CEO Severance Agreements and Tax Avoidance

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Abstract

This study investigates the association between CEO severance agreements and corporate tax avoidance. Severance agreements, by providing executives with additional compensation when there is a change in employment status, should serve to encourage additional risk-taking, as reflected by increased tax avoidance activities. Using a large sample of aggregate compensation data, I find some evidence of a relation between the presence of a CEO severance agreement and tax avoidance. Using a smaller sample of hand-collected data, I find a significant negative relation between the magnitude of cash severance pay and tax avoidance and a significant positive relation between the magnitude of equity severance pay and tax avoidance. Overall, this study provides evidence that the structure and magnitude of severance agreements are related to tax avoidance.

Dedication

This dissertation is dedicated to Carole, Jonathan, and Elizabeth. To Carole, you are awesome! This would not have been possible without the numerous sacrifices you have made. Words cannot express what your unconditional love and unwavering support have meant the last 20 years. Thank you for reminding me to never settle and that perfectly good isn't always good enough. To Jonathan and Elizabeth, my motivation for embarking on this endeavor. Thank you for the hugs, knock-knock jokes, and general silliness – providing distraction and perspective throughout this process.

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1. INTRODUCTION

This paper investigates the relation between severance agreements and corporate tax avoidance[1]. Recent research has explored various aspects of the relation between executive compensation and corporate tax avoidance. Blaylock (2015) and Armstrong, Blouin, and Larcker (2012) examine the relation between total executive compensation and tax avoidance while Phillips (2003), Gaertner (2014), and Powers, Robinson, and Stromberg (2013) focus on the effect of using before-tax versus after-tax measures of executive performance. Additionally, Desai and Dharmapala (2006) and Rego and Wilson (2012) consider executive stock options and their relation to tax sheltering. Although they use varying approaches, all of these papers are concerned with the incentive effects of executive compensation on tax avoidance. These incentives allow an executive to directly increase his/her compensation through the use of effective tax planning. My research examines severance agreements, which do not vary based directly on firm performance but may still affect an executive's behavior. Specifically, I investigate how the existence, magnitude, and structure of Chief Executive Officer (CEO) severance agreements affect corporate tax avoidance.

Severance agreements provide executives with additional compensation when there is a change in employment status, such as a termination, demotion, or resignation (Gompers et al 2003). Although there are numerous ways to structure severance agreements, they are generally divided into two categories; standard and contingent (Rau and Xu, 2013). Standard severance agreements are generally paid when there is a change in employment status that is not the result of a specified event. Contingent severance agreements are only paid when a change in employment status is the result of a specific corporate event. For example, some severance

[1] Consistent with Hanlon and Heitzman (2011), I adopt a broad definition of tax avoidance as the reduction of explicit taxes as they relate to either accounting earnings or cash flows.

agreements are only triggered as a result of a change in control of the firm. The purpose of a contingent severance agreement is to affect executive behavior in a certain way, based on the condition specified. Since these additional conditions could encourage behavior correlated with, but difficult to disentangle from, tax avoidance, my research focuses only on standard severance agreements[2] and their relation to corporate tax avoidance.

The purpose of incentives such as severance agreements is to more closely align the goals of managers with those of shareholders – namely the maximization of firm value. A severance agreement provides an executive with a safety net should his strategies or investments prove unprofitable. Executives without this safety net may be more risk averse since risky activities that fail could result in their termination and loss of compensation. Yermack (2006) argues that severance payments can mitigate the risk averse behavior of executives. Consistent with this contention, Cadman, Campbell, and Klasa (2011), Huang (2012), and Mansi, Nguyen, and Wald (2013) all find the adoption of a severance agreement is associated with an increase in firm risk.

Thus, based on prior research, the existence of a severance agreement should encourage an executive to undertake more risky activities. One area where this could be reflected is in the level of tax avoidance. Although the level of risk varies based on the particular strategy, tax avoidance is generally considered a risky activity. There are reputational risks as well as the financial risk of penalties from regulatory agencies. The research I present here examines whether severance agreements affect the level of tax avoidance for a firm.

Prior research has considered not only the effect of having incentive compensation, but also if the magnitude and structure of compensation matters. Armstrong et al (2012) find a significant negative relation between tax director incentive compensation and GAAP ETR. Both

[2] For the remainder of the paper, the term severance agreement refers solely to standard agreements.

Blaylock (2015) and Rego and Wilson (2012) find significant positive relations between cash compensation and risk-taking. Cadman et al (2011) find positive relations between the amount of severance pay and various proxies for firm risk and firm value. If the purpose of a severance agreement is to act as a safety net for CEOs and encourage risk-taking, then a larger severance payout (bigger safety net) should encourage relatively more risk-taking.

If this is true, then I expect the level of potential severance payout to be positively related to the level of risk-taking. In following Huang (2012), I also consider that the structure of the severance agreement may matter and separate the potential severance payout into cash and equity components. In her investigation of CEO severance agreements, Huang (2012) considers the effects of cash-only severance agreements as compared to severance agreements with both cash and equity components. She finds that firms with cash-only severance agreements underperform as compared to firms whose severance agreements include an equity component, providing evidence that the structure of severance agreements is important. My results also indicate a difference between cash and equity severance pay. I find that equity-based severance is related to increased tax avoidance activities whereas cash severance is related to decreased tax avoidance activities.

This paper makes several important contributions to the literature. First, it examines a form of executive compensation, the severance agreement, which has not been considered in prior tax avoidance literature. Second, it extends current research on the effect of executive compensation on tax avoidance by providing evidence that severance agreements are incrementally informative in explaining differences in tax avoidance between firms. Finally, this paper adds to the line of research examining the relation between severance agreements and executive risk-taking.

The remainder of this paper is organized as follows: Chapter 2 discusses prior research, Chapter 3 develops hypotheses, Chapter 4 explains the research design, Chapter 5 discusses the empirical results, Chapter 6 presents additional analysis, and Chapter 7 concludes.

2. BACKGROUND

Any discussion of executive compensation should be considered within the framework of agency costs and their effect on executive decision-making. Jensen and Meckling (1976) note that managers, lacking any incentives to the contrary, act in their own best interests, even when those actions are not in the best interests of the firm and its shareholders. A primary purpose of executive compensation packages is to mitigate these agency costs. Rau and Xu (2013) describe optimal executive compensation packages as consisting of cash salary and bonus, equity-based incentives, and severance. The various components taken as a whole should incentivize executives to act in the best interests of shareholders.

2.1 Incentives and Taxes

Performance-based compensation such as cash bonuses and equity incentives have received the majority of attention from academic research on executive compensation. A common finding of prior research is that compensation affects executive decision-making. Healy (1985) finds that managers' accrual policies are related to incentives in their bonus plans and that changes in accounting procedures are related to adoptions of and changes to their bonus plans. Gibbons and Murphy (1990) find that changes in CEO compensation are positively and significantly related to firm performance. Additional research finds that option-based compensation incentivizes executives to engage in riskier investment activities (Hirshleifer and Suh, 1992).

Prior research on the relation between compensation practices and income tax avoidance has also considered the incentive effects of both cash bonuses and equity-based compensation. Phillips (2003) investigates the effect of compensating managers using after-tax measures on effective tax rates. Based on proprietary survey data, Phillips finds that compensating tax

managers, but not CEOs, on an after-tax basis leads to lower effective tax rates. Although he provides no empirical evidence as support, Phillips suggests after-tax CEO compensation could have an indirect effect on effective tax rates. He theorizes that CEOs who are compensated on an after-tax basis are more likely to similarly compensate their managers on an after-tax basis to align the managers' goals with their own.

Gaertner (2014) also investigates the relation between CEO after-tax compensation incentives and tax avoidance. Using incentive compensation data from proxy statements of S&P 500 firms, he finds firms using after-tax incentives for their CEOs have lower GAAP and cash ETRs than those using before-tax incentives. These results differ from those in Phillips (2003) who did not find a relation between incentives and tax avoidance for CEOs. Gaertner (2014) explains the difference between his results and those of Phillips (2003) as a function of sample size and statistical power. The use of a larger, hand-collected sample by Gaertner (2014) increases the statistical power of his tests. Gaertner (2014) also finds a positive relation between after-tax incentives and level of CEO cash compensation. Since after-tax incentives can be considered to be more risky than before-tax incentives, additional cash compensation reflects the additional risk borne by the CEO.

Similar to Phillips (2003) and Gaertner (2014), Powers et al (2013) examine the effect of before-tax versus after-tax performance targets on tax avoidance. They differentiate their study by focusing on annual cash bonuses, asserting that, although generally lesser in value, cash incentives are important because they are received immediately and their value is more certain than equity incentives. They find firms using after-tax performance measures have significantly lower GAAP ETRs than firms using before-tax performance measures. Using different samples,

Gaertner (2014) and Powers et al (2013) are both able to link executive compensation structure to tax avoidance.

Using stock option grants and a measure of tax sheltering, Desai and Dharmapala (2006) provide additional information on the effect of the contractual relation between managers and shareholders on tax avoidance. They find increased incentive compensation results in less tax sheltering. Although counter to the theory that incentive compensation leads to more risk-taking by executives, the authors argue their results are consistent with the theory that tax sheltering and rent diversion are complementary activities – the complexity of using tax shelters increases the opportunity for rent diversion. Therefore, as increases in compensation decrease the need for executives to enrich themselves through rent diversion, they are also less likely to engage in complex tax sheltering activities. They provide evidence that their results are driven primarily by poorly governed firms.

Armstrong et al (2012) also investigate the effect of incentive compensation on tax avoidance. More specifically, using a proprietary dataset of executive compensation information, they examine the relation between incentive compensation of the tax director and several measures of tax avoidance. They find a significant negative relation between tax director incentive compensation and GAAP ETR, but no significant relation with other measures of tax avoidance.

In examining the association between tax avoidance and rent extraction, Blaylock (2015) also considers the relation between tax avoidance and executive compensation. His study uses a comprehensive measure of compensation (salary, bonus, and stock options) to estimate the effect of tax avoidance activities on compensation. The results indicate a positive and significant relation between tax avoidance and executive compensation, and that the relation is stronger for

well-governed firms. While the author is primarily interested in compensation levels as an indicator of rent extraction, he also provides evidence on the tax avoidance-executive compensation relation.

Rego and Wilson (2012) examine the effect of equity risk incentives on corporate tax avoidance. They argue since tax avoidance is a risky activity, managers must be incentivized to engage in it. Specifically, they investigate how stock return volatility and its effects on managers' stock option portfolio value affects various measures of tax avoidance. Their findings indicate equity risk incentives are positively associated with tax avoidance. Utilizing several proxies for corporate governance, they find no significant evidence that corporate governance affects the relation between equity risk incentives and tax avoidance.

Taken as a whole, these studies provide mixed evidence on the effect that the structure and amount of executive compensation has on tax avoidance. While these prior studies consider cash bonuses (Powers et al, 2013), equity incentives (Desai and Dharmapala, 2006; Rego and Wilson, 2012), and total incentives (Phillips, 2003; Armstrong et al, 2012; Gaertner, 2014), prior research has not examined the effect of severance agreements on tax avoidance.

