Keeping up with the Joneses or responding to job uncertainty? The spread of CEO severance agreements

Peggy Huang and Lingling Wang

A.B. Freeman School of Business, Tulane University,
New Orleans, LA 70118, USA

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Abstract

The percentage of S&P500 firms that offer ex-ante severance agreements to their CEOs grew from 20% in 1993 to more than 55% in 2007 despite controversial discussions on executive severance contracts in the media and academic studies. In addition, about 40% of firms offer their CEOs severance contracts with cash-only payouts. Our paper focuses on this recent *spread* of ex-ante CEO severance agreement and provides evidence on the factors that have contributed to this spread and the firm's decision to include equity components in the severance payout. We find that firms are more likely to start adopting ex-ante CEO severance agreement when the previous CEO was forced out, firm stock volatility is high, the firm's expected bankruptcy risk is high, and the CEO turnover rate among the S&P 500 firms is high. Firms are also more likely to initiate ex-ante severance contracts when there are more firms adopting the ex-ante contracts in the same geographic area or when the firm's industry leader has adopted the ex-ante agreements. When deciding on whether to offer the CEO a cash-only contract or a contract with equity components, firms consider the CEO's existing equity ownership, their bankruptcy risk, the overall industry condition and whether their industry leaders have included equity components. Overall, our results suggest that the recent spread of ex-ante CEO severance agreements is an optimal response to the CEO's job uncertainty and an outcome of the firms' benchmarking practices.

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*Author contact information: Tel: +1-504-865-8045; Email: phuang2@tulane.edu (P. Huang), Tel: +1-504-865-5044; Email: lwang1@tulane.edu (L. Wang).

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1. Introduction

The percentage of S&P500 firms that offer ex-ante severance agreements to their CEOs grew from 20% in 1993 to more than 55% in 2007 (Figure 1), a steady 275% increase despite controversial discussions on executive severance contracts in the media and academic studies. Moreover, the median ex-ante contractual severance amount comes to about 7 million dollars, and on average, the ex-ante contractual cash severance amount is about 2.5 times CEOs' annual cash compensation (salary + bonus). About 40% of firms' severance contracts contain cash-only payouts, while the other 60% of firms offer their CEOs severance contracts with equity elements.

These observations raise several interesting questions: Why are more and more firms offering their CEOs explicit severance agreements? Is the *spread* of severance agreements an optimal response to the changes in the business and contracting environment, such as the increasing uncertainty in the CEO's job, and/ or firms benchmarking their compensation against their peers? Or does it represent instead, as most news articles put it, a failure of corporate governance? Moreover, why do some firms grant a cash-only severance agreement, while others offer an agreement with equity components? To shed light on these questions, we focus on the initial adoption of ext-ante CEO severance contracts and intend to identify factors that are systematically associated with a firm's decision to starting offering ex-ante severance contracts.

To understand firms' motivations for adopting ex-ante severance contracts, we develop the following hypotheses. The first is the increased job uncertainty hypothesis. The basic idea is that the increase in the adoption of explicit severance contracts may be a response to the increased uncertainty of 1) the firm's internal environment, and 2) external industry or market

conditions, over the last two decades. Consistent with this view, a perusal of our data shows that the CEO turnover ratio increased from 8% in 1994 to 18% in 2007, a 225% increase. The put option feature of a severance payout protects managers against the downside risks.[1] To attract and retain talented CEOs, firms can use severance agreements to mitigate the CEOs' costs associated with the increased uncertainty in their jobs.

Our second hypothesis, the benchmarking hypothesis, draws from the notion that firms often benchmark their compensation practices or firm policies with peer companies.[2] If firms follow other firms in designing their executive compensation, one firm's adoption of the severance contract may lead several peer firms to adopt a similar contract. The mandatory disclosure requirement by SEC makes it easier for firms to learn their peers' compensation designs and may be accelerating this benchmarking effect. In our paper, we focus on two channels of benchmarking: 1) matching the "neighbors" (firms in the same geographic area), and 2) matching the market leader in the firm's industry. Overall, we expect a positive relation between job uncertainty/benchmarking proxies and the initial adoption of severance contracts.

Based on a hand-collected sample of 2,961 firm-year observations from 1993 to 2007, we find results supporting both of our hypotheses. For the job uncertainty hypothesis, we find that firms with higher stock volatility, prior CEOs who were forced out, and high bankruptcy risks, are more likely to start offering their CEOs severance contracts. Furthermore, we find that firms are more likely to start awarding their executive severance contracts when the CEO turnover rate is high. CEOs bear significant reputation and income loss in the case of forced turnover or firm

[1] Almazan and Suarez (2003) show that by increasing the cost of firing the CEO, severance agreements act as a commitment mechanism so that the BODs do not fire the CEOs too easily, which would prompt CEOs to be willing to invest in the firms' specific human capital.
[2] See Bizjak, Lemmon and Whitby (2009), Faulkender and Yang (2010), and Davis (1991) for more information.

bankruptcy.[3] Our findings suggest that when the perceived job uncertainty and costs associated with CEO turnover are high, firms are more likely to start offering severance contracts to reduce the downside risk for CEOs.

For the benchmarking hypothesis, we find that firms are more likely to start offering ex-ante severance agreements when other CEOs in the same MSA area also have them. Moreover, we find that firms follow their market leaders' compensation practices when deciding to start awarding their CEOs severance agreements. When explaining the initial adoption of the ex-ante CEO severance agreements, our two hypotheses regarding job uncertainty and benchmarking, are not mutually exclusive. Specifically, some firms may begin to adopt ex-ante severance agreements because of the increasing job uncertainty. As the result of their initial adoptions, the practice is spread to other firms in the same geographic area and/or in the same industry. Hence, both job uncertainty and benchmarking contribute to the increase in the initial adoption of ex-ante CEO severance agreements among firms. Consistent with this view, all of our aforementioned results hold when we include proxies for both job uncertainty and benchmarking in the same regression.

Next we examine a firm's decision to grant either a cash-only severance agreement or an agreement with equity components. From the job uncertainty perspective, severance agreements with cash-only elements provide separation payments that are insulated from risks associated with the firm's future stock performance, which further reduces the downside risk for their CEOs. Thus, we expect firms with higher bankruptcy risk or in an industry downturn to be more likely to grant cash-only severance agreements to reduce the higher expected job risk for their CEOs. Our empirical findings support this hypothesis. From the benchmarking perspective, firms may

[3] See Gilson (1989, 1990), Gilson and Vetsuypens (1993), and Fee and Hadlock (2004) for more discussion.

have the tendency to offer the same type of controls as their peers or industry leaders. For example, if the industry's leading firm grants its CEO a severance agreement with equity components, other firms in the same industry may assume that the leader's type of contract is more appropriate for the industry, and therefore follow the leader's practice. We find strong support for this argument in our sample. We also find that firms are less likely to offer cash-only agreements when CEOs' equity ownerships are high, suggesting that firms consider the CEOs' overall income portfolios when designing severance contracts.

In sum, we provide evidence that each individual firm's operating environment and labor market conditions, as well as the benchmarking practices among firms, have contributed to the spread of ex-ante severance agreements as well as the decision to include either cash-only or equity components in these agreements. Our results are robust to the inclusion of both a set of factors that have been shown to influence CEO compensation contracting, and controls for year- and industry- fixed effects.

