CEO SERPs: Are they related to firm risk and who approves them?

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Colin D. Reid
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ABSTRACT

This paper investigates whether CEO supplemental executive retirement plans (SERPs) are associated with firm risk. Sundaram and Yermack (2007) show that CEOs manage their firms more conservatively as their debt incentives increase. Using new executive compensation disclosures mandated by the SEC, I find a negative association between CEO SERPs and firm risk but only for unsheltered SERPs. I find that when a CEO SERP is protected by a lump sum payment or by a trust (i.e. sheltered), the negative association between SERPs and firm risk is greatly diminished and even eliminated in some models. Furthermore, I show that having a greater proportion of outside CEOs on a compensation committee when a new CEO is hired is associated with a higher likelihood of the new CEO having a SERP. These findings have implications for the method in which executives are compensated with retirement pay and address the SEC's growing concern about the link between compensation and firm risk management practices.

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CHAPTER I
INTRODUCTION

In recent years, the media and academics have paid more attention to compensation received by CEOs after they have exited the firm. This post-employment pay is often composed of various pay forms including supplemental executive retirement plans (SERP), severance packages, deferred compensation, and other perquisites.[1] Many "retirement packages" have made headlines both in good economic climates and bad. For example, the media reported that former Chairman and CEO of ExxonMobil Lee Raymond received a retirement package estimated to be worth close to $400 million subsequent to his retirement in 2005 (Mouawad 2006). The entire $400 million was not completely related to his retirement; however, he did receive a $98 million lump sum payment of his pension when he retired (SEC 2006). More recently, the CEO of Bank of America Ken Lewis announced his plans to step down at the end of 2009. According to the Wall Street Journal, his retirement package is currently worth $69.7 million (Fitzpatrick and Solomon 2009). Public pressure to limit CEO pay has increased, especially in light of recent bonuses received by executives at failing banks. The US Treasury ordered Ken Lewis to forego his salary and bonus for 2009 in part due to the magnitude of his retirement package.[2]

[1] Supplemental Executive Retirement Plans (SERPs) are defined benefit pension plans granted to executives. They are termed "supplemental" because they exceed the amounts covered by ERISA regulations. See section (2) for further explanation.

[2] Although Bank of America received TARP funds, the Treasury cannot access retirement packages negotiated prior to receipt of the funds.

The SEC has continued to increase disclosures surrounding executive compensation. The SEC's objective is not only to increase the disclosure of monetary amounts but require qualitative disclosures addressing compensation strategies and goals. These disclosures most often made in annual proxy filings provide a link between firm benchmarks or objectives and executive compensation methods. In December 2009 the SEC issued a release discussing enhanced disclosures concerning risk, compensation, and corporate governance (SEC 2009). The intent of the new disclosures is to provide users of this information not only with the context of compensation as it relates to company financial performance but also compensation and its affect on firm risk. The SEC outlines several specific objectives in the release including disclosures about "The relationship of a company's compensation policies and practices to risk management" as well as "Board leadership structure and the board's role in risk oversight."

The disclosures reflect growing concern about excessive risk-taking by executives and its impact on the various stakeholders of the firm. If compensation structures affect management choices and these choices affect firm characteristics, then firms and stakeholders must have an understanding of how CEO compensation structures impact firm risk. In particular, what affect do CEO SERPs have on firm risk? My study addresses this question.

Sundaram and Yermack (2007) provide one of the first empirical studies examining compensation owed to the CEO subsequent to service. They refer to these payments using Jensen and Meckling's (1976) term "inside debt". In effect, when a CEO has a defined benefit pension the executive is like a debt holder against the firm. Jensen and Meckling (1976) suggest that a firm can eliminate most of the agency costs of debt

by having the manager hold an equal portion of debt and equity. This would eliminate incentive to shift wealth from debt holders to stock holders. My paper extends this research by considering the probability that the debt holders (CEOs) will actually receive the full payment. Not all categories of debt are granted with the same rights. I investigate the differences in the debt (SERPs) granted to CEOs. Based on evidence presented in my paper, CEO SERPs have varying characteristics beyond size. These varying characteristics elicit different CEO choices that affect firm risk. Specifically, I find that in general SERPs are negatively associated with measures of firm risk. However, I also find that when the SERP payments are sheltered through an alternative payment form or trust, the negative association between SERPs and risk is attenuated. These findings indicate that not all inside debt has the same incentive effect. These findings also suggest that SERPs or other forms of inside debt only serve to reduce agency costs when they share structures similar to debt instruments (i.e. long term payments as opposed to lump sum or sheltered payments).