2.2 Characteristics of Firms Offering Severance Agreements

A component of executive compensation that has received little attention is the severance agreement. A severance agreement is a contract that provides a set amount of compensation to an employee upon his termination, demotion, or resignation. As discussed previously, severance agreements can be categorized as standard or contingent (Rau and Xu, 2013). Contingent severance agreements are triggered by the occurrence of some specified corporate event, such as a change in control of the firm. Since these agreements are designed to affect executive behavior based on the given condition, they are excluded from this study. Standard severance agreements

generally provide compensation when an executive is terminated "without cause" or resigns for "good reason." The term "without cause" is specifically defined in the contract and "cause" generally includes actions such as fraud, breach of contract, or willful misconduct. However, "cause" does not generally include incompetence or poor performance. Similarly, "good reason" is specifically defined in the contract and generally includes a significant demotion in responsibilities and/or reduction in compensation resulting in the executive's resignation (Cadman et al, 2011). The focus of this paper is severance compensation that results from termination "without cause" or for "good reason."

One may question why firms are willing to offer severance agreements to executives. Prior research provides some characteristics of firms that offer severance agreements. Utilizing hand-collected data on severance agreements in S&P 1500 firms, Rau and Xu (2013) examine how severance agreements fit into the optimal executive compensation package. Both severance agreements and equity-based incentives such as options serve to encourage risk-taking by executives. While options act as a reward when risk-taking is successful, severance agreements can act as a substitute for options, and other compensation, when risk-taking is unsuccessful. The authors consider the effects of several executive and firm characteristics on both the existence and magnitude of expected severance. In investigating the relation between risk and severance agreements, they consider both distress risk and overall firm risk. Distress risk indicates the likelihood that a firm will enter into bankruptcy in the near future. Their results indicate that distress risk is positively and significantly related to the existence and awarding of severance agreements and the magnitude of severance pay. Stock return volatility, as a measure of firm risk, is positively and significantly related to only the awarding of new or revised severance

agreements. Overall, their results indicate that riskier firms are more likely to offer executive severance agreements.

In examining the relation between CEO severance agreements and managerial decision-making, Muscarella and Zhao (2013) provide evidence on the determinants of the existence of a severance agreement. Using hand-collected data on severance agreements in S&P 500 firms, they find that leverage and size are significantly negatively related and R&D is significantly positively related to the existence of a severance agreement, indicating severance agreements are more likely to be used by growth firms. Their results also indicate a positive and significant relation between return volatility and the existence of a severance agreement, providing additional evidence that riskier firms are more likely to provide severance agreements to compensate CEOs for the increased risk inherent in the position.

Unlike Rau and Xu (2013) and Muscarella and Zhao (2013), who focus on periods prior to 2006, Cadman et al (2011) utilize detailed data from new disclosure requirements mandated by the SEC in 2006 to provide additional evidence on the determinants of CEO severance agreements[3]. As such, although they consider the existence of severance agreements, they are more focused on the magnitude of potential severance pay. Their results are mixed when compared to other research. Supporting the results in Muscarella and Zhao (2013), Cadman et al (2011) find negative and marginally significant relations between the magnitude of severance pay and firm size and market to book assets. However, in contrast to Muscarella and Zhao (2013), who find a negative relation between leverage and the existence of a severance agreement, Cadman et al (2011) find a positive and significant relation between leverage and the magnitude of severance pay. The results in Cadman et al (2011) also indicate a negative and

[3] In 2006 the SEC significantly expanded compensation disclosure requirements. The changes required firms to quantify and disclose any payments due the CEO if he was dismissed.

significant relation between the delta[4] of an executive's stock and option portfolio and the magnitude of severance pay and a positive and significant relation between return volatility and the magnitude of severance pay, providing additional evidence on the relation between severance agreements and firm risk. In general, the results for Cadman et al (2011) do not hold if they replace the magnitude of severance pay with the existence of a severance agreement.

In summary, there is limited empirical research on the characteristics of firms that offer severance agreements. Based on prior research, smaller, riskier, growth-oriented firms are more likely to offer severance agreements. While an understanding of the types of firms that offer severance agreements is important, the focus of this paper is on the motivational effects of severance agreements.

2.3 Motivational Effects of Severance Agreements

In his discussion of executive compensation, Murphy (1999) distinguishes between explicit and implicit motivational properties of executive compensation. Previously discussed performance-based components of executive compensation are considered explicit motivators, e.g. bonus payments are directly affected by accounting returns and stock option value is directly affected by stock price fluctuations. In contrast, implicit motivators are not tied directly to the results of executive decisions but can still affect executive decision-making. Severance agreements are potentially a form of implicit motivation. As severance agreements are only paid when the employee leaves his position, their value is not explicitly affected by current actions. However, they may provide implicit motivation by functioning as a safety net for executives. Even in the presence of explicit motivators such as stock options, executives may be more risk averse than shareholders would prefer. While stock options provide reward for good

[4] Delta represents the effect of changes in stock price on an executive's stock and option portfolio and is further defined in Appendix A.

performance, they do not provide any value as a protection from poor performance. By providing a large payout in the event of termination, severance agreements are designed to encourage executives to incur additional risk by protecting them from the effects of poor performance. Therefore, severance agreements should result in additional risk-taking by executives. However, the results from existing research (Cadman et al, 2011; Huang, 2012; Muscarella and Zhao, 2013; Mansi et al, 2013) are mixed as to whether or not this actually occurs.

In their study of stock options and corporate risk, Ju et al (2002) consider the impact of severance agreements on the option/risk relation. One consequence of using stock options to link a manager's compensation to firm performance is the resulting under-diversification of the manager's investment portfolio. Having a portfolio concentrated in company stock could make managers more risk averse than a well-diversified shareholder. The authors argue that severance agreements serve as insurance for the manager in the event of a decrease in firm value, thereby incentivizing them to take more risk. Although it is an analytical study, the results of their simulation analysis support their argument that severance agreements provide *ex ante* incentives to increase risk.

Utilizing detailed data from new disclosure requirements mandated by the SEC in 2006, Cadman et al (2011) examine both the existence and magnitude of severance pay as a component of efficient contracting between CEOs and shareholders. Efficient contracting predicts that severance agreements provide CEOs insurance against poor performance and encouragement to invest in risky positive net present value projects. They argue it is not just the existence of a severance agreement that motivates a CEO, but that the magnitude of the severance payment also determines motivation. They find a positive relation between the amount of the severance pay and stock volatility, as a proxy for risk. They also find a positive relation between the amount of

severance pay and firm value. None of their results hold when considering only the existence, but not the magnitude, of severance pay, suggesting that the existence of a severance agreement is not enough to encourage additional risk-taking unless the value is sufficiently high.

In her investigation of how severance agreements affect shareholder wealth and CEO risk-taking behavior, Huang (2012) considers two competing theories about the effects of severance agreements on CEO risk-taking. The severance as put option perspective argues that severance agreements act as put options, or insurance policies, that protect CEOs in the event of poor firm performance. Conversely, the prevention of excess risk-taking perspective argues that CEOs with severance agreements may choose termination and severance pay over additional risk-taking. Using equity volatility as a measure of risk-taking, she finds that CEOs with severance agreements take more risks, supporting the severance as put option perspective. However, she finds a significant negative relation between CEO severance agreements and stock returns. This result is in contrast to Cadman et al (2011), who find a positive relation between the amount of severance pay and firm value. However, Huang (2012) only considers the existence of the severance agreement whereas Cadman et al (2011) consider the magnitude of severance pay. Huang (2012) also examines if the structure of a severance agreement affects firm performance by separating severance agreement firms into those with cash-only agreements and those whose agreements also include an equity component. Her results indicate firms with cash only severance agreements underperform when compared to firms whose severance agreements include an equity component and these cash only severance agreements are the main driver of the negative relation between CEO severance agreements and stock returns. Based on these results, Huang (2012) argues that how firms structure CEO severance agreements is an important determinant of how they motivate CEO performance.

In their analysis of severance agreements and CEO behavior, Muscarella and Zhao (2013) provide additional information on how the existence of a severance agreement affects risk-taking and firm performance. They consider the quiet life hypothesis, which suggests that CEOs with severance agreements will under-invest and avoid risk-taking. Supporting their hypothesis, they find firms with CEO severance agreements invest less in discretionary expenditures such as R&D and are more risk-averse, as measured by leverage, industry diversification, and stock volatility. These results contradict those by Cadman et al (2011) and Huang (2012), who find increased risk-taking by firms with CEO severance agreements.

In investigating the effect of severance agreements on a firm's cost of debt, Mansi et al (2013) consider the effects of severance agreements on risk and effort. They hypothesize that severance agreements incentivize CEOs to increase risk and decrease effort. The argument that severance agreements increase risk-taking is based on the theory that these agreements limit downside risk – if the risk-taking is unsuccessful and the executive is terminated, they are still rewarded for taking the risk. Using stock volatility as a measure of risk, the authors find a positive and significant relation between severance agreements and risk. Their second hypothesis is based on the theory that severance agreements (as a component of weak governance) have a negative effect on operating performance (as a proxy for CEO effort). Using return on assets and sales growth as measures of operating performance, the authors find a negative and significant relation between severance agreements and performance. These results are consistent with those of Huang (2012) in that they indicate an increase in risk-taking but a decrease in firm performance.

Overall, the results on severance agreements and firm risk are mixed. Ju et al (2002) provides support for the argument that severance agreements encourage additional risk-taking.

Huang (2012) and Mansi et al (2013) provide evidence of a positive relation between the existence of a severance agreement and firm risk whereas Muscarella and Zhao (2013) find firms with severance agreements are more risk averse. Additionally, the results in Cadman et al (2011) indicate a positive relation between firm risk and the magnitude of severance pay, but not the existence of a severance agreement.

3. HYPOTHESES

Prior research on compensation and tax avoidance has focused largely on explicit types of incentive compensation such as cash bonuses and stock options (Powers et al, 2013; Desai and Dharmapala, 2006; Rego and Wilson, 2012) and on the methods used to measure performance (Phillips, 2003; Gaetner, 2013; Powers et al, 2013). One method of compensation that has not been considered in prior literature is the severance agreement. If the possibility of a severance payout affects an executive's decision-making, then severance agreements could be considered a type of incentive compensation. However, severance agreements are "all or nothing" arrangements that only occur at termination. As such, they may not motivate executives in the same manner as other incentives.

Prior research (Lambert and Larcker, 1985; Narayanan and Sundaram, 1998) has shown that severance agreements can motivate executives to maximize shareholder wealth. Based on agency theory, this suggests severance agreements increase risk-taking since executives are generally considered to be more risk averse than shareholders. Additionally, Cadman et al (2011), Huang (2012), and Mansi et al (2013) find severance agreements increase risk-taking by executives. Dyreng, Hanlon, and Maydew (2010) provide evidence that individual executives can influence corporate tax avoidance. Since tax avoidance in general is a risky activity which can impose significant costs on both the firm and its managers, one indicator of increased risk-taking could be increased tax avoidance activities, as reflected by lower tax rates and increased sheltering activities. As severance agreements are a form of executive compensation that encourages risk-taking, I expect them to be positively related to tax avoidance.

Existing research on executive compensation and effective tax rates has shown a fairly consistent negative relation between the two (Gaertner, 2014; Powers et al, 2013; Rego and

Wilson, 2012). There have been mixed results, however, on the relation between measures of more aggressive tax avoidance and executive compensation. Desai and Dharmapala (2006) find increased compensation results in less tax sheltering. However, more recent research by Blaylock (2015) and Rego and Wilson (2012) finds positive relations between executive compensation and measures of aggressive tax avoidance such as tax shelters and discretionary permanent differences. If severance agreements function to encourage risk-taking, then their existence should be associated with aggressive tax planning. This leads to my first hypothesis (in alternative form):

H1: Firms with CEO severance agreements are more likely to engage in aggressive tax planning than firms without CEO severance agreements.