One alternative explanation for the spread of ex-ante severance contracts is that entrenched CEOs are using severance contracts to protect themselves and extract rents. Thus, the spread represents an outcome of governance failure. Contrary to the prediction of poor corporate governance, we find that CEOs with higher ownership are less likely to have ex-ante severance contracts. Furthermore, we find no relationship between the percentage of inside directors and the propensity to start offering ex-ante CEO severance agreements. In un-tabulated results, we examine both internal and external governance variables, such as classified board, CEO/Chairman duality, #board meeting, board size, g-index, CEO tenure, and institutional ownership. None of these governance variables has a statistically significant relationship with

the propensity to start offering CEO ex-ante severance agreements. Although we cannot completely rule out the influence of corporate governance, we find no evidence that a board is more likely to adopt severance agreements when the CEO is more powerful or when the firm's corporate governance is weak.

Our findings add to a growing body of literature on both ex-ante and ex-post contracting between the firm and the CEO.[4] Yermack (2006) studies ex-post severance agreements when CEOs leave their firms. Gillan et al (2009) uses a set of employment contracts in 2000 and examine the firms' decisions to have explicit CEO employment agreements. Rusticus (2006) examines the determinants of ex-ante severance agreements and the influence of severance agreements on CEO turnover. Both papers find that explicit contracts are more likely when the fit between the CEO and the firm is more uncertain and the expected loss to the CEO is greater. Our paper adds to this literature by showing that the decision to start adopting ex-ante severance contracts are affected by both the CEO's job uncertainty and the benchmarking on compensation designs among firms. Our paper differs from the previous studies in several ways. First, our focus is on the *spread* of ex-ante severance contracts and we are only interested in firms' *initial* adoptions of severance contracts. Second, we are the first paper that provides evidence on how benchmarking affects a firm's decision to start offering CEOs ex-ante compensation contracts. Third, we also examine the firm's decision to include equity components in the ex-ante contracts, which has never been documented in the literature. Fourth, compared to Gillan et al (2009), our focus is on severance agreements, which need not be a part of a CEO's general employment contract.

[4] Other papers that examine ex-ante CEO contracting include Kole (1997) on the terms of equity compensation plans, Xu (2011) on CEO employment contract horizons, Garmaise (2009) on non-competition agreements and Schwab and Thomas (2006) on legal characteristics of employment contracts. Lambert and Larcker (1985) and Agrawal and Knoeber (1998), among others, examine golden parachutes (change of control) agreements.

Some other recent studies have examined contract features that affect the ex-ante incentives for CEOs. For example, Faulkender and Yang (2010) investigate a firm's choice of peer groups when designing executives' annual compensation. Bettis, Bizjak, Coles, and Kalpathy (2009) find that firm and CEO characteristics influence the firm's decision to grant equity grants that have additional performance vesting features. Kim and Yang (2012) examine the design and performance consequences of ex-ante bonus incentives. These papers generally support the notion of optimal contracting. We complement these studies and show that the spread of ex-ante severance contracts likely represents firms' optimal responses to changes in the contracting environment.

The paper is organized as follows. Section 2 provides a brief discussion on the background of ex-ante severance agreements. Section 3 describes our sample. Section 4 discusses our hypotheses, empirical proxies, and empirical findings on our hypotheses. Section 5 concludes.

2. Severance agreements and Hypotheses Development

Severance agreements are legal agreements that specify CEOs' benefits as well as obligations in the event of termination. Starting in 1990, SEC requires firms to disclose severance agreements that they have with their executives in the financial statements. Firms usually file the agreements as an attachment to 10-K, 10-Q, 8-K, or proxy statements.

Schwab and Thomas (2004) provide a summary of the contracting details of CEO severance agreement. A standard severance contract contains both CEOs' benefits as well as obligations. For CEOs' benefits, the contracts may include cash payments, which are typically multiple times of the CEO's base salary and bonus. Some contracts may also include terms that allow continuing/immediate vesting of existing executive stocks and options. In return, CEOs may

need to agree not to compete with the company or solicit the firm's employees after leaving the company. Most severance payments are given to CEOs when they are terminated "without cause" or when they resign due to "good reason". Both "cause" and "good reason" are often narrowly defined in the contract. For example, "cause" may include items such as willful misconduct or breach of fiduciary duties. On the other hand, "good reason" can include involuntarily relocating CEOs or decreasing CEO base salary by a certain amount.

Based on the literature, we propose two hypotheses that may explain the spread of ex-ante severance contracts. The first is the increased job uncertainty hypothesis. Ex-ante severance agreements are contracted either at the time of hire or before turnover becomes imminent. By providing a guarantee of payments upon future involuntary termination of employment, these severance agreements remove the uncertainty and downside risks for CEOs. When facing increased job uncertainty, CEOs are more likely to demand severance contracts to mitigate their costs associated with the uncertainty. At the same time, firms also have incentives to offer CEOs severance agreements which may help them to attract and retain talented CEOs. Gillan et al. (2009) examine a set of employment contracts in 2000 and find evidence that explicit employment agreements are more frequently used by firms operating in a more uncertain environment. Rusticus (2006) also find that the stability of the firm affects the CEO's likelihood of getting a severance agreement.

The CEO's job uncertainty is influenced by both the uncertainty in the firm's internal environment and the conditions in the external market. If the internal operating environment has become more uncertain, it will be harder for the CEO to manage the firm and be successful. The put option feature of a severance payout encourages the manager to take on risky positive NPV

projects, which may enhance firm performance and reduce the potential costs imposed on the firm by risk-averse managers. On the other hand, the external CEO labor market conditions may also affect the firm's likelihood of start adopting an ex-ante severance contract. Almazan and Suarez (2003) suggest that in the absence of an ex-ante severance agreement, a higher supply of rival CEOs, especially talented ones, decreases the incumbent CEO's incentives to invest in the firm because of the increased probability of dismissal. They show that severance agreements improve the incentives to the incumbent CEOs and commit the board to keeping the CEO by increasing the cost of firing the CEO. Based on their arguments, one would expect more firms offer CEO severance contracts when the CEO labor market becomes more competitive. The firm's industry environment would also affect the CEO's job uncertainty and in turn, the adoption of severance agreements. For example, the CEO's job uncertainty increases if her industry experiences a downturn or becomes too competitive that fewer CEOs can survive.

Our second hypothesis, benchmarking, are motivated by the findings in the literature that firms often benchmark their compensation practices or firm policies with peer companies (e.g., Bizjak, Lemmon and Whitby, 2009; Faulkender and Yang, 2010; and Davis, 1991). If firms follow other firms to design their executive compensation, then one firm's adoption of the severance contract may spread out to several other firms. CEOs in the same geographic area have a higher chance to know each other and share the same social connections. The differences in compensation designs could be more noticeable among CEOs in the same area either because they can share information privately or they may be more curious to figure out how their "neighbors" are compensated. From the firm's perspective, to retain talent, they also have incentives to match their CEO's compensation design to other comparable firms in the same area.

The practices of an industry's market leader often attract more attention than those of other firms in the industry. One key role of the board of directors is to design compensation packages that can provide appropriate incentives to the CEO. When evaluating the effectiveness of compensation designs, the board might find those that adopted by the market leaders to be more attractive. In addition, it is easier for the board to justify the changes in CEO compensations to investors when the intended changes are adopted by the leader in the industry. As a result of this upward benchmarking, we expect more initial adoptions of severance contracts in industries where the market leader has adopted one.

