ** <i>-2.202</i>			-0.017 * <i>-1.670</i>	-0.013 <i>-1.260</i>	0.002 <i>0.131</i>
Industry CEO turnover	+		0.534 <i>0.220</i>			-0.385 <i>-0.151</i>	-0.620 <i>-0.235</i>	-2.113 <i>-0.694</i>
Return volatility	+			3.596 ** <i>1.973</i>		2.016 <i>1.042</i>	2.025 <i>1.037</i>	6.543 <i>3.314</i>
Book-to-market	-			0.617 * <i>1.667</i>		0.525 <i>1.377</i>	0.537 <i>1.393</i>	0.679 <i>1.672</i>
Excess pay	?				0.402 *** <i>3.370</i>	0.391 *** <i>3.189</i>	0.337 *** <i>2.714</i>	0.234 * <i>1.725</i>
Independent directors	?				-0.067 <i>-0.145</i>	-0.157 <i>-0.330</i>	-0.116 <i>-0.242</i>	-0.411 <i>-0.791</i>
Leveraget-1	?				1.251 ** <i>2.390</i>	1.124 ** <i>2.139</i>	1.057 ** <i>1.984</i>	0.365 <i>0.625</i>
CEO is 60 or older	-	-0.595 ** <i>-1.987</i>	-0.554 * <i>-1.808</i>	-0.564 * <i>-1.855</i>	-0.567 * <i>-1.882</i>	-0.534 * <i>-1.713</i>	-0.344 <i>-1.045</i>	-0.261 <i>-0.575</i>
Log(market value)t-1	?	0.022 <i>0.405</i>	0.008 <i>0.138</i>	0.083 <i>1.364</i>	0.005 <i>0.093</i>	0.042 <i>0.655</i>	0.085 <i>1.269</i>	0.296 *** <i>3.808</i>

**Table V: Determinants of the existence of severance agreements:  
Influence of the prior CEO**

This table shows the results of six probit models predicting whether the executive has a severance agreement in the year of appointment to CEO, taking into account the existence of an agreement for the prior CEO. The dependent variable in all columns is the total severance dummy, indicating the CEO has some form of severance (cash and/or equity) agreement. The first two columns use all observations and include a dummy for whether the prior CEO had a severance contract. Columns III and IV focus on the subsample in which the prior CEO did not have a severance agreement, while columns V and VI analyze the subsample in which the prior CEO did have a severance agreement. For variable definitions see the notes to Table II. Reported are the coefficients from the models with t-statistics in italics. In addition to the variables listed in the table, the models include year dummies. Significance levels are indicated by stars: \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%, all based on two-tailed tests.