While the above hypothesis is concerned with how the existence of CEO severance agreements is related to tax avoidance, I also consider how the magnitude of potential severance payouts is related to tax avoidance. Cadman et al (2011) find that the magnitude of severance pay, not the existence of a severance agreement, is related to firm risk and firm value. Gaertner (2014) finds a positive relation between after-tax incentives and level of CEO cash compensation. Armstrong et al (2012) considers the effect of total annual compensation (salary, bonus, restricted stock and option grants, and long-tern incentive plan payouts) on effective tax rates and finds a significant negative relation between tax director incentive compensation and GAAP ETR. Similarly, Blaylock (2015) examines total annual compensation in his study of rent extraction and tax aggressiveness. His results indicate a significant positive relation between level of compensation and aggressive tax behavior. Rego and Wilson (2012) also find a significant relation between an executive's level of cash compensation and risk incentive.

This prior literature has shown a fairly consistent positive relation between the level of executive compensation and tax aggressive behavior. The question for this paper is whether or not the results for explicit motivators used in prior research carry over to implicit motivators such as severance agreements. If severance agreements do act as a safety net for executives, then larger severance payouts provide larger nets and should encourage relatively more risk-taking. This leads to my second hypothesis:

H2: The magnitude of CEO severance pay is positively related to the propensity of the firm to engage in aggressive tax planning.

In addition to the level of compensation, prior research has also considered the components of compensation contracts. Powers et al (2012) consider only the relation between cash bonuses and tax avoidance. Desai and Dharmapala (2006) and Rego and Wilson (2012) examine stock options in their studies on tax avoidance.

In her investigation of severance agreements, Huang (2012) considers the effect of cash-only severance agreements versus those that also include an equity component. She finds firms with cash only severance agreements underperform when compared to firms whose severance agreements include an equity component. Based on these results, it is possible that cash and equity severance provide different types of motivation. She notes that cash severance appears to exacerbate agency problems but that effect can be mitigated by also including equity-based severance. If the structure of a severance agreement affects firm performance it may also affect the level of tax avoidance. It is possible that since cash severance is a set amount that does not vary based on firm performance, it does not motivate risk-taking, but rather supports the quiet-life hypothesis as discussed in Muscarella and Zhao (2013). The value of equity severance,

however, is influenced by firm performance and should encourage additional risk-taking.This leads to my third hypothesis:

H3: The magnitude of CEO equity (cash) severance pay is positively (negatively) related to the propensity of the firm to engage in aggressive tax planning.

4. RESEARCH DESIGN

4.1 Methodology

As no one measure completely captures the effect of tax avoidance activities, I consider multiple measures in testing my hypotheses. The GAAP effective tax rate (*GETR*) is the ratio of total income tax expense to pre-tax book income. As total income tax expense includes both current and deferred taxes, *GETR* will not detect strategies that only defer taxes. However, *GETR* is the rate that affects accounting earnings and has been used in previous studies of executive compensation and taxes (Phillips, 2003; Armstrong et al, 2012; Gaertner, 2014; Powers et al, 2013). Accounting earnings are often the basis for determining incentive compensation. If severance agreements encourage executives to engage in increased tax avoidance it should be reflected in lower *GETR.*

The cash effective tax rate (*CETR*) is the ratio of cash taxes paid to pre-tax book income. In contrast to *GETR*, the use of current cash outflows for income taxes reflects the effects of deferral strategies. Like *GETR*, *CETR* captures a broad range of tax planning activities and is widely used in the tax literature.

To examine the effect of more aggressive forms of tax avoidance activities, I also consider the propensity to engage in tax sheltering (*SHELTER*) and discretionary permanent differences (*DTAX*). *SHELTER* is based on a tax shelter prediction model from Wilson (2009) and estimates the likelihood that a firm is engaged in tax sheltering activities. *DTAX*, developed by Frank et al (2009), provides an estimation of permanent book-tax differences that are not the

result of benign tax planning, such as tax credits, but are instead likely the result of aggressive tax planning. H1 is tested by estimating the following model using ordinary least squares[5]:

$$TAXAVOID_{it} = \beta_0 + \beta_1 SEV_{it} + \beta_2 CBONUS_{it} + \beta_3 DELTA_{it} + \beta_4 VEGA_{it} + \beta_5 SIZE_{it} + \beta_6 ROA_{it} + \beta_7 LEV_{it} + \beta_8 FOR_{it} + \beta_9 CAPINT_{it} + \beta_{10} RD_{it} + \beta_{11} NOL_{it} + \beta_{12} VOL_{it} + \beta_{13} ZSCORE_{it} + \sum_t \beta_t YEAR_t + \sum_i \beta_i INDUSTRY_i + \varepsilon_{it} \quad (1)$$

where *TAXAVOID* is represented by four measures of tax avoidance: *GETR*, *CETR*, *SHELTER*, and *DTAX*. *GETR* is total income tax expense at times *t* through *t+2* divided by pre-tax book income at times *t* through *t+2*. *CETR* is cash taxes paid at times *t* through *t+2* divided by pre-tax book income at times *t* through *t+2*. Following Dyreng, Hanlon, and Maydew (2008), I use a 3-year average for both *GETR* and *CETR* to account for fluctuations in taxes over time. While Dyreng et al (2008) consider periods ranging up to 10 years, I use a 3-year period to minimize the loss of observations from needing subsequent years' data to calculate my ETR measures.

Following prior literature (Armstrong et al, 2012; Gaertner, 2014) I constrain both ETR measures to lie between 0 and 1. *SHELTER* is an indicator variable equal to 1 for predicted tax shelter firms and zero otherwise. *DTAX* is an estimation of permanent book-tax differences developed by Frank et al (2009). The variable of interest is *SEV*, an indicator variable equaling 1 if a severance agreement is present and 0 otherwise. My expectation is the coefficient on *SEV* will be negative (positive) and significant for *GETR* and *CETR* (*SHELTER* and *DTAX*).

[5]The *SHELTER* variable is calculated using *SIZE*, *ROA*, *LEV*, *FOR*, and *RD*. Therefore, those variables are excluded from equation (1) when *SHELTER* is the dependent variable. Also, since *SHELTER* is a binary variable, it is estimated using a logit model.

Prior literature (Armstrong et al, 2012; Gaertner, 2014; Powers et al, 2013; Rego and Wilson, 2012) has shown that incentive compensation, as a reward for successfully implementing riskier tax strategies, is positively related to tax avoidance. As such, I include *CBONUS, DELTA, AND VEGA* to control for any relation between incentive compensation and tax avoidance that *SEV* might otherwise capture. *CBONUS* is the cash incentive compensation received by the CEO scaled by total direct compensation. *DELTA* and *VEGA* control for the effect of stock price and stock return volatility, respectively, on the CEO's stock and option portfolio.[6] I control for several variables that prior literature has used in investigating tax avoidance (Gaertner, 2014; Gupta and Newberry, 1997; Powers et al, 2013; Rego, 2003; Rego and Wilson, 2012), including: the natural log of total assets (*SIZE*), pre-tax return on assets (*ROA*), leverage (*LEV*), foreign operations (*FOR*), capital intensity (*CAPINT*), research and development (*RD*), and net operating losses (*NOL*). Prior research (Cadman et al, 2011; Muscarella and Zhao, 2013; Rau and Xu, 2013) has also indicated significant relations between severance agreements and stock return volatility (*VOL*), and distress risk (*ZSCORE*). Complete variable descriptions are included in Appendix A.

SIZE is included to control for any tax planning benefits related to economies of scale. Pre-tax return on assets (*ROA*) controls for the effects of firm profitability. Leverage (*LEV*) is included to control for tax planning opportunities related to a firm's capital structure. Firms with more extensive foreign operations (*FOR*) have more options for effective tax planning. Capital intensity (*CAPINT*) controls for the tax benefits of accelerated depreciation. Research and development expenses (*RD*) provide additional tax benefits to firms engaged in such activities. Firms can use net operating loss carryforwards (*NOL*) from prior periods to reduce their income

[6] *DELTA* and *VEGA* are calculated as in Core and Guay (1999).

taxes in the current year. Stock return volatility (*VOL*) and distress risk (*ZSCORE*) are measures of firm risk that prior research has indicated are positively associated with severance agreements. They are included to control for any inherent riskiness in severance agreement firms. I also control for year and industry fixed effects[7].

To test H2 I use a model similar to equation (1), with *TAXAVOID* represented in separate regressions by *GETR*, *CETR*, *SHELTER*, and *DTAX*, respectively:

$$TAXAVOID_i = \beta_0 + \beta_1 TOTAL_i + \beta_2 CBONUS_i + \beta_3 DELTA_i + \beta_4 VEGA_i + \beta_5 SIZE_i + \beta_6 ROA_i + \beta_7 LEV_i + \beta_8 FOR_i + \beta_9 CAPINT_i + \beta_{10} RD_i + \beta_{11} NOL_i + \beta_{12} VOL_i + \beta_{13} ZSCORE_i + \sum_t \beta_t YEAR_t + \sum_i \beta_i INDUSTRY_i + \varepsilon_i \quad (2)$$

The variable of interest in this equation is *TOTAL*, which represents the total dollar value of potential payments due the CEO in the event their employment is terminated during the year scaled by total direct compensation. I expect the coefficient on *TOTAL* will be negative (positive) and significant for *GETR* and *CETR* (*SHELTER* and *DTAX*). The remaining variables are as described for equation (1).

To examine the supposition that the structure, in addition to the magnitude, of potential severance payouts affects CEO behavior I test H3 using the following model:

$$TAXAVOID_i = \beta_0 + \beta_1 CASH_i + \beta_2 EQUITY_i + \beta_3 CBONUS_i + \beta_4 DELTA_i + \beta_5 VEGA_i + \beta_6 SIZE_i + \beta_7 ROA_i + \beta_8 LEV_i + \beta_9 FOR_i + \beta_{10} CAPINT_i + \beta_{11} RD_i + \beta_{12} NOL_i + \beta_{13} VOL_i + \beta_{14} ZSCORE_i + \sum_t \beta_t YEAR_t + \sum_i \beta_i INDUSTRY_i + \varepsilon_i \quad (3)$$

[7] For comparison purposes I also tabulate results for each regression without year and industry fixed effects.

As in equations (1) and (2) *TAXAVOID* is represented by *GETR*, *CETR*, *SHELTER*, and *DTAX*. The variable of interest from equation (2), *TOTAL*, has been separated into two components, *CASH* and *EQUITY*. *CASH* represents the dollar value of cash payments due the CEO in the event their employment is terminated during the year scaled by total direct compensation. *EQUITY* represents the estimated[8] dollar value of additional equity incentives due the CEO in the event their employment is terminated during the year scaled by total direct compensation. The coefficients on *CASH* are expected to be positive (negative) and significant for *GETR* and *CETR* (*SHELTER* and *DTAX*). The coefficients on *EQUITY* are expected to be negative (positive) and significant for *GETR* and *CETR* (*SHELTER* and *DTAX*). The remaining variables are as described previously for equation (1).