In sum, we hypothesize that the spread of severance agreements to be systematically correlated with the following three groups of factors: 1) Job uncertainty caused by the firm's internal environment; 2) Job uncertainty caused by the external industry/market environment; and 3) Benchmarking to firms in the same geographic area and/or to the market leader in the industry. We expect a higher propensity of the firm to start adopting severance contracts when the CEO's job uncertainty is high, when the industry market leader has adopted the ex-ante contract, and when there are more firms in the same geographic area adopting the contracts.

3. Sample and Explanatory Variables

3.1. Sample construction

The analysis in this paper requires hand-collection of information related to the existence and contracting details of CEO severance agreements. To obtain a sample for further collection, we start with firms in the S&P 500 as of June 30, 2008 and with coverage on CRSP, Compustat, RiskMetrics and Execucomp. We then identify all CEOs that have worked for these firms during 1993 to 2007.

For each CEO, we check the 10-K, 10-Q, 8-K, and proxy statements to determine whether any agreements exist between the CEO and her firm for each year between 1993 and 2007. We locate the severance contracts by searching for the terms "employment agreement", "severance contract", "severance agreement", "separation agreement", "termination of employment", "severance", "separation", "contract", "agreement", "executive agreement", "employee agreement", and "termination arrangement". If we identify the existence of such agreements, we then collect information on the terms of each agreement such as: one-time cash amount, multiples of salary and bonus, vesting schedule of restricted shares and options, etc. In total, out of 5,142 firm-year observations (1,015 CEOs), we find 2,041 observations (407 CEOs) with severance contracts. Because our focus is on the spread of severance agreements, thus the initial adoption of an ex-ante agreement, we further check whether the contract was adopted the first time in the firm. Out of 2,041severance contracts, we find 163 initial adoptions.

3.2. Measures of job uncertainty

3.2.1. Job Uncertainty in the firm's internal environment

We use three proxies to measure the CEO's job uncertainty in the firm's internal environment. Our first variable is a dummy that equals one if the prior CEO of the firm was forced out. We follow Parrino (1997) to determine if the turnover is forced. CEOs bear significant personal costs in the case of forced turnover (Fee and Hadlock, 2004). When the prior CEO was forced out, job uncertainty may be viewed as increased for the next CEO for several reasons. First, the prior CEO's being forced out may suggest a greater difficulty in managing the firm. Second, the firm may have a tough monitoring system, which increases the likelihood of forcing out the next CEO. Third, the firm might be undergoing significant changes

in strategies, which also increase the uncertainty of the firm's needs and thus, the uncertainty of the CEO's job.

The second variable to measure CEO job uncertainty is O-score, which measures the expected probability of firm bankruptcy. Studies find CEOs suffer a pay cut or even job loss when their firms experience financial distress (Gilson, 1989 and 1990; Gilson and Vetsuyepens, 1993). To compensation for these potential losses, CEOs may demand an ex-ante severance contact as insurance toward firm bankruptcy. On the other hand, firms with higher bankruptcy risk may need to offer severance contracts to attract talented but risk-averse CEOs. We calculate a firm's O-score as in Ohlson's (1980) and the details are given in Table 1.

In addition to the above two variables, we use the firm's stock volatility to capture the overall riskiness of the firm. We measure stock volatility as the standard deviation of daily returns in the five years prior to the year of initial adoption. We require a firm to have at least one year of returns for each estimation period.

3.2.2. Job uncertainty in the firm's external environment

For the external labor market, we use three variables to measure job uncertainty in the firm's industry and one variable to capture job uncertainty in the overall market. The three industry-level variables include: 1) Industry fatality rate; 2) Industry homogeneity; 3) # CEOs in the same industry. CEOs' job uncertainty and external opportunities are largely determined by the industry they work in.

CEOs face a greater job uncertainty during an industry downturn and thus would be more likely to demand an ex-ante severance agreement to protect them in case of firm failure. Following Opler and Titman (1994), we define an industry year as in industry downturn if the

median sales growth is negative and the median stock return of the firms in the industry is -30% or lower. We expect this variable to relate positively to the propensity to adopt an ex-ante severance contract.

The other two industry variables, industry homogeneity and #CEO in the industry, focus on the CEO and the firm's outside opportunities. The influence of these two variables on the adoption of severance contracts is two folded. On one hand, the incumbent CEO is more replaceable in a homogenous industry due to a higher supply of CEOs with similar skills to run the firm (Parrino, 1997). Similarly, firms also have more outside CEO options when there are more CEOs in the industry. These arguments would suggest a higher job uncertainty for CEOs in homogeneous industries or industries with more firms. On the other hand, CEOs also have more outside options in a homogeneous industry or industries with more firms, which would suggest a lower job uncertainty for CEOs in these industries. Because these two variables may influence both the demand and the supply side of the CEO labor market, the actual relation between these variables and the firm's propensity to adopt ex-ante severance contracts is an empirical question. We follow Parrino (1997) to calculate industry homogeneity for each firm year based on the monthly returns in the prior five years. Homogenous industries have higher values for the industry homogeneity proxy.

We use the yearly CEO turnover rate of the S&P500 CEOs to measure the overall job uncertainty in the CEO's labor market. The CEO's job could have become more uncertain due to factors that are not related to the firm's operations. For example, the bubble burst and accounting scandals at the beginning of 2000s, and the lavish CEO compensation packages have triggered waves of public security on the top management team and the CEO in particular. These public attentions may have drawn an increase in the intensity of monitoring CEOs, which

could lead to an increase in CEO turnovers. We expect the firm's propensity to adopt severance contracts to relate positively to this overall CEO turnover rate in the market.

3.3. Measures of benchmarking

We construct two measures to examine if a firm follows other firms when they decide on whether to start adopting ex-ante severance contracts. The first variable is a count variable that equals the number of firms with ex-ante severance contracts in the same MSA area. We use a firm's headquarter location to determine the firm's MSA area. The second variable is a dummy variable that equals one if the firm's industry market leader has adopted the ex-ante severance contracts. We define the industry market leader as the firm that has the largest market share in a two-digit SIC code defined industry. A firm's market share is calculated as the firm's sales divided by the total industry sales in that year. We expect these two variables to relate positively to the firm's propensity to start adopting ex-ante severance contracts.

4. Empirical Analysis

In this section, we first discuss the empirical method for our analysis. We then examine whether proxies for job uncertainty or benchmarking are systematically associated with the initial adoption of ex-ante severance contracts in the firm. We next study what factors affect the firm's decision to grant a cash-only vs. a severance contract with equity elements. We also discuss several robustness checks on our results.