Because many of the SERPs are paid after retirement as life annuities, it is in the CEO's best interest to conservatively manage the firm so that the firm is healthy and the necessary cash exists to pay the SERP. While some argue that this form of payment is excessive and unrelated to performance, it does seem to encourage the CEO to consider the long term performance of the firm and operate with the interest of debt holders in mind. On the other hand, CEOs without SERPs may aggressively attempt to maximize the equity values of the firm to maximize their personal wealth. Traditionally, this aggressive behavior has been viewed as a benefit to shareholders. It seems that it is more common now for shareholders and regulators to question this aggressive behavior and

place more concern on the health of the firm in the long run. New SEC regulations require firms to explain the link between compensation and firm risk (SEC 2009). It is critical for companies, regulators, and investors to understand not only the impact of SERPs on firm risk but the impact of specific SERP characteristics.

Executive compensation has been a topic of study for corporate governance researchers in many different academic areas. The relation between pay and performance has attracted many researchers since Jensen and Meckling (1976) wrote about the implications and Jensen (1993) expressed his concerns about the shortcomings of CEO compensation. The research is only beginning to investigate the implications of post-employment pay. While this is not the first paper to investigate post-employment pay for CEOs, it is one of the first to investigate specific characteristics of SERPs using the newly mandated disclosures.

My study contributes to the literature by examining SERP magnitudes and characteristics and assessing their impact on firm risk. By identifying specific characteristics of SERPs and testing their associations with risk, I am able to evaluate the effectiveness of using this form of pay to reduce agency costs. The decisions and structures that led to the recent recession have caused regulators and investors to not only consider firm profitability but risk as well. If investors and regulators better understand the sources and incentives of firm risk, they can properly evaluate compensation packages.

In the second set of hypotheses outlined in this paper I make predictions concerning the likelihood of a CEO receiving a SERP based on corporate governance characteristics of the firm. It is also critical for stakeholders in the firm to not only

understand the association between SERPs and firm risk but the determinants of SERPs. I investigate compensation committee characteristics as well as other internal corporate governance characteristics and find evidence that having a higher percentage of CEOs serving on a firm's compensation committee increases the likelihood that the firm's CEO will have a SERP. This has implications for investors who wish to have a say on pay within the firm. Investors do not directly set CEO pay policies, but they can play an active role in determining the board structure of a firm. Understanding the influence that outside CEOs who sit on the board have on the compensation of a firm's CEO is important.

The next section contains a discussion of Agency Theory and its relation to SERPs as well as a brief background on the structure of SERPs. The following two sections develop the hypotheses concerning SERPs and firm risk followed by the hypotheses concerning the determinants of a SERP. The fifth section of paper contains the analysis. The paper concludes with a discussion of the results and implication of the findings.

CHAPTER II
AGENCY THEORY

In Jensen and Meckling's (1976) discussion of agency costs they address the costs that arise from a CEO only holding equity in the firm. This scenario aligns CEO interests with the interests of the shareholders by incentivizing the CEO to manage the firm with the stockholders in mind. By aligning the investment policy of the firm with the interest of the stockholders, this may redistribute wealth between debt holders and stockholders. Jensen and Meckling suggest that if the CEO were bound to hold a fraction of total debt that equaled the fraction of equity that he or she held then there would no longer be any incentive to redistribute wealth from debt holders to stockholders.

Corporations have not required CEOs to invest in debt instruments used by the firm; however, firms may use certain forms of compensation (referred to as inside debt) such as SERPs as a "debt-like" instrument to align CEO incentives with those of debt holders. If SERPs are structured as long term agreements for the CEO to receive an annuity stream in the future, then these plans are very similar to debt (i.e. the company *owes* the CEO payments in the future just as the firm owes bondholders payments in the future). If the SERP annuity is subject to forfeiture in the event of bankruptcy then the CEO will revise investment policy to ensure the stability of the firm. Jensen and Meckling would argue that these future payments would align CEO incentives with debt holders and reduce agency costs because there would be no threat of a redistribution of wealth between debt holders and stockholders. This appears to be an important mechanism for reducing agency costs and incentivizing a long-term focus as opposed to a quarter to quarter focus.

Sundram and Yermack (2007) provide evidence that inside debt does change CEO incentives and reduce agency costs. They argue that when a CEO holds only equity, he or she has incentive to tolerate excessive risk. The authors analyze firms from the S&P 500 from 1996-2002 and find that when a CEO's personal debt to equity ratio exceeds that of the firm's, then he or she manages more conservatively. Granting large SERPs encourages executives to manage conservatively in order to protect the future payments. The authors also find that CEOs are much more likely to retire once their pensions become fully payable. This paper is one of the first empirical papers to provide evidence of post-employment pay altering CEO behavior.