4.2 Sample

To test H1, my sample begins with CEO compensation data from the Compustat Execucomp Annual Compensation database. The database provides executive compensation data for all S&P 1500 firms beginning in 1994. However, in 2006 the SEC issued new compensation disclosure guidelines that significantly expanded the amount of compensation information that firms were required to disclose. One area of increased disclosure was severance pay. Prior to 2006, firms were only required to disclose if a severance agreement existed and any material payments that would be due upon termination. The new disclosure rules required firms to quantify and tabulate all potential severance payments in significantly more detail. Therefore, my

[8] The value, provided by the firm, of additional equity compensation due the CEO in the event of termination is based on the stock price at the end of the fiscal year. A change in the stock price between year-end and the actual date of termination would result in a corresponding change in equity compensation.

sample begins in 2006 to take advantage of the additional information available beginning in that year. This results in an initial sample of 13,280 firm-year observations for the years 2006-2012.

Additional financial statement and stock price information used to calculate effective tax rates, sheltering probability, and other control variables are collected from the Compustat Fundamentals Annual and CRSP databases. To be included in the final sample, a firm-year observation must have all of the data necessary to calculate the variables in equation (1) and the *SHELTER*, *DTAX*, and *ZSCORE* equations described in Appendix A. I also eliminate firm-years with negative pretax income as loss-year firms have different motivation regarding tax avoidance. Finally, consistent with prior literature, I eliminate financial institutions and public utilities. The preceding requirements result in a final sample of 4,141 firm-year observations.

As the variable of interest for H1 is an indicator variable, the information available in Execucomp is sufficient to calculate its value. However, the more specific values required to test H2 and H3 are not available in Execucomp. The values for *CASH* and *EQUITY* must be hand collected from each company's executive compensation disclosures in their respective proxy filings, an example of which is included as Exhibit B. To make this process more manageable I chose to collect detailed potential severance payouts for only S&P 500 firms for 2011 and 2012. I begin with all observations for 2011-12 from the multi-year sample used to test H1. I then match this sample with a listing of S&P 500 firms for 2011-12. Finally, I eliminate firms whose proxy filings do not provide sufficient information to calculate the *CASH* and *EQUITY* variables, resulting in a final sample of 467 firm-year observations.

5. RESULTS

5.1 Descriptive Statistics - Existence

Table 1, Panel A, provides descriptive statistics for all variables used in equation (1). The mean (median) *GETR* and *CETR* are 0.31 (0.33) and 0.27 (0.27), respectively. The variable of interest, *SEV*, has a mean of 0.69, indicating the presence of a severance agreement in approximately 69% of the firm-years in the sample. Panel B of Table 1 compares the characteristics of firms that do and do not offer severance agreements. On average, firms with severance agreements in place have lower GAAP and cash ETRs and higher permanent book-tax differences. These results provide univariate support for H1. Similar to findings in Cadman et al (2011), the results for *DELTA* suggest CEOs with severance agreements are less sensitive to stock price volatility. Consistent with results from Muscarella and Zhao (2013) and Rau and Xu (2013), annual return volatility is higher for severance agreement firms. However, the findings that severance agreement firms are larger and have lower distress risk contradict those in prior research (Cadman et al, 2011; Muscarella and Zhao, 2013; Rau and Xu, 2013).

Table 2 provides Pearson and Spearman correlation coefficients for all variables used in equation (1). While the majority of the correlations are significant at the 10% level, only the correlations between *SIZE* and *SHELTER* (Pearson 0.59, Spearman 0.55), *SIZE* and *VEGA* (Spearman 0.55), *DELTA* and *VEGA* (Pearson 0.55, Spearman 0.59), and *ROA* and *ZSCORE* (Pearson 0.57, Spearman 0.64) are greater than 0.50. As expected, *GETR* and *CETR* are positively and significantly correlated with each other (Pearson 0.43, Spearman 0.40) while *SHELTER* is negatively and significantly correlated with both *GETR* (Pearson -0.18, Spearman -0.22) and *CETR* (Pearson -0.13, Spearman -0.15). *DTAX* is positively and significantly correlated with *SHELTER* (Pearson 0.13, Spearman 0.26) and negatively and significantly

correlated with both *GETR* (Pearson -0.24, Spearman -0.36) and *CETR* (Pearson -0.16, Spearman -0.17). *SEV* is negatively and significantly correlated with *GETR* (Pearson -0.04, Spearman -0.05) and *CETR* (Pearson -0.03, Spearman -0.04), providing additional support for H1 at the univariate level. *SEV* is positively and significantly correlated with *DTAX* (Pearson 0.04, Spearman 0.03), but is not significantly correlated with *SHELTER*.

5.2 Multivariate Regression - Existence

I predict that the incentive to engage in risk-taking activities provided by CEO severance agreements will be related to lower effective tax rates for firms with such agreements in place. Table 3 presents the ordinary least squares regression results of testing H1, displaying the estimated coefficients from equation (1) with *GETR* and *CETR* as the dependent variables. The variable of interest for this regression is *SEV*, which represents the existence of a severance agreement. A negative and significant coefficient on *SEV* in the *GETR* regression is consistent with the supposition that the presence of a severance agreement leads to lower income tax expense and therefore affects accounting earnings. I find no relation, however, between the presence of a severance agreement and *GETR*.

In addition to investigating the effect of severance agreements on reported accounting earnings, I also examine their effect on actual cash taxes paid (*CETR*). While *GETR* is important in that it affects reported accounting earnings, it reflects neither the effect of deferral strategies nor the cash savings from tax strategies. However, a negative and significant coefficient on *SEV* in the *CETR* regression would indicate that the presence of a severance agreement leads to a reduction in actual cash taxes paid. The results in Table 3 do not indicate a link between the presence of a severance agreement and cash taxes paid.

While lower effective tax rates are one indicator of additional risk-taking, I also consider two additional measures that could indicate the use of more aggressive tax planning. Table 4 presents the logit regression results of testing H1 using equation (1). The dependent variable, *SHELTER*, is an indicator variable based on a tax sheltering prediction model from Wilson (2009). As in prior tests, the variable of interest is still *SEV*. A positive and significant coefficient on *SEV* would indicate that the presence of a severance agreement is related to an increased likelihood of tax sheltering. The results of this regression provide no support for H1.

Another indicator of tax risk-taking used in the literature is discretionary permanent differences (Blaylock, 2015; Rego and Wilson, 2012). If severance agreements encourage risk-taking, there should be a positive relation between the presence of a severance agreement and the level of discretionary permanent differences. Table 5 column 1 presents the ordinary least squares regression results from testing H1 using equation (1). The dependent variable, *DTAX*, is an estimate of discretionary permanent differences developed by Frank et al (2009), and *SEV* is the variable of interest. The coefficient on *SEV* is positive and significant (coefficient = 0.0068, p-value < 0.01), providing support for H1.

While the results from testing equation (1) provide limited support for H1, these tests only examine the effect of having a severance agreement in place. To further examine the relation between tax avoidance and severance agreements, I also consider how the magnitude and structure of severance agreements may affect CEO behavior.

5.3 Descriptive Statistics – Magnitude and Structure

Table 6 provides descriptive statistics for all variables used in equations (2) and (3). The mean (median) *GETR* and *CETR* are 0.29 (0.30) and 0.26 (0.27), respectively. Table 7 provides Pearson and Spearman correlation coefficients for all variables used in equations (2) and (3).

While the many of the correlations are significant at the 10% level, only a few are greater than 0.50. *DELTA* and *VEGA* (Spearman 0.66), *SIZE* and *SHELTER* (Pearson 0.57, Spearman 0.52), and *ROA* and *ZSCORE* (Pearson 0.68, Spearman 0.73) are positively and significantly related. As would be expected, *GETR* and *CETR* are positively and significantly correlated with each other (Pearson 0.49, Spearman 0.52) while *SHELTER* is negatively and significantly correlated with both *GETR* (Pearson -0.11, Spearman -0.17) and *CETR* (Pearson -0.12, Spearman -0.14). *CETR* is also negatively and significantly correlated with *EQUITY* (Pearson 0.08), providing some univariate support for H3. *SHELTER* is negatively and significantly correlated with *CASH* (Pearson -0.10, Spearman -0.08), also providing some univariate support for H3. *DTAX* is negatively and significantly correlated with both *GETR* (Pearson -0.43, Spearman -0.39) and *CETR* (Pearson -0.33, Spearman -0.25). *DTAX* is also negatively and significantly correlated to *TOTAL* (Spearman -0.08) and *CASH* (Spearman -0.13). As expected, *TOTAL* is positively and significantly correlated with *CASH* (Pearson 0.68, Spearman 0.84) and *EQUITY* (Pearson 0.93, Spearman 0.87), while *CASH* and *EQUITY* are also positively and significantly correlated (Pearson 0.37, Spearman -0.54).

5.4 Multivariate Regression – Magnitude and Structure

I predict that higher levels of potential severance payouts will encourage CEOs to engage in more risk-taking, reflected in lower effective tax rates. I first test H2 by estimating equation (2) using ordinary least squares regression with *GETR* and *CETR* as the dependent variables. Table 8, columns 1 and 5, present the results of these regressions on *GETR* and *CETR*, respectively. The variable of interest for these regressions is *TOTAL*. H2 predicts a negative coefficient on *TOTAL*, which would indicate an inverse relation between total severance payout

and effective tax rate. The coefficient on *TOTAL* for both *GETR* and *CETR* is negative but not significant.

I next test the prediction in H2 that higher levels of potential severance payouts will encourage more risk-taking in the form of increased tax sheltering. Table 9, column 1 presents the logit regression results of testing H2 using equation (2). H2 predicts a positive coefficient on the variable of interest, *TOTAL*, which would indicate that higher levels of potential severance payouts are related to an increased likelihood of tax sheltering. The coefficient on *TOTAL* is positive but not significant.

My final test of H2 examines the relation between the level of severance payout and discretionary permanent differences. Table 10, column 1 presents the ordinary least squares regression results of testing H2 using equation (2). A positive coefficient on the variable of interest, *TOTAL*, would support the prediction of a positive relation between the level of severance payout and *DTAX*. The coefficient on *TOTAL* is positive but not significant.

My results provide no support for H2. One explanation is the components of total severance pay, cash and equity, do not motivate executives in the same way. I test this theory by separating *TOTAL* from equation (2) into its components, *CASH* and *EQUITY*, in equation (3). H3 predicts a positive (negative) coefficient on *CASH* and a negative (positive) coefficient on *EQUITY* when *GETR* and *CETR* (*SHELTER* and *DTAX*) are the dependent variables.

I first test H3 using ordinary least squares regression with *GETR* and *CETR* as the dependent variables. Table 8, columns 3 and 7, present the results of these regressions on *GETR* and *CETR*, respectively, with the variables of interest being *CASH* and *EQUITY*. For *GETR*, the coefficient on *CASH* is positive and significant (coefficient = 0.0184, p-value < 0.05), while the coefficient on *EQUITY* is negative and significant (coefficient = -0.0064, p-value < 0.05). For

CETR, the coefficient on *CASH* is positive and significant (coefficient = 0.0189, p-value < 0.05), while the coefficient on *EQUITY* is negative and significant (coefficient = -0.0110, p-value < 0.01).

To further investigate the effect of potential severance payout composition on tax avoidance, I estimate equation (3) using a logit regression with *SHELTER* as the dependent variable. Table 9, column 3 presents the results of this regression, with *CASH* and *EQUITY* being the variables of interest. The coefficient on *CASH* is negative and significant (coefficient = -1.0854, chi-square = 9.96), while the coefficient on *EQUITY* is positive and significant (coefficient = 0.3084, chi-square = 5.72), supporting H3.