4.1. Empirical Model

We use multi-period logit regressions to identify the factors that contribute to the *spread* of severance contracts. This is the same approach that Bizjak et al. (2009) use to study the determinants of the spread of option backdating. In our model, the dependent variable equals 1

for firm-year in which the firm grants a severance contract to its CEO the first time. We drop firm-year observations subsequent to the initial adoption of severance contracts. The dependent variable is zero 1) for all firm-year observations that have never adopted severance contracts, and 2) for firm-year observations prior to the year of the initial adoption. Out of the 373 firms in our sample, 163 firms started adopting severance contracts during our sample period. Our dependent variable equals 1 for these 163 firm-year observations and 0 for the other 2,798 firm-year observations. Out of the 2,798 firm-year observations, 1,689 firm-year observations (210 firms) have never adopted a severance contract, while the other 1,109 (163 firms) are firm-year observations preceding their respective initial adoption year. The model we use to study the spread of severance contracts is as follows:

$$Prob(\text{Initial Adoption of Severance Contracts}=1)_t = Logit(\text{proxies for internal job uncertainty}_{t-1}, \text{proxies for external job uncertainty}_{t-1}, \text{proxies for benchmarking}_{t-1}, \text{control variables}_{t-1}) \quad (1)$$

As specified in Section 3, proxies for internal job uncertainty include 1) an indicator variable that equals one if the firm's previous CEO was forced out, 2) the standard deviation of the firm's stock daily returns in the prior five years, and 3) the O-score to capture the likelihood of bankruptcy. Proxies for external job uncertainty include: 1) a dummy variable to indicate industry downturn; 2) industry homogeneity; 3) the number of CEOs in the same industry; and 4) overall CEO turnover rate in the market. One proxy for benchmarking include 1) the number of S&P 500 firms in the same geographic area that has offered a severance contract to its CEO, and 2) an indicator variable that equals one if the market leader of the firm's industry has adopted ex-ante CEO severance contract. We present results based on the multi-period logit estimation of equation (1) in Tables III to VI.

Following the literature, we also include log(sales), leverage, % of independent directors, % of CEO ownership, total compensation and fiscal year annual return as additional control variables. All our interest variables and control variables are one-year lagged values, which better capture firm conditions leading to the initial adoption of the ex-ante severance contracts. Since our sample span over 15 years, we include year-fixed effects to control for macro economic conditions that may have impact on the firm's decision to grant severance contracts to CEOs. All our proxies for external job uncertainty are industry level variables and some variables, for example, industry homogeneity, do not vary much over the sample period. Thus, we don't include industry-fixed effects in our main regressions. As a robustness check, we repeat all our tests with industry-fixed effects and obtain similar results as shown in Table V and VI.

4.2. Summary statistics and Univariate Comparison

Table II provides descriptive statistics on firm and CEO characteristics for the 2,961 firm-year observations in our sample. In addition to the summary statistics for the whole sample, we also present in the table the mean and standard deviation for firm years without initial adoption (2,798) and the firm years with initial adoption (163). In our sample, about 5.3% firms have forced out their prior CEOs. The percentage is 4.7% for the group without initial adoption and 17.2% for the group with initial adoption. The difference is statistically significant. As expected, firm stock volatility in the year prior to an initial adoption of severance contracts is higher than firm years without initial adoption. O-score for firm years with initial adoption (-1.436) is significantly higher than that (-2.137) for firm years without initial adoption. These results suggest that firms start adopting severance agreements when the internal environment is more uncertain for the CEO. For external environment, on average, about 2.1% of firm years in our

sample are in an industry downturn. The difference, however, is not statistically significant. Industry homogeneity is lower in firm years with initial agreement and higher in other firm years. The overall CEO turnover rate is significantly higher in firm years with initial adoption. # of CEOs in the same industry is smaller in firm years with initial adoption, suggesting fewer outside options for both the firm and the CEO.

Table II also shows that the percentage of CEOs with severance agreements in the same MSA area is much higher for firm years with initial adoption (34%) than for firm years without initial adoption (41%). We observe a difference in the percentage of market leaders with severance contracts between firm years without initial adoptions and firm years with initial adoptions. In the initial adopting group, about 13% of the firms' industry market leaders have adopted the ex-ante severance contracts. In comparison, less than 2% of the firms' industry market leaders have ex-ante severance contracts among the firm years without initial adoptions. These differences support our hypotheses that firms have a higher chance to start adopting severance contracts if there are more CEOs with severance contracts in their MSA area or if their market leader has already adopted the contract. We also present summary statistics on our control variables in Table II. Table I provide variable definitions for all variables.

4.3. Job uncertainty and the spread of severance agreements

Table III presents the results from our multi-period logit analysis of the relation between job uncertainty and the propensity of the firm to start adopting severance contracts. The table reports coefficient estimates and marginal effects (reported in square brackets). The marginal effects are defined as the implied change in the estimated probability of a firm's initial adoption of severance contracts corresponding to 1) a one standard deviation change in a continuous variable

with all other variables held at the sample means, and 2) a change from 0 to 1 for the dichotomous independent variables. In all of the regressions, the *p*-values (reported in parentheses), are based on robust standard errors clustered by firm.

Model 1 provides the regression results for internal job uncertainty. We find positive coefficients on all three proxies for internal job market uncertainty. The coefficients are statistically significant at the 1% level for the previous CEO being forced out dummy and firm stock volatility. The p-value of the coefficient on O-score is 0.16. Based on the coefficient estimate in Model 1, the marginal effect indicates that having previous CEO being forced out, a standard deviation increase in firm stock volatility, and a standard deviation increase in O-score, increase the likelihood of a firm to start offering their executives severance contracts by 5.9%, 9.5% and 0.2%, respectively. These results support our hypothesis that firms are more likely to engage in an ex-ante severance contracts when the perceived job uncertainty is higher. Model 2 presents the regression results on proxies for external job uncertainty. The coefficient on the overall CEO turnover rate among the S&P 500 firms is positive and statistically significant at the 5% level, and the marginal effect is large. This result suggests that the increase in CEO turnover has contributed to the spread of ex-ante severance contracts. Higher CEO turnover rates are likely to lower the expected tenure of the incumbent CEOs. As an outcome of a shorter tenure, CEOs suffer income loss and the risk of not finding a comparable job after the turnover. For example, Fee and Hadlock (2004) find that few terminated CEOs can find comparable jobs. Because of the potential risks associated with job loss, CEOs may be more concerned about risky policies that may increase the firm's chance of failure. Severance contracts help to mitigate these downside risks for CEOs and provide insurance to CEOs ex-ante to mitigate possible sub-optimal risk raking. We do not find any of the three industry environment proxies have a

significant coefficient, though the coefficient on #of CEOs in the same industry is close to significance with a p-value of 0.17. Gillan et al. (2009) find that measures of industry uncertainties, such as industry homogeneity, significantly affect the likelihood of the firm to use an explicit employment agreement with their CEOs. Their study focuses on whether the firm has or does not have an explicit employment agreement with a cross-sectional data of 2000. They do not examine the initial adoption of explicit employment agreements. Our findings complement their findings and suggest that industry conditions do not seem to relate to the recent spread of ex-ante CEO severance contracts.

Next, we include both sets of job uncertainty variables in the same regression. Model 3 of Table III presents the results. As in Model 1, the coefficients on the previous CEO being forced out dummy and firm stock volatility remain positive and statistically significant at the 1% level. The third internal environment proxy, O-score, now becomes significant at the 10% level. This finding supports our hypothesis that firms with higher bankruptcy probability are more likely to start offering their CEOs severance contracts. For external environment proxies, the CEO turnover rate relates significantly positively to the propensity of initiating ex-ante CEO severance contracts. The coefficient on # of CEOs in the same industry is negative and statistically significant at the 10% level. This result suggests that firms are less likely to offer their CEOs ex-ante severance contracts when there are more outside CEO options. This is also consistent with the view that CEOs with more outside opportunities are less likely to demand severance contracts as insurance. We posit that the negative coefficient on # CEOs in the same industry maybe driven by both the supply and the demand sides of the severance contracts.