Kalyta (2009) measures the relation between retiring CEO pensions and abnormal accruals. Using a sample of 388 Fortune 1000 CEOs, he finds that retiring CEOs are more likely to manage earnings upward in the years immediately preceding retirement when the value of the SERP is impacted by performance. He does not find this result for SERPs that do not have a performance component. This is a unique finding that suggests not all SERPs are identical and that unique characteristics can change behavior. While the inside debt theory presented by Jensen and Meckling is supported empirically, what qualifies as inside debt may depend on the structure of the compensation. The structure of the SERP may have implications for the effectiveness of this form of compensation serving its purpose to reduce agency costs.

SERP Structure

My paper investigates differing characteristics of SERPs. First, I provide a background on the basic structure of SERPs. Companies may offer two primary types of

retirement plans to their executives – qualified and/or non-qualified plans.[3] Qualified plans are regulated by ERISA and the Internal Revenue Code. These plans are offered to most employees within a company and offer certain tax advantages. These plans are regulated by ERISA to provide protection of deferred compensation and fringe benefits for common employees (Kennedy 2002). Although not intended to safeguard the interests of executives, CEOs can participate in the programs as long as they follow the regulations. In order for CEOs to participate, the total level of retirement funds contributed to the plan cannot exceed regulated amounts. Because these amounts are somewhat limited in terms of CEO compensation, many companies have structured nonqualified executive compensation plans also known as supplemental executive retirement plans (SERPs).

A SERP does not receive the preferential tax treatment enjoyed by the qualified plans. However, there is no limit as to the amount that may be accumulated within the SERP. Under a *qualified* plan, an employee does not incur any tax liability for "receiving a vested and funded right to receive deferred compensation", and the employer gets a tax deduction for making a contribution to the trust (Kennedy 2002). Furthermore, these amounts are generally protected in the event of bankruptcy. Under a *nonqualified* plan or SERP, the employee does not incur a tax liability for the amounts contributed to the SERP, but the employer does not receive a tax deduction until distribution. Once the cash is distributed, the employee is taxed on the distributed amount. However, all deferred amounts must be unavailable to the employee or subject to "substantial risk of loss or

[3] See Gerakos (2007) for a thorough explanation of the "Institutional Background" of executive retirement plans.

forfeiture", otherwise the amounts become immediately taxable (Kennedy 2002). This is important for one primary reason as it relates to my study; SERPs must remain unfunded if the CEO wishes to avoid an immediate tax liability for the SERP. If amounts are set aside for payment to the CEO and not available to general creditors, then the SERP amounts may become taxable (Kennedy 2002; Clark and Forman 2004).

Prior literature in this area has been based on estimated SERP values due to limited disclosures. The SEC crafted new executive compensation disclosure regulations that became effective in 2007. The new regulations have significantly increased the nature and amount of data available to the public concerning executive compensation. Among many changes, the SEC now requires specific disclosures concerning executive retirement/pension agreements and severance agreements. These disclosures not only include negotiated amounts but the events that would trigger payment by the company.

The current body of research concerning retirement packages in the law, finance, management, and accounting literatures finds that SERPs are common although not universal for all firms. Bebchuk and Jackson (2005) find that 68% of the CEOs in their sample participated in a company sponsored pension plan. These plans had an *estimated* median actuarial net present value of $15 million ranging from a minimum of $3.3 million to a maximum of $73.3 million. Their research also indicates that the average CEO retirement package represents a very significant amount of an executive's lifetime pay – 35% (median) in their sample. Some research attempts to provide evidence in support of various compensation theories that provide determinants for the agreements. Very little research investigates the impact of these agreements on firm outcomes such as performance or risk.

Currently, the few papers in this area have only estimated SERP magnitudes. Furthermore, samples have been formed by searching for CEOs who have already exited the firm. Bebchuk and Jackson (2005) study a sample of CEOs who departed office during 2003 and 2004. They gathered information on total compensation and retirement pay from SEC filings and calculated estimated pension values. The authors conclude that SERPs have very little impact on performance during the tenure of the CEO. They argue that retirement pay does not affect performance because most of the retirement packages analyzed are a function of salary, not performance. Because pensions serve as a "salary-like" payment, the authors conclude that these pay packages have no impact on performance. The paper provides an excellent descriptive background of SERPs; however, the conclusions were reached based on compensation theory, not empirical testing.