As a final test of H3, I investigate the relation between severance pay and discretionary permanent differences. The results of estimating equation (3) with *DTAX* as the dependent variable are given in Table 10, column 3. The coefficient on *CASH* is negative but not significant, while the coefficient on *EQUITY* is positive and marginally significant (coefficient = 0.0019, p-value < 0.10).

Overall, the results from testing H3 provide evidence of a relation between tax avoidance and the structure and magnitude of severance pay. Cash severance is related to lower tax avoidance activities as evidenced by higher GAAP and cash ETRs and a lower likelihood of tax sheltering. Equity-based severance is related to increased tax avoidance activities as evidenced by lower GAAP and cash ETRs, increased likelihood of tax sheltering, and higher discretionary permanent differences. These results support the idea that equity compensation motivates risk-taking because of the potential to increase the amount of compensation. Cash compensation, possibly due to its relatively fixed nature, does not appear to motivate risk-taking.

6. ADDITIONAL ANALYSIS

6.1 General Robustness

Checking for multicollinearity is performed by calculating the variance inflation factors (VIFs) for the independent variables in each regression (untabulated). While there is no set value for VIFs that indicates the presence of multicollinearity, values less than 10 are generally considered acceptable. None of the VIFs are greater than 3, implying that multicollinearity is not an issue.

I also test for heteroskedasticity. The results of the White test (untabulated) indicate that heteroskedasticity is present. Heteroskedasticity does not bias the estimated coefficients, but does bias their standard errors. As such, all t-values reported in Tables 3, 5, 8, and 10 are calculated using robust standard errors to adjust for the presence of heteroskedasticity.

7. CONCLUSION

In this study, I investigate the relation between CEO severance agreements and tax avoidance and provide evidence that CEO severance agreements are related to the level of tax avoidance. Consistent with my prediction, I find increases in the amount of potential equity severance payout are related to lower GAAP and cash effective tax rates, an increased likelihood of tax sheltering, and increased discretionary permanent differences, and that increases in the amount of potential cash severance payout are related to higher GAAP and cash effective tax rates and a decreased likelihood of tax sheltering. I also find limited evidence that the presence of a severance agreement is related to increased tax avoidance.

My results indicate that the structure and magnitude of severance pay are important in understanding how severance agreements are related to executive risk-taking. Prior research has considered structure (Huang, 2012) and magnitude (Cadman et al, 2011) separately, but to my knowledge, this is the first paper to consider them simultaneously. I show that increased levels of equity-based severance are related to increased risk-taking and that increased levels of cash-based severance are related to decreased risk-taking. These competing results may explain the mixed findings in prior severance agreement literature. Without considering the structure and magnitude of severance pay, prior research may have been unable to sufficiently disentangle the competing relationships found by this study. Consideration of this detailed information should provide a better understanding of the motivational effects of severance agreements than prior research that has largely considered only their existence.

This paper extends the literature on whether executives and executive compensation packages affect tax avoidance. Prior research has examined the relation between tax avoidance and stock options (Desai and Dharmapala 2006; Rego and Wilson 2012) and between tax

avoidance and before-tax versus after-tax measures (Phillips 2003; Gaertner 2014; Powers et al 2013). To my knowledge this is the first paper to consider the effect of severance agreements on corporate tax avoidance, providing additional evidence that executive compensation and tax avoidance are related. This paper also supports the results in Dyreng et al (2010) on the effects of executives on corporate tax avoidance.

This paper contributes to existing research on the use of executive compensation as a tool to mitigate agency conflicts. Agency conflicts can arise when managers make decisions that are not optimal for the firm due to differing risk tolerances between management and shareholders. Prior research on executive compensation and risk-taking (Ju et al, 2002; Huang, 2012; Rau and Xu, 2013; Mansi et al, 2013) has found that properly structured compensation packages, including severance agreements, can encourage executives to incur additional risk. This paper provides additional evidence on how executive compensation structure, specifically severance agreements, is related to executive behavior. I consider a different measure of risk-taking, tax avoidance, which has not been considered in prior research on severance agreements. Although severance agreements do not represent what is normally considered incentive compensation, they do appear to serve this function.

REFERENCES

Altman, E. 1968. Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy. *The Journal of Finance* 23(4):589-609.

Armstrong, C., J. Blouin, and D. Larcker. 2012. The incentives for tax planning. *Journal of Accounting and Economics* 53:391-411.

Blaylock, B. 2015. Is tax avoidance associated with economically significant rent extraction among U.S. firms? *Contemporary Accounting Research*. forthcoming.

Cadman, B., J. Campbell, and S. Klasa. 2011. Are ex-ante CEO severance pay contracts consistent with efficient contracting? Working paper.

Coca-Perraillon, M. 2006. Matching with propensity scores to reduce bias in observational studies. Proceedings of the Northeast SAS Users Group.

Coles, J., N. Daniel, and L. Naveen. 2006. Managerial Incentives and Risk-Taking. *Journal of Financial Economics* 79:431-468.

Coles, J., N. Daniel, and L. Naveen. 2013. Calculation of Compensation Incentives and Firm-related Wealth Using Execucomp: Data, Program, and Explanation. Working paper.

Core, J. and Guay, W. 1999. The use of equity grants to manage optimal equity incentive levels. *Journal of Accounting and Economics* 28:151-184.

Core, J. and Guay, W. 2002. Estimating the Value of Employee Stock Option Portfolios and Their Sensitivities to Price and Volatility. *Journal of Accounting Research* 40(3):613-630.

Crocker, J. and J. Slemrod. 2005. Corporate tax evasion with agency costs. *Journal of Public Economics* 89:1593-1610.

Desai, M. and D. Dharmapala. 2006. Corporate tax avoidance and high-powered incentives. *Journal of Financial Economics* 79:145-179.

Dyreng, S., M. Hanlon, and E. Maydew. 2008. Long-run corporate tax avoidance. *The Accounting Review* 83(1): 61-82.

Dyreng, S., M. Hanlon, and E. Maydew. 2010. The effects of executives on corporate tax avoidance. *The Accounting Review* 85(4): 1163-1189.

Frank, M., L. Lynch, and S. Rego. 2009. Tax reporting aggressiveness and its relation to aggressive financial reporting. *The Accounting Review* 84(2): 467-496.

Gaertner, F. 2014. CEO after-tax compensation incentives and corporate tax avoidance. *Contemporary Accounting Research* 31(4):1077-1102.

Gibbons, R. and K. Murphy. 1990. Relative performance evaluation for chief executive officers. *Industrial Labor Relations Review* 43:30S-51S.

Gompers, P., J. Ishii, and A. Metrick, 2003. Corporate governance and equity prices. *Quarterly Journal of Economics* 118(1):107-155.

Guay, W. 1999. The Sensitivity of CEO Wealth to Equity Risk: an Analysis of the Magnitude and Determinants. *Journal of Financial Economics* 53:43-71.

Gupta, S. and K. Newberry. 1997. Determinants of the variability in corporate effective tax rates: evidence from longitudinal data. *Journal of Accounting and Public Policy* 16:1-34.

Hanlon, M. and S. Heitzman. 2011. A review of tax research. *Journal of Accounting and Economics* 50:127-178.

Healy, P. 1985. The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics* 7:85-107.

Hirshleifer, D. and Y. Suh. 1992. Risk, managerial effort, and project choice. *Journal of Financial Mediation* 2:308-345.

Huang, P. 2012. Marital prenups? A look at CEO severance agreements. Working paper.

Jensen, M. and W. Meckling. 1976. Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3:305-360.

Ju, N., H. Leland, and L. Senbet. 2002. Options, option repricing and severance packages in managerial compensation: their effects on corporate risk. Working paper.

Mansi, S., A. Nguyen, and J. Wald. 2013. Severance agreements, incentives, and the cost of debt. Working paper.

Murphy, K. 1999. Executive Compensation. in *Handbook of Labor and Economics*, O. Ashenfelter and D. Card (eds.). Amsterdam: North Holland, 2485-2563.

Muscarella, C. and J. Zhao. 2013. Promoting the quiet life or risk-taking? CEO severance contracts and managerial decision-making. Working Paper.

Phillips, J. 2003. Corporate tax-planning effectiveness: the role of compensation-based incentives. *The Accounting Review* 78(3):847-874.

Powers, K., J. Robinson, and B. Stomberg. 2013. Do CEO performance measures motivate tax avoidance? Working paper.

Rau, P. and J. Xu. 2013. How do ex ante severance pay contracts fit into optimal executive incentive schemes? *Journal of Accounting Research* 51(3):631-671.

Rego, S. 2003. Tax-avoidance activities of U.S. multinational corporations. *Contemporary Accounting Research* 20(4):805-833.

Rego, S. and R. Wilson. 2012. Equity risk incentives and corporate tax aggressiveness. *Journal of Accounting Research* 50(3):775-809.

Rosenbaum, P. 2005. Heterogeneity and Causality. *The American Statistician* 59(2):147-152.

Wilson, R. 2009. An examination of corporate tax shelter participants. *The Accounting Review* 84(3):969-999.

Yermack, D. 2006. Golden handshakes: separation pay for retired and dismissed CEOs. *Journal of Accounting and Economics* 41:237-256.

APPENDIX A: Variable Descriptions

Variable	Description
CBONUS	(Bonus + Noneq_Incent)/Total direct compensation
BTD	(Pretax income – current tax expense/.35 - ΔNOL)/Total assets(AT)
CAPINT	Net property, plant, and equipment/Total assets(AT)
CASH	Dollar value of cash payments under CEO severance agreement/Total direct compensation
CETR	Cash taxes paid (TXPD)/Pretax income (PI) over the 3-year period from year *t* to year *t*+2
CSTE	Current state tax expense(TXS)/beginning of year total assets(AT)
DELTA	[1% × (share price) × (number of shares held) + 1% × (share price) × (option delta) × (number of options held)], expressed in millions; see Core and Guay (1999) for the computation of the option delta
DTAX	Residual from the following regression estimated by year and 2-digit SIC code (Frank et al 2009): $PERMDIFF_{it} = \beta_0 + \beta_1(1/AT_{it-1}) + \beta_2 INTANG_{it} + \beta_3 UNCON_{it} + \beta_4 MI_{it} + \beta_5 CSTE_{it} + \beta_6 \Delta NOL_{it} + \beta_7 LAGPERM_{it} + \varepsilon_{it}$
EQUITY	Dollar value of accelerated or continued vesting of stock options under CEO severance agreement/Total direct compensation
FOR	Foreign income(PIFO)/Total assets(AT)
FORINC	Indicator variable equal to 1 if foreign income (PIFO) is present, 0 otherwise
GETR	Total income tax expense (TXT)/Pretax income (PI) over the 3-year period from year *t* to year *t*+2
INCENT	Indicator variable equal to 1 if a CEO receives incentive compensation, 0 otherwise
INTANG	Intangible assets(INTAN)/beginning of year total assets(AT)
LAGPERM	PERMDIFF in year *t-1*
LEV	Long-term debt(DLTT)/beginning of year total assets(AT)
MI	Minority interest income(MII)/beginning of year total assets(AT)
NOL	Indicator variable equal to 1 if a net operating loss carryforward (TLFC) is present, 0 otherwise
ΔNOL	Change in net operating loss carryforward(TLCF)/beginning of year total assets(AT)
PERMDIFF	Total book-tax differences - temporary book-tax differences = [PI - (TXFED + TXFO)/.35] - TXDI/.35, scaled by beginning of year total assets(AT)
RD	Research & development expenses(XRD)/Net sales(SALE)
ROA	Pretax income(PI)/beginning of year total assets(AT)
SEV	Indicator variable equal to 1 if a severance agreement is in effect, 0 otherwise
SHELTER	Indicator variable equal to 1 for firms in the top quintile based on the predicted probability of tax sheltering model from Wilson (2009): $SHELTER_{it} = -4.30 + 6.63 \times BTD_{it} - 1.72 \times LEV_{it} + 0.66 \times SIZE_{it} + 2.26 \times ROA_{it} + 1.62 \times FORINC_{it} + 1.56 \times RD_{it}$
SIZE	Log (total assets(AT))
TOTAL	Dollar value of total payments under CEO severance agreement/Total direct compensation

UNCON	Income reported under the equity method(ESUB)/beginning of year total assets(AT)
VEGA	The sensitivity of the change in the Black–Scholes option value for a 1% change in stock return volatility, multiplied by the number of options in the CEO's portfolio (see Core and Guay 1999), expressed in millions
VOL	Standard deviation of prior year daily returns
ZSCORE	$1.2\left(\frac{\text{Current Assets} - \text{Current Liabilities}}{\text{Total Assets}}\right) + 1.4\left(\frac{\text{Retained Earnings}}{\text{Total Assets}}\right) + 3.3\left(\frac{\text{EBIT}}{\text{Total Assets}}\right) + 0.6\left(\frac{\text{Market Value of Equity}}{\text{Total Assets}}\right) + .999\left(\frac{\text{Sales}}{\text{Total Assets}}\right)$

Unless otherwise defined in this appendix, abbreviations are from Compustat.