4.4. Benchmarking and the spread of severance agreements

In Table IV, we present results from our multi-period logit analysis of the relation between the proxies for benchmarking and the propensity of the firm to start adopting ex-ante severance contracts. In Model 1, we include results for geographic benchmarking. In Model 2, we show results for market leader benchmarking. Then we present results based on including both benchmark variables in Model 3.

The coefficient on % of other CEOs with severance agreement in the same geographic area is positive and statistically significant in both Model 1 and 3. This supports our hypothesis that firms are more likely to adopt severance agreements when there are more other firms in the same MSA area adopting the contracts, suggesting firms benchmark their compensation practice to their "neighbors". The coefficient on the dummy that indicates the market leader has adopted the ex-ante severance contract is also positive and statistically significant at the 1% level in both Model 2 and 3. This finding supports our view that firms are likely to follow their market leader in designing their compensation policies.

In the last model of Table IV, we include all variables for job uncertainty and both variables for benchmarking. We again obtain similar results as those in Table III and Table IV. Both benchmarking variables have positive and statistically significant coefficients. All three proxies for internal job uncertainty have positive and statistically significant coefficients. Among the proxies for external job uncertainty, we only find the coefficient of the overall CEO turnover rate to be positive and statistically significant. The number of CEOs in the same industry has a negative coefficient ad the *p*-value is close to significance at 0.14. The findings in the last column of Table IV suggest that *both* job uncertainty and benchmarking contribute to the spread

of ex-ante CEO severance contracts. The uncertainty in the firm's internal environment seems to affect the decision to offer severance contracts more than external industry environment.

4.5. Robustness checks

We next examine if our results are driven by omitted variable bias, such as unobservable industry effects and corporate governance. Certain industries may have more volatile operating environment and at the same time, these industries may happen to adopt more severance contracts for reasons not related to operating uncertainty or maybe firms in these industries are clustered in certain geographic areas. If this argument is true, then some of the relations we find in previous sections maybe spurious. To examine the industry effect, we first check if some industries are more likely to adopt ex-ante severance contracts than others. In untabulated results, we find that the 163 initial adoptions are reasonably evenly distributed into the 12 Fama-French industries. To mitigate unobservable industry effects, we repeat our regressions in Table III and Table IV with industry-fixed effects. As shown in Table V and Table VI, we obtain similar coefficients and statistical significance as those in Tables III and IV.

One alternative explanation of the spread of ex-ante severance contracts is that it is an outcome of governance failure and a way for entrenched CEOs to extract rents. Our findings do not support this argument. For example, we find that CEOs with higher ownership are less likely to have ex-ante severance contracts. We find no relation between the percentage of inside directors and the propensity to start offering ex-ante CEO severance agreements. In untabulated results, we include in our regression a battery of internal and external governance variables, for example, an indicator variable that equals one if the board is classified, CEO/Chairman duality, # of board meeting, board size, g-index, CEO tenure, and institutional ownership. None of these governance variables has a statistically significant relation with the propensity to start offering

CEO ex-ante severance agreements. Though we cannot completely rule out the influence of corporate governance, we find no evidence that the board is more likely to start adopting severance agreements when the CEO is more powerful or when the firm's corporate governance is weak.

Another potential explanation of the spread of severance contracts is that it is a mechanic outcome of the changes in reporting requirements. This argument implies that there is no material increase in the number of firms that start adopting severance contracts. What we observe in the data simply reflects that more firms start reporting these contracts in their filings. We argue that this explanation cannot explain the continued growing in the number of severance contracts years after 1990, the starting year of SEC mandatory disclosure. The disclosure requirement may have facilitated the benchmarking process by increasing the transparency on compensation designs of peer firms and thus, expedites the spread of severance contracts.

4.6. The spread of cash vs. equity based severance agreements

In our sample, 60% of initial severance contracts include an equity component in their CEO severance contracts and the remaining 40% initiate severance agreements with only cash payout. In this section, we examine the firm's decision to grant a cash-only severance agreement or an agreement with equity components. Table VII present results from our analysis on why firms offer a severance contract with equity components. The dependent variable in these regressions is a dummy variable that equals one if the initial severance contract has equity component, and zero for cash-only contracts. We use the logit model to estimate the likelihood of including an equity component in the initial contract. We restrict this analysis in the sample of 163 firm years with initial adoptions.

Severance agreements with only cash elements provide separation pays that are insulated from risks associated with the firm's future stock performance, which further reduces the downside risk for their CEOs. In addition, when the firm's survival is in question, the expected payout from the equity component in the severance contracts would be low. Thus, severance contracts with equity-based components provide less insurance as a cash only severance agreement. Based on these arguments, we expect firms with higher bankruptcy risk or in an industry downturn to be more likely to grant cash-only severance agreements. Our empirical findings support this hypothesis. As shown in Table VII, the coefficient on O-score is negative and statistically significant at the 10% level. The coefficient on the industry downturn dummy is also negative and statistically significant at the 10% level in Model 2.

The CEO's existing income portfolio also limits the amount of equity-based payment the firm can offer to its CEO. CEOs with high stock ownership in their firms would be reluctant to accept more equity-based pay to further increase the firm-specific risk of their portfolios. On the other hand, firms may want to limit the equity ownership of their executives and are less likely to offer more equity ownership for CEOs with a higher equity ownership already. Consistent with our expectation, we find that the coefficient on CEO ownership is negative and statistically significant at the 5% level in all three models of Table VII.

Firms' benchmarking on compensation practices may also affect the firm's decision to offer which type of severance agreement. For example, if the industry's leading firm grants severance agreement with equity components, other firms in the same industry may assume that the leader's type of contract is more appropriate for the industry and follows the leader's practice. To test this hypothesis, we create a dummy variable that equals one if the industry's market

leader has adopted a severance contract with equity components. As shown in the Model 3 of Table VII, we find a positive and statistically significant coefficient (*p*-value =0.00) on this dummy variable. This finding supports the notion that a firm is much more likely to include an equity component in its ex-ante severance agreements if the industry's market leader has included equity components in its CEO severance agreement.

In sum, results in Table VII suggest that the firm's financial conditions, the industry's overall performance, and CEO ownership affect the firm's choice between a cash-only severance contracts or a contract with equity components. We also find evidence that firms not only follow their industry leader to adopt the ex-ante severance contracts, but also follow their leader in designing the features of such contracts.

5. Conclusion

Severance pays for corporate workers and managers were originated in the 19th century. It is in the recent 15 years, however, that more firms start adopting ex-ante explicit severance agreements for CEOs. Regardless of the controversial discussions on executive severance contracts in the media and academic studies in recent decade, we continue to observe significant increases in the initial adoptions of ex-ante CEO severance agreements among the S&P 500 firms. Our paper focuses on this recent *spread* of ex-ante CEO severance agreement and provides evidence on the factors that have contributed to this spread.

We find that firms are more likely to start adopting ex-ante CEO severance agreement when the previous CEO was forced out, firm stock volatility is high, the firm's expected bankruptcy risk is high, and the CEO turnover rate among the S&P 500 firms is high. Firms are also more

likely to initiate ex-ante severance contracts when there are more firms adopting the ex-ante contracts in the same geographic area or when the firm's industry leader has adopted the ex-ante agreements. When deciding on whether to offer the CEO a cash-only contract or a contract with equity components, firms consider the CEO's existing equity ownership, their bankruptcy risk, the overall industry condition and whether their industry leaders have included equity components.