Model		All observations (305 observations)		Prior CEO no contract (204 observations)		Prior CEO contract (101 observations)	
Outside CEO	+	1.049 ***	0.524 *	1.246 ***	0.593	0.655	-0.065
		<i>4.064</i>	<i>1.716</i>	<i>4.083</i>	<i>1.553</i>	<i>1.316</i>	<i>-0.089</i>
Outsider from same industry	-	0.207	0.025	0.055	-0.199	0.673	0.488
		<i>0.651</i>	<i>0.075</i>	<i>0.148</i>	<i>-0.493</i>	<i>0.987</i>	<i>0.561</i>
Return on assets	-	-2.334 **	-1.249	-2.519 *	-2.478	-2.048	-0.482
		<i>-2.016</i>	<i>-0.948</i>	<i>-1.728</i>	<i>-1.418</i>	<i>-1.098</i>	<i>-0.208</i>
Outside CEO * ROA	?	4.949 **	4.426 **	5.555 **	5.772 **	3.073	2.004
		<i>2.573</i>	<i>2.267</i>	<i>2.392</i>	<i>2.313</i>	<i>0.913</i>	<i>0.602</i>
Tenure at appointment	-		-0.040 ***		-0.063 ***		-0.046 *
			<i>-3.023</i>		<i>-3.114</i>		<i>-1.790</i>
Prior CEO's tenure	-		-0.005		-0.004		-0.025
			<i>-0.422</i>		<i>-0.291</i>		<i>-0.947</i>
Industry CEO turnover	+		-0.186		-5.366		9.111
			<i>-0.068</i>		<i>-1.484</i>		<i>1.351</i>
Return volatility	+		2.722		2.449		4.409
			<i>1.326</i>		<i>1.015</i>		<i>0.758</i>
Book-to-market	-		0.594		-0.054		2.310 **
			<i>1.442</i>		<i>-0.103</i>		<i>2.516</i>
Excess pay	?		0.275 **		0.316 *		0.261
			<i>2.148</i>		<i>1.948</i>		<i>0.947</i>
Independent directors	?		-0.169		-0.852		1.805
			<i>-0.343</i>		<i>-1.385</i>		<i>1.521</i>
Leveraget-1	?		0.964 *		1.057		1.304
			<i>1.700</i>		<i>1.446</i>		<i>0.962</i>
CEO is 60 or older	-	-0.667 **	-0.428	-1.049 **	-1.098 **	-0.266	0.130
		<i>-2.067</i>	<i>-1.218</i>	<i>-2.273</i>	<i>-2.000</i>	<i>-0.464</i>	<i>0.164</i>
Log(market value)t-1	?	0.025	0.099	0.024	0.092	0.051	0.243
		<i>0.428</i>	<i>1.407</i>	<i>0.350</i>	<i>1.079</i>	<i>0.421</i>	<i>1.410</i>
Prior CEO contract	+	1.096 ***	1.034 ***				
		<i>6.102</i>	<i>5.418</i>				

**Table VI: Determinants of the magnitude of severance agreements**

This table shows the results of six models predicting the size of the severance agreement in the year of appointment to CEO. The dependent variable in the first three columns is the cash severance multiple (cash severance amount / cash pay). The dependent variable in columns IV through VI is the total severance multiple (total severance amount / 2-year average total pay). For variable definitions of the independent variables see the notes to Table II. All models use ordinary least squares analysis using the observations with positive severance amounts only (154 and 160 observations, respectively). Reported are the coefficients from the models with t-statistics in italics. In addition to the variables listed in the table, the models include year dummies. Significance levels are indicated by stars: \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%, all based on two-tailed tests.

<b>Model</b>		<b>I</b>		<b>II</b>		<b>III</b>		<b>IV</b>		<b>V</b>		<b>VI</b>
Outside CEO	+	0.704 **		0.527		0.561		0.170		0.394 *		0.375
		<i>2.320</i>		<i>1.590</i>		<i>1.520</i>		<i>0.810</i>		<i>1.730</i>		<i>1.470</i>
Outsider from same industry	-	-0.498		-0.668 *		-0.666 *		-0.096		-0.096		-0.096
		<i>-1.500</i>		<i>-1.970</i>		<i>-1.960</i>		<i>-0.420</i>		<i>-0.410</i>		<i>-0.410</i>
Return on assets	-	-1.074		-0.344		-0.356		-0.351		-1.085		-1.077
		<i>-0.800</i>		<i>-0.230</i>		<i>-0.240</i>		<i>-0.370</i>		<i>-1.040</i>		<i>-1.020</i>
Outside CEO * ROA	?	-1.856		-2.042		-2.026		-1.009		-0.509		-0.519
		<i>-0.850</i>		<i>-0.920</i>		<i>-0.910</i>		<i>-0.660</i>		<i>-0.330</i>		<i>-0.330</i>
Tenure at appointment	-					0.005						-0.003
						<i>0.210</i>						<i>-0.170</i>
Prior CEO's tenure	-			-0.027		-0.027				0.006		0.006
				<i>-1.520</i>		<i>-1.510</i>				<i>0.530</i>		<i>0.530</i>
Industry CEO turnover	+			3.988		4.016				0.140		0.098
				<i>0.960</i>		<i>0.960</i>				<i>0.050</i>		<i>0.030</i>
Return volatility	+			0.879		0.881				-0.305		-0.306
				<i>0.380</i>		<i>0.380</i>				<i>-0.190</i>		<i>-0.190</i>
Book-to-Market	-			0.784		0.777				0.068		0.070
				<i>1.560</i>		<i>1.540</i>				<i>0.190</i>		<i>0.200</i>
Excess pay	?			0.267		0.272				-0.260 **		-0.263 **
				<i>1.510</i>		<i>1.520</i>				<i>-2.110</i>		<i>-2.110</i>
Independent directors	?			-0.828		-0.825				-0.894 *		-0.897 *
				<i>-1.260</i>		<i>-1.250</i>				<i>-1.950</i>		<i>-1.950</i>
Leveraget-1	?			0.146		0.144				0.098		0.100
				<i>0.220</i>		<i>0.220</i>				<i>0.220</i>		<i>0.220</i>
CEO is 60 or older	-	0.200		0.248		0.234		0.224		0.067		0.073
		<i>0.360</i>		<i>0.440</i>		<i>0.410</i>		<i>0.580</i>		<i>0.170</i>		<i>0.180</i>
Log(market value)t-1	?	0.246 ***		0.278 ***		0.275 ***		0.141 **		0.206 ***		0.208 ***
		<i>2.930</i>		<i>2.950</i>		<i>2.860</i>		<i>2.470</i>		<i>3.190</i>		<i>3.170</i>
Adj. R-squared		0.040		0.065		0.059		0.007		0.023		0.016