APPENDIX B: Severance Agreement Disclosure Example

Intuit Inc.
Excerpt from DEF 14A
FYE 7/31/12

Potential Payments Upon Termination of Employment or Change in Control

Described below are the individual arrangements Intuit has entered into with each of our Named Executive Officers and the estimated payments and benefits that would be provided under these arrangements, assuming that the executive's employment terminated under certain circumstances as of July 31, 2012, and using the closing price of our common stock on July 31, 2012, the last trading day of fiscal year 2012 ($58.02 per share).

Intuit does not provide for any special severance payments or acceleration of equity upon a Named Executive Officer's termination for cause or resignation without good reason. Under the NQDCP, participants in the plan will be eligible to receive their vested benefits under the plan upon termination of employment for any reason, and they will be eligible to receive discretionary company contributions and the related earnings upon the participant's disability, death or a change in control of Intuit, as described above under "Non-Qualified Deferred Compensation for Fiscal Year 2012."

Brad D. Smith

On October 1, 2007, Intuit entered into a new employment agreement with Mr. Smith, which superseded Mr. Smith's prior September 6, 2005 employment agreement and provided that Mr. Smith become the President and Chief Executive Officer of Intuit, effective January 1, 2008. On December 1, 2008, Intuit amended Mr. Smith's employment agreement in order to satisfy the technical documentary requirements of Section 409A of the Internal Revenue Code ("Section 409A").

Mr. Smith can terminate his employment agreement at any time upon written notice to the Board. Intuit may terminate Mr. Smith's employment upon the written recommendation of the Board. Under the circumstances described below, Mr. Smith is entitled to receive severance benefits subject to his execution of a valid and binding release agreement.

If Intuit terminates Mr. Smith other than for "Cause" (which includes gross negligence, willful misconduct, fraud and certain criminal convictions) or if Mr. Smith terminates his employment for "Good Reason" (which includes relocation or a reduction in duties, title or compensation), Mr. Smith is entitled to (1) a single lump sum severance payment equal to 12 months of his then-current salary and 100% of his then-current target bonus, (2) vesting of a pro rata portion of the shares issuable under the 260,000 stock options granted in February 2008, based on the portion of time he has provided services over the full five year vesting period, and (3) vesting of a pro rata portion of the shares issuable under the 130,000 RSUs granted in February 2008, based on the portion of time he has provided services over the full four year vesting period.

The estimated payments or benefits which would have been paid to Mr. Smith in the event of his termination on July 31, 2012 under the specified circumstances are as follows:

Brad D. Smith Incremental Amounts Payable Upon Termination Event	**Termination Without Cause or by Mr. Smith for Good Reason ($)**	**Termination Without Cause After CIC ($)**	**Death or Disability ($)**
Total Cash Severance	2,242,500	2,242,500	—
Total Benefits and Perquisites	—	—	—
Total Severance	2,242,500	2,242,500	—
Gain on Accelerated Stock Options	2,883,725	10,266,569	15,386,699
Value of Accelerated Restricted Stock Units	12,624,714	17,874,805	35,636,870
Total Value of Accelerated Long-Term Incentives	15,508,439	28,141,374	51,023,569
Total Severance, Benefits & Accelerated Equity	**17,750,939**	**30,383,874**	**51,023,569**

Table 1

Panel A: Descriptive Statistics for Large Sample of S&P 1500 from 2006-2012

Variable	N	Min	Max	Mean	Std Dev	25th Pctl	50th Pctl	75th Pctl
GETR	4,141	0.00	1.00	0.31	0.11	0.25	0.33	0.37
CETR	4,141	0.00	1.00	0.27	0.13	0.18	0.27	0.35
DTAX	4,141	-0.63	4.74	0.00	0.11	-0.03	-0.01	0.01
SHELTER	4,141	0.00	1.00	0.20	0.40	0.00	0.00	0.00
SEV	4,141	0.00	1.00	0.69	0.46	0.00	1.00	1.00
CBONUS	4,141	0.00	1.28	0.26	0.17	0.14	0.23	0.34
DELTA	4,141	0.00	391,701.32	1,194.57	11,395.23	105.11	249.80	627.24
VEGA	4,141	0.00	8,833.67	166.10	320.28	17.87	68.16	188.29
SIZE	4,141	3.89	12.72	7.56	1.57	6.44	7.42	8.57
ROA	4,141	0.00	1.59	0.13	0.11	0.07	0.11	0.17
LEV	4,141	0.00	2.59	0.19	0.22	0.01	0.16	0.28
FOR	4,141	-0.17	0.96	0.03	0.05	0.00	0.01	0.05
CAPINT	4,141	0.00	0.94	0.24	0.20	0.08	0.17	0.32
RD	4,141	0.00	0.25	0.00	0.01	0.00	0.00	0.00
NOL	4,141	0.00	1.00	0.53	0.50	0.00	1.00	1.00
ZSCORE	4,141	-19.88	11.41	3.15	1.64	2.16	3.01	3.96
VOL	4,141	0.00	0.20	0.03	0.01	0.02	0.02	0.03

All variables are as defined in Appendix A.

Panel B: Test for differences in mean values

	No Severance (N = 1,302)		Severance (N = 2,839)		Diff	
Variable	Mean	Std Dev	Mean	Std Dev	t Value	
GETR	0.315	0.11	0.306	0.11	2.45	**
CETR	0.275	0.13	0.267	0.13	1.95	*
DTAX	-0.005	0.07	0.004	0.13	-2.35	**
SHELTER	0.187	0.39	0.206	0.40	-1.45	
CBONUS	0.252	0.18	0.257	0.16	-0.91	
DELTA	2,403.400	19,946.80	640.200	2,460.00	4.63	***
VEGA	160.600	415.60	168.600	265.40	-0.74	
SIZE	7.468	1.62	7.609	1.54	-2.68	***
ROA	0.147	0.11	0.129	0.11	4.72	***
LEV	0.172	0.22	0.202	0.22	-4.15	***
FOR	0.032	0.05	0.033	0.06	-0.51	
CAPINT	0.265	0.22	0.222	0.19	6.42	***
RD	0.004	0.01	0.003	0.01	1.63	
NOL	0.456	0.50	0.560	0.50	-6.26	***
ZSCORE	3.427	1.72	3.021	1.59	7.43	***
VOL	0.025	0.01	0.026	0.01	-3.99	***

All variables are as defined in Appendix A. *, **, *** indicate significance (one-tailed for predicted signs, two-tailed otherwise) at the 10%, 5%, 1% level.

Table 2

Pearson and Spearman Correlation Coefficients for Large Sample of S&P 1500 from 2006-2012

	GETR	*CETR*	*DTAX*	*SHELTER*	*SEV*	*CBONUS*	*DELTA*	*VEGA*	*SIZE*	*ROA*	*LEV*	*FOR*	*CAPINT*	*RD*	*NOL*	*ZSCORE*	*VOL*
GETR		**0.43**	**-0.24**	**-0.18**	**-0.04**	**0.03**	-0.02	**-0.08**	**-0.03**	**0.06**	**0.06**	**-0.27**	**0.11**	**-0.13**	**-0.10**	**0.16**	**-0.05**
CETR	**0.40**		**-0.16**	**-0.13**	**-0.03**	**-0.03**	-0.01	-0.02	-0.02	**0.06**	**-0.04**	**-0.07**	**-0.06**	**-0.10**	**-0.08**	**0.20**	**-0.08**
DTAX	**-0.36**	**-0.17**		**0.13**	**0.04**	**0.05**	0.02	**0.05**	**0.05**	**0.12**	-0.01	**0.05**	**-0.03**	**0.15**	**0.04**	**-0.04**	0.01
SHELTER	**-0.22**	**-0.15**	**0.26**		0.02	0.02	**0.11**	**0.39**	**0.59**	**0.08**	**-0.06**	**0.29**	0.00	**-0.10**	**0.06**	**-0.05**	**-0.16**
SEV	**-0.05**	**-0.04**	**0.03**	0.02		0.01	**-0.07**	0.01	**0.04**	**-0.07**	**0.06**	0.01	**-0.10**	-0.03	**0.10**	**-0.11**	**0.06**
CBONUS	**0.04**	-0.02	**0.05**	0.01	**0.03**		-0.02	**-0.05**	**0.04**	**0.09**	**0.04**	0.02	-0.01	**-0.06**	**-0.05**	**0.06**	-0.02
DELTA	**-0.04**	-0.01	**0.22**	**0.30**	**-0.11**	-0.01		**0.55**	**0.13**	**0.03**	0.00	**0.05**	**-0.03**	-0.02	**0.03**	0.01	**-0.04**
VEGA	**-0.15**	-0.01	**0.29**	**0.37**	**0.05**	**-0.09**	**0.59**		**0.47**	**0.03**	**0.03**	**0.15**	**-0.04**	**-0.10**	**0.08**	**-0.03**	**-0.20**
SIZE	**-0.10**	**-0.04**	**0.35**	**0.55**	**0.06**	**0.04**	**0.41**	**0.55**		**-0.17**	**0.26**	**0.17**	**0.20**	**-0.35**	**0.07**	**-0.21**	**-0.34**
ROA	**0.09**	**0.11**	**0.20**	**0.09**	**-0.11**	**0.11**	**0.21**	0.02	**-0.12**		**-0.08**	**0.24**	**-0.08**	**0.10**	**-0.12**	**0.57**	-0.02
LEV	0.02	**-0.04**	**0.06**	0.00	**0.09**	**0.07**	**0.05**	**0.15**	**0.42**	**-0.25**		**-0.03**	**0.19**	**-0.15**	**0.10**	**-0.31**	**-0.06**
FOR	**-0.39**	**-0.08**	**0.24**	**0.36**	**0.03**	-0.02	**0.16**	**0.23**	**0.26**	**0.14**	-0.02		**-0.13**	**-0.03**	**0.11**	**0.08**	**-0.03**
CAPINT	**0.10**	-0.02	0.02	-0.01	**-0.08**	0.02	0.02	0.00	**0.20**	**-0.06**	**0.25**	**-0.18**		**-0.16**	**-0.14**	**-0.11**	0.01
RD	**-0.32**	**-0.12**	**-0.12**	**-0.05**	-0.01	**-0.09**	**-0.11**	-0.02	**-0.31**	-0.01	**-0.22**	**0.23**	**-0.30**		0.01	**-0.10**	**0.13**
NOL	**-0.13**	**-0.11**	**0.04**	**0.06**	**0.10**	**-0.03**	-0.01	**0.07**	**0.09**	**-0.12**	**0.11**	**0.18**	**-0.13**	**0.08**		**-0.14**	0.00
ZSCORE	**0.15**	**0.24**	**0.09**	**-0.05**	**-0.14**	**0.03**	**0.13**	**-0.05**	**-0.26**	**0.64**	**-0.45**	**0.05**	**-0.06**	**-0.04**	**-0.13**		**-0.08**
VOL	0.00	**-0.09**	**-0.13**	**-0.20**	**0.06**	**-0.03**	**-0.29**	**-0.29**	**-0.41**	**-0.10**	**-0.16**	**-0.10**	**-0.03**	**0.11**	0.00	**-0.06**	

Upper (lower) diagonal reports Pearson (Spearman) correlations. Correlations that are significant at $p < 0.10$ are in bold. All variables are as defined in Appendix A.