Overall, our results suggest that the recent spread of ex-ante CEO severance agreement is an optimal response to the CEO's job uncertainty and an outcome of the firms' benchmarking practices. Our findings have implications for practitioners and researchers. For firms that are considering offering ex-ante severance contracts, our paper suggests several factors that the board of directors may want to consider. Our evidence also raises several interesting questions for future research. Yermack (2006) find that ex-post severance payments impose significant costs on the firm. It would be interesting to see if the adoption of ex-ante severance contract reduces the ex-post costs for the firms? Additionally, uncertainty in the firm's operating environment may also expose other employees of the firm to job risk. Do we observe a similar spread of severance contracts to other executives or lower-level employees?

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Figure 1

CEOs with Severance Agreements & CEO Turnover Rate

The figure shows the percentage of S&P500 CEOs with ex-ante severance agreements and the CEO turnover rate between 1993 and 2007. The numbers on the left y-axis represent the percentage of CEOs with agreements in each year; while the numbers on the right y-axis represent the percentage of CEOs turnover in each year. On average, around 40% of new CEOs have severance contracts during the time period between 1993 and 2007.

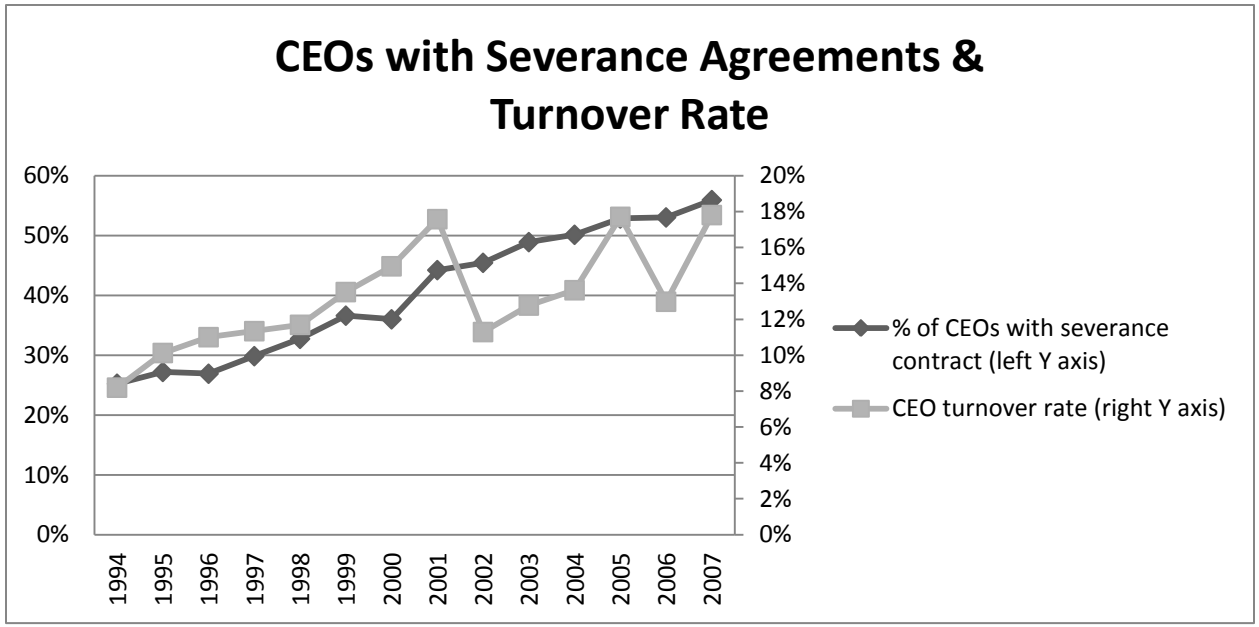

Table I: Variable Definitions

Variable	Definition
% of CEO ownership	% of outstanding shares a CEO owns
% of independent directors	Percentage of independent directors on the board
% of other CEOs with agreement (same geographic area)	The percentage of other CEOs in the same MSA area with an up-front severance agreement at the time when the CEO takes office
# of CEOs in the same industry	Number of CEOs in the same two digits SIC industry
Cash Severance	The sum of one time cash severance amount, salary and bonus severance payment (in million)
Fiscal Year Annual Return	Fiscal Year Annual Return
Industry Downturn (=1)	=1 if the industry median sales growth is negative and the median annual stock return is <=-0.3; Opler and Titman (1994)
Industry Homogeneity	To calculate the industry homogeneity index, we first use CRSP monthly returns to create an equally weighted monthly return index for every 2-digit SIC industry. We then regress the monthly returns in the prior five years of each year for each firm in the index on the equal-weighted market index and industry index. Then, we take the partial correlation coefficient for the industry return index and average it across all firms in the industry to obtain the five-year rolling industry homogeneity proxy. We require a minimum of 20 firms in a 2-digit SIC code.
Leverage	Long term and short term debt to market value of equity
Log(Sales)	Log of sales
Market leader with severance (=1)	=1 if the market leader in the same industry (based on two digit SIC code) has a severance contract with the CEO and 0 otherwise
O-score	= -1.32 - 0.407*Ln(Total Assets) + 6.03*Total Liabilities/Total Assets - 1.43*Working Capital/Total Assets +0.0757*Current Liabilities/Current Assets -2.37*NetIncome/TotalAssets - 1.83*(PretaxIncome+Deprecisation)/Total Liabilities + 0.285*(=1 if Net Income<0; 0 otherwise) - 1.72*(=1 if negative book equity; 0 otherwise) - 0.521*(Change in Net Income)
Past 5 yr stock volatility	Standard deviation of daily stock return for the five years prior
Previous CEO being forced out	Has an indicator of 1 if the previous CEO was forced out and 0 otherwise
Severance agreement (0/1)	Has an indicator of 1 if the CEO has a severance agreement with the firm and 0 otherwise
Severance agreement with cash only (0/1)	Has an indicator of 1 if the severance agreement the CEO has with the firm has only cash component and 0 otherwise
Severance agreement with equity (0/1)	Has an indicator of 1 if the severance agreement the CEO has with the firm includes an equity component and 0 otherwise
Total compensation (Mill)	Executives' total compensation (TDC1)

Table II: Descriptive Statistics

Summary statistics for job uncertainty, benchmarking, and firm characteristics for a sample of S&P500 firms between the years 1993 and 2007. The variables are defined in Table I. *, **, *** indicate significance at the 0.1, 0.05 and 0.01 levels respectively.