**Table VII: Determinants of the magnitude of severance agreements:  
Selection models**

This table shows the results of four models predicting the size of the severance agreement in the year of appointment to CEO, correcting for the selection into the positive severance sample. The dependent variable is either the cash or total severance, as indicated. The first two columns use the Heckman correction, and the second pair of columns uses a Tobit model. For variable definitions of the independent variables see the notes to Table II. Reported are the coefficients from the models with t-statistics in italics. In addition to the variables listed in the table, the models include year dummies. Significance levels are indicated by stars: \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%, all based on two-tailed tests.

Model	Heckman				Tobit			
		Cash	Total		Cash	Total		
Outside CEO	+	0.578 * <i>1.65</i>	0.426 * <i>1.74</i>		0.812 * <i>1.73</i>	0.460 <i>1.56</i>		
Outsider from same industry	-	-0.668 ** <i>-2.11</i>	-0.104 <i>-0.47</i>		-0.500 <i>-1.07</i>	-0.128 <i>-0.44</i>		
Return on assets	-	-0.449 <i>-0.31</i>	-1.405 <i>-1.35</i>		-2.451 <i>-1.24</i>	-1.818 <i>-1.47</i>		
Outside CEO * ROA	?	-1.837 <i>-0.83</i>	0.166 <i>0.10</i>		4.347 <i>1.51</i>	2.934 <i>1.62</i>		
Tenure at appointment	-	0.002 <i>0.11</i>	-0.010 <i>-0.69</i>		-0.072 *** <i>-3.09</i>	-0.047 *** <i>-3.22</i>		
Prior CEO's tenure	-	-0.028 <i>-1.63</i>	0.003 <i>0.25</i>		-0.050 ** <i>-2.55</i>	-0.010 <i>-0.84</i>		
Industry CEO turnover	+	4.092 <i>1.04</i>	0.202 <i>0.07</i>		0.295 <i>0.06</i>	-1.817 <i>-0.63</i>		
Return volatility	+	0.946 <i>0.43</i>	-0.088 <i>-0.06</i>		3.153 <i>1.02</i>	1.665 <i>0.86</i>		
Book-to-market	-	0.811 * <i>1.66</i>	0.205 <i>0.58</i>		1.395 * <i>2.19</i>	0.567 <i>1.42</i>		
Excess pay	?	0.288 <i>1.63</i>	-0.205 <i>-1.61</i>		0.661 *** <i>3.14</i>	0.150 <i>1.14</i>		
Independent directors	?	-0.815 <i>-1.32</i>	-0.868 ** <i>-1.98</i>		-0.681 <i>-0.84</i>	-0.541 <i>-1.07</i>		
Leveraget-1	?	0.197 <i>0.31</i>	0.295 <i>0.64</i>		1.410 <i>1.64</i>	0.966 * <i>1.80</i>		
CEO is 60 or older	-	0.225 <i>0.42</i>	0.026 <i>0.07</i>		-0.269 <i>-0.44</i>	-0.264 <i>-0.69</i>		
Log(market value)t-1	?	0.278 *** <i>3.07</i>	0.222 *** <i>3.51</i>		0.250 ** <i>2.19</i>	0.181 ** <i>2.52</i>		
Inverse Mill's ratio		0.113 <i>0.27</i>	0.380 <i>1.24</i>					