Table 3
Results for OLS Regression of Presence of Severance Agreement on ETR

		GETR				*CETR*			
		(1)		(2)		(3)		(4)	
Variables	Pred Sign	Parameter Estimates	t Value	Parameter Estimates	t Value	Parameter Estimates	t Value	Parameter Estimates	t Value
intercept		0.2492 ***	12.74	0.2859 ***	18.71	0.2368 ***	7.01	0.2655 ***	13.91
SEV	-	-0.0009	-0.27	-0.0016	-0.47	-0.0045	-0.99	-0.0029	-0.66
CBONUS	-	0.0041	0.46	0.0059	0.64	-0.0291 ***	-2.39	-0.0374 ***	-3.14
DELTA	?	0.000000	1.09	0.000000 **	2.34	0.000000	1.18	0.000000	1.04
VEGA	?	-0.000020 ***	-3.58	-0.000021 ***	-3.72	-0.000017 **	-2.40	-0.000017 **	-2.44
SIZE	?	-0.0007	-0.42	0.0004	0.29	0.0024	1.29	0.0022	1.20
ROA	?	0.0061	0.27	0.0503 **	2.15	-0.0549 **	-2.37	-0.0493 **	-2.09
LEV	?	0.0318 ***	4.07	0.0387 ***	4.62	0.0068	0.66	0.0124	1.17
FOR	-	-0.4399 ***	-7.59	-0.5484 ***	-9.03	-0.1590 ***	-3.00	-0.2061 ***	-3.97
CAPINT	-	0.0026	0.28	0.0330 ***	3.67	-0.0489 ***	-3.90	-0.0553 ***	-4.61
RD	-	-0.7879 ***	-3.39	-0.9450 ***	-4.17	-0.9407 ***	-5.31	-0.9731 ***	-5.44
NOL	-	-0.0068 **	-2.11	-0.0067 **	-2.01	-0.0156 ***	-3.68	-0.0168 ***	-3.91
ZSCORE	?	0.0122 ***	7.97	0.0108 ***	7.20	0.0144 ***	7.77	0.0171 ***	8.92
VOL	?	-0.5803 ***	-3.05	-0.3526 **	-2.10	-0.6037 ***	-2.68	-0.6411 ***	-3.36
Industry fixed effects		Yes		No		Yes		No	
Year fixed effects		Yes		No		Yes		No	
R^2		0.200		0.140		0.098		0.069	
Adj R^2		0.194		0.137		0.092		0.066	
N		4,141		4,141		4,141		4,141	

All variables are as defined in Appendix A. *, **, *** indicate significance (one-tailed for predicted signs, two-tailed otherwise) at the 10%, 5%, 1% level.

Table 4

Results for Logit Regression of Presence of Severance Agreement on SHELTER

Variables	Pred Sign	(1) Parameter Estimates		Wald Chi-Square	(2) Parameter Estimates		Wald Chi-Square
intercept		-1.8281		1.1566	-1.7185	***	68.7154
SEV	+	0.0053		0.0025	0.0222		0.0538
CBONUS	+	0.7219	***	7.0124	0.8447	***	11.0094
DELTA	?	0.000062	***	16.3595	0.000056	***	14.3161
VEGA	?	0.004000	***	309.4372	0.004160	***	361.0412
CAPINT	?	-0.1542		0.2927	0.0910		0.1737
NOL	?	0.1271		1.8743	0.1703	*	3.6869
ZSCORE	?	-0.0560	*	3.1154	-0.0812	***	8.8833
VOL	?	-32.8218	***	29.1593	-21.1987	***	20.5240
Industry fixed effects		Yes			No		
Year fixed effects		Yes			No		
Psuedo R^2		0.235			0.185		
N		4,141			4,141		

All variables are as defined in Appendix A. *, **, *** indicate significance (one-tailed for predicted signs, two-tailed otherwise) at the 10%, 5%, 1% level.

Table 5

Results for OLS Regression of Presence of Severance Agreement on DTAX

Variables	Pred Sign	(1) Parameter Estimates	t Value	(2) Parameter Estimates	t Value
intercept		-0.0776 ***	-3.18	-0.0941 ***	-4.16
SEV	+	0.0068 ***	2.42	0.0076 ***	2.44
CBONUS	+	0.0292 ***	2.51	0.0301 ***	2.42
DELTA	?	0.000000	0.32	0.000000	0.36
VEGA	?	0.000000	-0.23	-0.000001	-0.27
SIZE	?	0.0097 ***	4.31	0.0094 ***	4.39
ROA	?	0.2131 ***	4.77	0.2037 ***	4.67
LEV	?	-0.0210 *	-1.86	-0.0209 *	-1.89
FOR	?	-0.0192	-0.28	-0.0204	-0.31
CAPINT	?	-0.0011	-0.14	-0.0082	-1.00
RD	?	1.5277	1.06	1.5396	1.07
NOL	?	0.0086 ***	2.61	0.0083 **	2.48
ZSCORE	?	-0.0089 ***	-3.21	-0.0081 ***	-3.19
VOL	?	0.3865 **	2.07	0.2826 **	2.10
Industry fixed effects		Yes		No	
Year fixed effects		Yes		No	
R^2		0.066		0.063	
Adj R^2		0.059		0.060	
N		4,141		4,141	

All variables are as defined in Appendix A. *, **, *** indicate significance (one-tailed for predicted signs, two-tailed otherwise) at the 10%, 5%, 1% level.

Table 6
Descriptive Statistics for Small Sample of S&P 500

Variable	N	Min	Max	Mean	Std Dev	25th Pctl	50th Pctl	75th Pctl
GETR	467	0.00	0.70	0.29	0.10	0.23	0.30	0.36
CETR	467	0.00	0.87	0.26	0.11	0.19	0.27	0.33
DTAX	467	-0.21	0.28	0.01	0.04	-0.01	0.01	0.02
SHELTER	467	0.00	1.00	0.20	0.40	0.00	0.00	0.00
TOTAL	467	0.00	12.17	1.04	1.38	0.00	0.54	1.59
CASH	467	0.00	6.31	0.43	0.54	0.00	0.28	0.69
EQUITY	467	0.00	11.83	0.61	1.08	0.00	0.00	0.96
CBONUS	467	0.00	0.98	0.25	0.16	0.15	0.21	0.31
DELTA	467	0.00	72,776.98	1,427.75	5,246.50	247.55	524.33	1,000.92
VEGA	467	0.00	2,600.03	357.77	390.07	82.88	245.69	513.93
SIZE	467	6.73	12.72	9.38	1.15	8.48	9.22	10.20
ROA	467	0.00	0.57	0.14	0.09	0.08	0.12	0.18
LEV	467	0.00	1.48	0.23	0.18	0.12	0.20	0.31
FOR	467	-0.07	0.42	0.05	0.06	0.00	0.03	0.07
CAPINT	467	0.01	0.93	0.25	0.22	0.09	0.17	0.36
RD	467	0.00	0.01	0.00	0.00	0.00	0.00	0.00
NOL	467	0.00	1.00	0.57	0.50	0.00	1.00	1.00
ZSCORE	467	-10.08	10.72	3.11	1.69	2.04	2.95	3.83
VOL	467	0.01	0.06	0.02	0.01	0.01	0.02	0.02

All variables are as defined in Appendix A.

Table 7
Pearson and Spearman Correlation Coefficients for Small Sample of S&P 500