	Total Sample (N=2961)		W/O an Agreement (N=2798)		With an Intial Agreement (N=163)		
	Mean	Std	Mean	Std	Mean	Std	
Job uncertainty: Internal environment							
Previous CEO being forced out (=1)	0.053	0.224	0.047	0.210	0.172	0.378	***
Firm stock volatility	0.314	0.139	0.311	0.137	0.369	0.156	***
O-score	-2.137	3.401	-2.178	3.135	-1.436	6.431	***
Job uncertainty: External environment							
Industry condition (=1)	0.021	0.142	0.020	0.141	0.025	0.156	
Industry homogeneity	0.160	0.094	0.160	0.094	0.166	0.100	***
CEO turnover rate	0.125	0.029	0.124	0.028	0.138	0.031	***
# of CEOs in the same industry	274	239	275	238	256	242	
Benchmarking							
% of other CEOs with agreement (same geographic area)	0.344	0.181	0.340	0.181	0.406	0.172	***
Market leader with severance (=1)	0.021	0.143	0.015	0.120	0.129	0.336	***
Control variables							
Log(Sales)	8.617	1.322	8.608	1.320	8.770	1.342	
Leverage	0.574	1.079	0.568	1.048	0.693	1.517	
% of independent directors	0.707	0.132	0.706	0.132	0.718	0.126	
% of CEO ownership	4.112	7.601	4.246	7.755	1.814	3.401	***
Total compensation (mill)	7.123	15.956	6.805	15.228	12.569	24.810	***
Fiscal Year Annual Return	0.200	0.467	0.203	0.470	0.146	0.412	*

Table III: Relationship between CEO Severance Agreements & Business Environment

The sample includes 2,961 firm-year observations for a sample of S&P 500 CEOs between the years 1993 and 2007. The dependent variable equals 1 for firm-year in which the firm grants a severance contract to its CEO the first time and 0 otherwise. After a firm is identified as a new severance agreement awarder, it is dropped from the sample in subsequent years. Year-fixed effect is included in the regressions. The variables are defined in Table I. Marginal effects are reported in square brackets. *p*-values, which are reported in parentheses, are based on robust standard errors clustered by firm. *, **, *** indicate significance at the 0.1, 0.05 and 0.01 levels.

		Model 1	Model 2	Model 3
Job uncertainty: Internal environment	Previous CEO being forced out (=1)	1.223 ***		1.282 ***
		[0.059]		*[0.06]*
		(0.00)		(0.00)
	Firm stock volatility	1.959 ***		2.433 ***
		[0.095]		*[0.114]*
		(0.00)		(0.00)
	O-score	0.037		0.038 *
		[0.002]		*[0.002]*
		(0.16)		(0.10)
Job uncertainty: External environment	Industry condition (=1)		-0.413	-0.828
			[-0.02]	*[-0.039]*
			(0.54)	(0.26)
	Industry homogeneity		-0.875	-0.345
			[-0.043]	*[-0.016]*
			(0.41)	(0.75)
	# of CEOs in the same industry		-0.001	-0.001 *
			[0]	*[0]*
			(0.17)	(0.06)
	CEO turnover rate		28.502 **	24.962 *
			[1.388]	*[1.17]*
			(0.04)	(0.09)
Control variables	Log(Sales)	-0.027	-0.126	-0.056
		[-0.001]	*[-0.006]*	*[-0.003]*
		(0.72)	(0.11)	(0.54)
	Leverage	0.031	0.078	0.021
		[0.002]	*[0.004]*	*[0.001]*
		(0.57)	(0.19)	(0.70)
	% of independent directors	-0.108	0.001	0.146
		[-0.005]	*[0]*	*[0.007]*
		(0.87)	(1.00)	(0.84)
	% of CEO ownership	-0.128 ***	-0.135 ***	-0.131 ***
		[-0.006]	*[-0.007]*	*[-0.006]*
		(0.00)	(0.01)	(0.01)
	Total compensation (mill)	0.011 ***	0.014 ***	0.013 ***
		[0.001]	*[0.001]*	*[0.001]*
		(0.00)	(0.00)	(0.00)
	Fiscal Year Annual Return	-0.098	-0.004	-0.079
		[-0.005]	*[0]*	*[-0.004]*
		(0.59)	(0.98)	(0.60)
	Constant	-2.485 ***	-5.779 **	-6.767 ***
		(0.01)	(0.03)	(0.01)
	Number of total observation	2961	2961	2961
	Adjusted R2	14.18%	10.69%	15.03%

Table IV: Relationship between CEO Severance Agreements & Peer Group

The sample includes 2,961 firm-year observations for a sample of S&P 500 CEOs between the years 1993 and 2007. The dependent variable equals 1 for firm-year in which the firm grants a severance contract to its CEO the first time and 0 otherwise. After a firm is identified as a new severance agreement awarder, it is dropped from the sample in subsequent years. Year-fixed effect is included in the regressions. The variables are defined in Table I. Marginal effects are reported in square brackets. *p*-values, which are reported in parentheses, are based on robust standard errors clustered by firm. *, **, *** indicate significance at the 0.1, 0.05 and 0.01 levels.

		Model 1		Model 2		Model 3		Model 4	
Job uncertainty: Internal environment	Previous CEO being forced out (=1)							1.382	***
								[0.062]	
								(0.00)	
	Firm stock volatility							1.722	***
								[0.078]	
								(0.01)	
	O-score							0.038	*
								[0.002]	
								(0.06)	
Job uncertainty: External environment	Industry condition (=1)							-0.683	
								[-0.031]	
								(0.37)	
	Industry homogeneity							0.176	
								[0.008]	
								(0.87)	
	# of CEOs in the same industry							-0.001	
								[0]	
								(0.14)	
	CEO turnover rate							27.585	*
								[1.242]	
								(0.06)	
Benchmarking	% of other CEOs with agreement (same geographic area)	2.409	***			2.217	***	2.577	***
		[0.119]				*[0.105]*		*[0.018]*	
		(0.00)				*(0.00)*		*(0.00)*	
	Market leader with severance (=1)			2.674	***	2.587	***	2.117	***
				[0.128]		*[0.122]*		*[0.003]*	
				(0.00)		(0.00)		(0.00)	
Control variables	Log(Sales)	-0.067		-0.114		-0.080		-0.026	
		[-0.003]		*[-0.005]*		*[-0.004]*		*[-0.001]*	
		(0.33)		(0.11)		(0.26)		(0.77)	
	Leverage	0.081		0.092	*	0.098	*	0.046	
		[0.004]		*[0.004]*		*[0.005]*		*[0.002]*	
		(0.13)		(0.07)		(0.06)		(0.40)	
	% of independent directors	-0.138		-0.221		-0.128		0.136	
		[-0.007]		*[-0.011]*		*[-0.006]*		*[0.006]*	
		(0.83)		(0.73)		(0.85)		(0.86)	
	% of CEO ownership	-0.138	***	-0.131	***	-0.126	***	-0.118	**
		[-0.007]		*[-0.006]*		*[-0.006]*		*[-0.005]*	
		(0.00)		(0.00)		(0.00)		(0.02)	
	Total compensation (mill)	0.012	***	0.013	***	0.012	***	0.011	***
		[0.001]		*[0.001]*		*[0.001]*		*[0]*	
		(0.00)		(0.00)		(0.00)		(0.00)	
	Fiscal Year Annual Return	-0.064		-0.026		-0.031		0.010	
		[-0.003]		*[-0.001]*		*[-0.001]*		*[0]*	
		(0.74)		(0.90)		(0.88)		(0.95)	
	Constant	-2.215	***	-1.025		-2.168	**	-8.299	***
		(0.01)		(0.24)		(0.02)		(0.00)	
	Number of total observation	2961		2961		2961		2961	
	Adjusted R2	12.75%		15.53%		17.29%		19.71%	

Table V: Relationship between CEO Severance Agreements & Business Environment

The sample includes 2,961 firm-year observations for a sample of S&P 500 CEOs between the years 1993 and 2007. The dependent variable equals 1 for firm-year in which the firm grants a severance contract to its CEO the first time and 0 otherwise. After a firm is identified as a new severance agreement awarder, it is dropped from the sample in subsequent years. Year-fixed and industry-fixed effects are included in the regressions. The variables are defined in Table I. Marginal effects are reported in square brackets. *p*-values, which are reported in parentheses, are based on robust standard errors clustered by firm. *, **, *** indicate significance at the 0.1, 0.05 and 0.01 levels.