**Table VIII: The effect of severance agreement on CEO turnover**

This table shows the results of seven hazard models predicting CEO turnover. The sample consists of the first five years in office after the initial year for each CEO in the sample. This results in 1119 firm-year observations including 80 turnover events. Turnover due to mergers and acquisitions and the death of the executive are not counted as a turnover event. All models are estimated using a discrete hazard model allowing for different baseline turnover for each year in office. For variable definitions of the independent variables see the notes to Table II. Reported are the coefficients from the models with t-statistics in italics. Significance levels are indicated by stars: \*\*\* significant at 1%, \*\* significant at 5%, \* significant at 10%, all based on two-tailed tests.

<b>Model</b>		<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>	<b>V</b>	<b>VI</b>	<b>VII</b>
Cash severance dummy	?	-0.20 <i>-0.65</i>	-0.24 <i>-0.77</i>	-0.26 <i>-0.82</i>				
All severance dummy	?				0.64 ** <i>2.26</i>	0.47 <i>1.62</i>	0.44 <i>1.44</i>	-0.08 <i>-0.26</i>
Cash severance multiple	?	0.16 ** <i>2.02</i>	0.15 * <i>1.77</i>	0.14 <i>1.63</i>				0.12 <i>1.46</i>
Total severance multiple	?				-0.38 ** <i>-2.23</i>	-0.32 * <i>-1.79</i>	-0.35 * <i>-1.91</i>	
Equity severance multiple	?							-0.43 * <i>-1.64</i>
Log(assets)	?		0.03 <i>0.42</i>	0.07 <i>0.80</i>		0.06 <i>0.73</i>	0.10 <i>1.22</i>	0.09 <i>1.12</i>
Excess stock returnt-1	-		-1.62 *** <i>-4.67</i>	-1.53 *** <i>-4.31</i>		-1.56 *** <i>-4.51</i>	-1.44 *** <i>-4.12</i>	-1.44 *** <i>-4.10</i>
Return on assets	-		-0.95 <i>-1.10</i>	-0.95 <i>-1.02</i>		-0.88 <i>-1.05</i>	-0.95 <i>-1.05</i>	-1.05 <i>-1.13</i>
CEO is 60 or older	+		0.06 <i>0.19</i>	0.04 <i>0.14</i>		0.10 <i>0.33</i>	0.07 <i>0.23</i>	0.00 <i>-0.01</i>
CEO is 64 or older	+		0.85 * <i>1.78</i>	0.82 * <i>1.68</i>		0.85 * <i>1.79</i>	0.89 * <i>1.84</i>	0.82 * <i>1.69</i>
Outside CEO	+			0.36 <i>1.41</i>			0.45 * <i>1.77</i>	0.41 <i>1.61</i>
Return volatility	+			0.97 <i>0.60</i>			1.01 <i>0.64</i>	1.22 <i>0.75</i>
Excess pay	?			-0.17 <i>-1.20</i>			-0.16 <i>-1.12</i>	-0.15 <i>-1.07</i>