	GETR	*CETR*	*DTAX*	*SHELTER*	*TOTAL*	*CASH*	*EQUITY*	*CBONUS*	*DELTA*	*VEGA*	*SIZE*	*ROA*	*LEV*	*FOR*	*CAPINT*	*RD*	*NOL*	*ZSCORE*	*VOL*
GETR		**0.49**	**-0.43**	**-0.11**	0.00	0.05	-0.03	**0.10**	-0.04	-0.05	0.04	**0.15**	0.03	**-0.29**	**0.32**	**-0.23**	**-0.13**	**0.20**	-0.06
CETR	**0.52**		**-0.33**	**-0.12**	-0.05	0.03	**-0.08**	0.01	-0.01	-0.01	0.00	**0.15**	**-0.09**	**-0.15**	**0.09**	**-0.11**	**-0.13**	**0.25**	**-0.14**
DTAX	**-0.39**	**-0.25**		0.05	0.03	-0.05	0.06	0.03	0.00	-0.05	**-0.24**	**0.34**	-0.03	**0.40**	**-0.21**	**0.20**	-0.04	**0.21**	**0.15**
SHELTER	**-0.17**	**-0.14**	0.02		0.01	**-0.10**	0.06	0.02	0.04	**0.25**	**0.57**	0.02	**-0.17**	**0.32**	0.02	**-0.15**	-0.03	-0.07	**-0.12**
TOTAL	-0.05	-0.02	**-0.08**	-0.02		**0.68**	**0.93**	**0.13**	0.03	0.07	-0.06	0.01	0.07	-0.01	-0.04	-0.05	0.05	-0.02	0.04
CASH	0.01	0.03	**-0.13**	**-0.08**	**0.84**		**0.37**	**0.15**	-0.01	0.06	-0.07	**-0.10**	**0.12**	**-0.09**	-0.05	-0.06	0.04	**-0.08**	-0.01
EQUITY	-0.07	-0.05	0.01	0.02	**0.87**	**0.54**		**0.09**	0.04	0.06	-0.04	0.06	0.03	0.04	-0.03	-0.03	0.04	0.01	0.05
CBONUS	0.07	-0.06	-0.02	0.07	**0.11**	**0.14**	**0.08**		**0.10**	-0.03	0.02	**0.15**	-0.02	**0.10**	0.02	**-0.11**	**-0.11**	**0.12**	0.01
DELTA	-0.07	-0.04	0.06	**0.22**	0.01	-0.05	0.04	0.05		0.06	**0.10**	-0.03	-0.01	-0.05	0.02	-0.05	0.00	-0.02	0.04
VEGA	**-0.13**	0.00	0.07	**0.17**	0.00	0.02	0.00	**-0.08**	**0.66**		**0.33**	-0.05	-0.02	0.05	**-0.09**	**-0.11**	**0.16**	**-0.10**	**-0.19**
SIZE	-0.03	-0.04	**-0.24**	**0.52**	-0.03	-0.03	-0.04	0.07	**0.26**	**0.29**		**-0.36**	0.04	0.01	**0.24**	**-0.32**	**-0.09**	**-0.38**	**-0.31**
ROA	**0.17**	**0.18**	**0.37**	0.01	**-0.14**	**-0.18**	-0.04	**0.08**	**0.08**	-0.05	**-0.38**		**-0.11**	**0.39**	**-0.10**	0.02	**-0.13**	**0.68**	0.07
LEV	-0.05	-0.04	**-0.08**	**-0.16**	**0.12**	**0.15**	0.07	0.00	0.03	0.06	**0.12**	**-0.21**		**-0.16**	**0.12**	-0.06	**0.09**	**-0.28**	**-0.11**
FOR	**-0.46**	**-0.23**	**0.35**	**0.30**	-0.04	**-0.08**	-0.03	-0.01	**0.11**	**0.12**	-0.02	**0.31**	**-0.17**		**-0.14**	**0.17**	0.04	**0.16**	**0.12**
CAPINT	**0.31**	**0.11**	**-0.18**	0.05	**-0.08**	-0.08	-0.06	**0.09**	0.03	-0.05	**0.21**	-0.05	**0.16**	**-0.24**		**-0.22**	**-0.16**	**-0.09**	0.07
RD	**-0.48**	**-0.28**	**0.18**	-0.05	-0.03	-0.04	-0.04	**-0.13**	**-0.13**	0.00	**-0.26**	0.05	-0.05	**0.41**	**-0.35**		0.06	**-0.13**	0.08
NOL	**-0.16**	**-0.16**	-0.01	-0.03	0.05	0.07	0.03	-0.06	0.02	**0.10**	-0.06	**-0.09**	**0.09**	**0.12**	**-0.13**	**0.16**		**-0.13**	**0.08**
ZSCORE	**0.21**	**0.25**	**0.34**	-0.07	**-0.12**	**-0.15**	-0.05	0.05	0.02	-0.06	**-0.44**	**0.73**	**-0.33**	**0.18**	-0.03	0.03	**-0.09**		-0.05
VOL	-0.06	**-0.17**	**0.11**	**-0.11**	0.00	-0.04	0.04	0.02	-0.05	**-0.15**	**-0.26**	0.00	**-0.19**	0.07	-0.01	0.06	**0.08**	-0.05	

Upper (lower) diagonal reports Pearson (Spearman) correlations. Correlations that are significant at $p < 0.10$ are in bold. All variables are as defined in Appendix A.

Table 8
Results for OLS Regression of Value of Severance Agreement on ETR

		GETR								*CETR*							
		(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
Variables	Pred Sign	Parameter Estimates	t Value	Parameter Estimates	t Value	Parameter Estimates	t Value	Parameter Estimates	t Value	Parameter Estimates	t Value	Parameter Estimates	t Value	Parameter Estimates	t Value	Parameter Estimates	t Value
intercept		0.1110 *	1.87	0.1301 **	2.18	0.0964	1.61	0.1110 *	1.83	0.1603 **	2.10	0.2015 ***	2.68	0.1397 *	1.85	0.1740 **	2.32
TOTAL	-	-0.0009	-0.37	0.0004	0.13					-0.0032	-0.93	-0.0023	-0.66				
CASH	+					0.0148 **	1.98	0.0168 **	2.06					0.0189 **	2.28	0.0215 ***	2.63
EQUITY	-					-0.0064 **	-2.06	-0.0055 *	-1.64					-0.0110 ***	-2.77	-0.0107 ***	-2.71
CBONUS	-	0.0371	1.40	0.0453	1.52	0.0302	1.13	0.0386 *	1.30	0.0024	0.06	-0.0104	-0.25	-0.0074	-0.18	-0.0200	-0.49
DELTA	?	-0.000002 *	-1.66	-0.000001 *	-1.30	-0.000001 *	-1.66	-0.000001	-1.27	0.000000	-0.07	0.000000	-0.31	0.000000	0.04	0.000000	-0.20
VEGA	?	-0.000006	-0.71	-0.000007	-0.72	-0.000007	-0.86	-0.000008	-0.86	0.000000	-0.01	0.000001	0.09	-0.000002	-0.15	-0.000001	-0.05
SIZE	?	0.0128 **	2.47	0.0099 **	1.94	0.0140 ***	2.70	0.0112 **	2.19	0.0092	1.46	0.0065	1.00	0.0108 *	1.75	0.0084	1.31
ROA	?	0.2197 ***	4.38	0.2754 ***	4.60	0.2349 ***	4.64	0.2911 ***	4.83	0.1204	1.57	0.1388 **	1.99	0.1417 *	1.86	0.1613 **	2.32
LEV	?	0.0003	0.02	-0.0041	-0.16	-0.0028	-0.12	-0.0072	-0.27	-0.0358	-1.49	-0.0434	-1.62	-0.0402 *	-1.69	-0.0479 *	-1.79
FOR	-	-0.5045 ***	-6.75	-0.6364 ***	-7.54	-0.4987 ***	-6.64	-0.6301 ***	-7.36	-0.3132 ***	-2.79	-0.4224 ***	-3.57	-0.3050 ***	-2.72	-0.4133 ***	-3.49
CAPINT	-	0.0581 **	2.33	0.1238 ***	4.54	0.0585 **	2.37	0.1253 ***	4.62	-0.0370	-1.23	0.0409	1.11	-0.0363	-1.22	0.0430	1.18
RD	-	-2.9255	-0.26	-8.0459	-0.60	-2.0299	-0.18	-7.1460	-0.53	4.0461	0.25	-0.9663	-0.06	5.3039	0.32	0.3318	0.02
NOL	-	0.0055	0.67	-0.0002	-0.03	0.0057	0.70	0.0001	0.01	-0.0038	-0.35	-0.0116	-1.04	-0.0035	-0.32	-0.0111	-1.01
ZSCORE	?	0.0086 ***	2.76	0.0082 **	2.14	0.0089 ***	2.88	0.0084 **	2.22	0.0084	1.63	0.0140 ***	2.99	0.0088 *	1.73	0.0144 ***	3.08
VOL	?	-0.6625	-1.04	-0.2512	-0.37	-0.5803	-0.91	-0.1657	-0.24	-0.9072	-0.98	-1.7013 *	-1.77	-0.7917	-0.85	-1.5780	-1.64
Industry fixed effects		Yes		No		Yes		No		Yes		No		Yes		No	
Year fixed effects		Yes		No		Yes		No		Yes		No		Yes		No	
R^2		0.379		0.286		0.385		0.293		0.218		0.139		0.228		0.151	
Adj R^2		0.349		0.265		0.355		0.271		0.181		0.114		0.190		0.124	
N		467		467		467		467		467		467		467		467	

All variables are as defined in Appendix A. *, **, *** indicate significance (one-tailed for predicted signs, two-tailed otherwise) at the 10%, 5%, 1% level.

Table 9

Results for Logit Regression of Value of Severance Agreement on SHELTER

Variables	Pred Sign	(1) Parameter Estimates	Wald Chi-Square	(2) Parameter Estimates	Wald Chi-Square	(3) Parameter Estimates	Wald Chi-Square	(4) Parameter Estimates	Wald Chi-Square
intercept		1.8021	0.81	-0.9984 *	3.32	2.0654	1.05	-0.6533	1.37
TOTAL	+	0.0357	0.15	0.0059	0.00				
CASH	-					-1.0854 ***	9.96	-1.0260 ***	9.65
EQUITY	+					0.3084 ***	5.72	0.2660 **	4.98
CBONUS	+	0.6175	0.53	0.3913	0.25	1.1285	1.59	0.8066	0.96
DELTA	?	0.000033	2.27	0.000017	0.73	0.000030	1.91	0.000013	0.39
VEGA	?	0.001360 ***	18.21	0.001330 ***	20.11	0.001450 ***	19.22	0.001420 ***	22.02
CAPINT	?	1.6690 **	4.54	0.3637	0.45	1.4452 *	3.32	0.1954	0.13
NOL	?	-0.5416 **	4.32	-0.3387	1.86	-0.5609 **	4.44	-0.3660	2.08
ZSCORE	?	-0.0407	0.18	-0.1013	1.93	-0.0983	1.09	-0.1425 *	3.67
VOL	?	-61.2019 **	5.64	-33.2090	2.54	-67.2418 **	6.44	-36.6994 *	2.98
Industry fixed effects		Yes		No		Yes		No	
Year fixed efects		Yes		No		Yes		No	
Pseudo R^2		0.151		0.082		0.185		0.113	
N		467		467		467		467	

All variables are as defined in Appendix A. *, **, *** indicate significance (one-tailed for predicted signs, two-tailed otherwise) at the 10%, 5%, 1% level.

Table 10

Results for OLS Regression of Value of Severance Agreement on DTAX

Variables	Pred Sign	(1) Parameter Estimates	t Value	(2) Parameter Estimates	t Value	(3) Parameter Estimates	t Value	(4) Parameter Estimates	t Value
intercept		0.0244	0.99	0.0162	0.66	0.0272	1.08	0.7800	1.08
TOTAL	+	0.0009	0.94	0.0006	0.64				
CASH	-					-0.0020	-0.71	-0.0022	-0.70
EQUITY	+					0.0019 *	1.40	0.0016	1.15
CBONUS	+	-0.0072	-0.64	-0.0063	-0.56	-0.0059	-0.52	-0.0051	-0.46
DELTA	?	0.000000	1.30	0.000000	1.45	0.000000	1.24	0.000000	1.41
VEGA	?	0.000001	0.29	0.000001	0.24	0.000001	0.35	0.000001	0.29
SIZE	?	-0.0041 *	-1.96	-0.0035 *	-1.67	-0.0043 **	-2.07	-0.0037 *	-1.76
ROA	?	0.0549 *	1.93	0.0532 *	1.82	0.0521 *	1.79	0.0505 *	1.69
LEV	?	0.0157 *	1.65	0.0191 **	1.99	0.0163 *	1.70	0.0196 **	2.02
FOR	?	0.2306 ***	3.99	0.2200 ***	3.84	0.2295 ***	3.96	0.2190 ***	3.80
CAPINT	?	-0.0116	-1.22	-0.0241 **	-2.22	-0.0117	-1.23	-0.0243 **	-2.24
RD	?	4.3654	1.27	4.8652	1.35	4.1993	1.22	4.7136	1.31
NOL	?	-0.0072 **	-2.30	-0.0067 **	-2.18	-0.0073 **	-2.31	-0.0068 **	-2.19
ZSCORE	?	0.0006	0.39	0.0013	0.77	0.0006	0.36	0.0012	0.75
VOL	?	0.5864	1.34	0.5803	1.50	0.5712	1.29	0.5659	1.44
Industry fixed effects		Yes		No		Yes		No	
Year fixed effects		Yes		No		Yes		No	
R^2		0.295		0.270		0.297		0.271	
Adj R^2		0.262		0.249		0.262		0.248	
N		467		467		467		467	

All variables are as defined in Appendix A. *, **, *** indicate significance (one-tailed for predicted signs, two-tailed otherwise) at the 10%, 5%, 1% level.