		Model 1		Model 2		Model 3	
Job uncertainty: Internal environment	Previous CEO being forced out (=1)	1.443	***			1.427	***
		[0.069]				*[0.066]*	
		(0.00)				(0.00)	
	Firm stock volatility	2.078	***			2.163	***
		[0.099]				*[0.1]*	
		(0.00)				(0.01)	
	O-score	0.041				0.046	
		[0.002]				*[0.002]*	
		(0.15)				(0.11)	
Job uncertainty: External environment	Industry condition (=1)			-0.678		-0.874	
				[-0.033]		*[-0.041]*	
				(0.35)		(0.25)	
	Industry homogeneity			0.081		-0.912	
				[0.004]		*[-0.042]*	
				(0.96)		(0.59)	
	# of CEOs in the same industry			-0.001	**	-0.001	*
				[0]		*[0]*	
				(0.05)		(0.07)	
	CEO turnover rate			29.195	**	26.355	*
				[1.409]		*[1.223]*	
				(0.04)		(0.07)	
Control variables	Log(Sales)	-0.007		-0.089		-0.002	
		[0]		*[-0.004]*		*[0]*	
		(0.93)		(0.28)		(0.98)	
	Leverage	0.056		0.117	*	0.058	
		[0.003]		*[0.006]*		*[0.003]*	
		(0.38)		(0.08)		(0.42)	
	% of independent directors	0.237		0.395		0.437	
		[0.011]		*[0.019]*		*[0.02]*	
		(0.73)		(0.57)		(0.57)	
	% of CEO ownership	-0.139	***	-0.131	***	-0.131	**
		[-0.007]		*[-0.006]*		*[-0.006]*	
		(0.00)		(0.01)		(0.02)	
	Total compensation (mill)	0.012	***	0.013	***	0.012	***
		[0.001]		*[0.001]*		*[0.001]*	
		(0.00)		(0.00)		(0.00)	
	Fiscal Year Annual Return	-0.101		-0.048		-0.072	
		[-0.005]		*[-0.002]*		*[-0.003]*	
		(0.58)		(0.77)		(0.63)	
	Constant	-2.904	***	-6.611	***	-7.315	***
		(0.01)		(0.01)		(0.01)	
	Number of total observation	2961		2961		2961	
	Adjusted R2	15.93%		12.36%		16.59%	

Table VI: Relationship between CEO Severance Agreements & Peer Group

The sample includes 2,961 firm-year observations for a sample of S&P 500 CEOs between the years 1993 and 2007. The dependent variable equals 1 for firm-year in which the firm grants a severance contract to its CEO the first time and 0 otherwise. After a firm is identified as a new severance agreement awarder, it is dropped from the sample in subsequent years. Year-fixed and industry-fixed effects are included in the regressions. The variables are defined in Table I. Marginal effects are reported in square brackets. *p*-values, which are reported in parentheses, are based on robust standard errors clustered by firm. *, **, *** indicate significance at the 0.1, 0.05 and 0.01 levels.

		Model 1		Model 2		Model 3		Model 4	
Job uncertainty: Internal environment	Previous CEO being forced out (=1)							1.561	***
								[0.07]	
								(0.00)	
	Firm stock volatility							1.636	**
								[0.073]	
								(0.03)	
	O-score							0.039	*
								[0.002]	
								(0.07)	
Job uncertainty: External environment	Industry condition (=1)							-0.701	
								[-0.031]	
								(0.37)	
	Industry homogeneity							0.057	
								[0.003]	
								(0.97)	
	# of CEOs in the same industry							-0.001	
								[0]	
								(0.29)	
	CEO turnover rate							28.560	**
								[1.278]	
								(0.05)	
Benchmarking	% of other CEOs with agreement (same geographic area)	2.509	***			2.292	***	2.619	***
		[0.123]				*[0.108]*		*[0.018]*	
		(0.00)				(0.00)		(0.00)	
	Market leader with severance (=1)			2.508	***	2.411	***	1.961	***
				[0.119]		*[0.113]*		*[0.003]*	
				(0.00)		(0.00)		(0.00)	
Control variables	Log(Sales)	-0.054		-0.088		-0.068		0.020	
		[-0.003]		*[-0.004]*		*[-0.003]*		*[0.001]*	
		(0.46)		(0.25)		(0.36)		(0.83)	
	Leverage	0.096	*	0.120	**	0.104	*	0.048	
		[0.005]		*[0.006]*		*[0.005]*		*[0.002]*	
		(0.09)		(0.04)		(0.07)		(0.50)	
	% of independent directors	0.176		0.035		0.093		0.368	
		[0.009]		*[0.002]*		*[0.004]*		*[0.016]*	
		(0.79)		(0.96)		(0.89)		(0.64)	
	% of CEO ownership	-0.138	***	-0.131	***	-0.130	***	-0.122	**
		[-0.007]		*[-0.006]*		*[-0.006]*		*[-0.005]*	
		(0.00)		(0.00)		(0.00)		(0.03)	
	Total compensation (mill)	0.013	***	0.012	***	0.012	***	0.011	***
		[0.001]		*[0.001]*		*[0.001]*		*[0]*	
		(0.00)		(0.00)		(0.00)		(0.01)	
	Fiscal Year Annual Return	-0.107		-0.045		-0.050		0.002	
		[-0.005]		*[-0.002]*		*[-0.002]*		*[0]*	
		(0.58)		(0.82)		(0.80)		(0.99)	
	Constant	-2.720	***	-1.508	*	-2.512	***	-8.954	***
		(0.00)		(0.10)		(0.01)		(0.00)	
	Number of total observation	2961		2961		2961		2961	
	Adjusted R2	14.05%		16.11%		17.79%		20.61%	

Table VII: Relationship between CEO Cash-only and Equity Severance Agreements & Business Environment and Peer Group

The sample includes 2,961 firm-year observations for a sample of S&P 500 CEOs between the years 1993 and 2007. The dependent variable equals one if the initial severance contract has equity component, and zero for cash-only contracts. The variables are defined in Table I. Marginal effects are reported in square brackets. *p*-values, which are reported in parentheses, are based on robust standard errors clustered by firm. *, **, *** indicate significance at the 0.1, 0.05 and 0.01 levels.

	Model 1	Model 2	Model 3
Previous CEO being forced out (=1)	0.077	0.000	0.072
	[0.018]	*[0]*	*[0.015]*
	(0.87)	(1.00)	(0.88)
O-score	-0.040 *	-0.043 *	-0.037 *
	[-0.009]	*[-0.009]*	*[-0.008]*
	(0.10)	(0.08)	(0.09)
Industry condition (=1)		-1.844 *	-1.716
		[-0.41]	*[-0.366]*
		(0.09)	(0.11)
Market leader with equity severance (=1)			13.798 ***
			[2.945]
			(0.00)
% of CEO ownership	-0.099 **	-0.112 **	-0.097 **
	[-0.023]	*[-0.025]*	*[-0.021]*
	(0.04)	(0.02)	(0.04)
Industry adjusted three-year return		0.004	0.005
		[0.001]	*[0.001]*
		(0.52)	(0.44)
S&P index	0.000	0.000	0.000
	[0]	*[0]*	*[0]*
	(0.43)	(0.61)	(0.41)
Constant	0.203	0.399	0.100
	(0.67)	(0.43)	(0.85)
Number of total observation	163	163	163
Adjusted R2	5.54%	8.01%	15.22%