One of the first empirical papers to investigate SERPs is Gerakos (2007). He investigates pensions to determine whether they are a function of managerial rent extraction or optimal contracting between boards of directors and CEOs and to determine the effectiveness of the 2007 SEC disclosures. He has a unique proprietary data set of 172 publicly traded firms as well as a data set consisting of S&P 500 firms. The proprietary data set was generated by a compensation consultant who surveyed companies and the retirement packages provided to executives. Gerakos finds the strongest evidence that optimal contracting determines the pension practices of large corporations, but he does find some support for the managerial power hypothesis. If the CEO is exercising undue influence over the firm then this suggests the need for an understanding of the governance structure surrounding these practices. He also predicts that the changes to the

disclosures regarding pensions in 2007 will have little impact on investors, because most of the needed information can be surmised from present disclosures. Wei and Yermack (2009) test stockholder and bondholder reactions subsequent to the disclosures in 2007 and find that markets did react significantly to the disclosures, counter to Gerakos (2007) expectations.

It is important to understand the structure of the SERP including the various tax regulations applicable to this form of compensation. Based on the brief description of the tax laws and some of the prior research, it is evident that SERPs can be arranged in various forms. Not only can the funding status vary from CEO to CEO but the payment options vary. Some SERPs are paid out over the course of retirement as an annuity and some are paid in a lump sum. These varying characteristics have not thoroughly been investigated in the literature in part due to the limited disclosures prior to 2007. Most of the models in prior research focuses on the amount of the SERP alone (Bebchuk and Jackson 2005; Sundaram and Yermack 2007). Accounting for the nuances of each SERP agreement will improve and clarify the extant research.

CHAPTER III
FIRM RISK HYPOTHESES DEVELOPMENT

Prospect Theory

Prospect theory offers an alternative explanation to expected utility theory for individual decision making. Consider an individual's choice given alternative options varying in risk. Often this is expressed as a lottery supplying different payouts based on a risky choice verses a safe choice. The choice could also consist of multiple alternatives with varying degrees of probabilities. In a risk neutral setting an individual will choose the option with the highest expected value. The choice will differ once risk aversion is introduced into the setting (Ross 2004; Carlson and Lazrak 2009). A risk averse individual seeks to maximize personal utility as opposed to choosing the option that results in the highest expected value (Davis and Holt 1993). However, Kahneman and Tversky (1979) find that "individuals tend to underweight outcomes that are merely probable in comparison with outcomes that are obtained with certainty" – the certainty effect of prospect theory.

CEO Decision Making

CEOs with SERPs have wealth that is promised to them with certainty as long as the firm does not enter bankruptcy. These CEOs still have equity in the firm, but the value of this equity largely depends on the performance of the firm as a result of investment choices by the CEO. Prospect theory predicts that these CEOs will underweight the outcomes associated with the equity and overweight the certainty of the SERP. That is to say that CEOs will act to manage the firm conservatively for the certainty of a large SERP even if that results in not maximizing the value of their own

equity holdings. For example, a CEO may have the opportunity to invest in two different projects that are mutually exclusive. If one is a risky project with a range of payoffs and the other a safe project with a range of payoffs, the incentive compensation is designed to incentivize the CEO to make the most profitable decision for shareholders. While the majority of executive compensation literature has examined CEO behavior related to pay received during his or her tenure, more recent research indicates that retirement pay may impact decision making as well (Bebchuk and Jackson 2005, Inderst and Mueller 2006, Sundaram and Yermack 2007, and Gerakos 2007). These papers have provided evidence that compensation contracted to be received subsequent to service could affect behavior during service. The decision concerning two mutually exclusive projects with varying payoff probabilities is now being made by an executive who not only has current cash and incentive pay but perhaps a large retirement package.

In general, a SERP is an unfunded, unguaranteed annuity to be paid throughout retirement. Because the amount is unfunded and unguaranteed, the SERP payments are subject to the performance of the firm at the time of the CEOs retirement as well as future performance under a new CEO. One obvious detriment to payment would be the firm entering bankruptcy. If this occurred, the CEO would lose all right to the SERP. For this reason, it is in the best interest of the CEO to conserve cash and work to leave the company in the safest financial condition possible. This maximizes the probability of full payment of the SERP amount.

As previously mentioned, prior research finds a positive association between CEO personal debt-to-equity ratios and distance from default.[4] Sundaram and Yermack (2007) measure firm distance from bankruptcy as a proxy for firm risk. Their results indicate that CEOs manage conservatively when their personal debt to equity ratios exceed their firm's debt to equity ratio. I employ standard measures of risk (beta and standard deviation of returns) and test the direct impact of SERPs on risk regardless of the CEO's personal debt to equity ratio. The relation between standard firm risk measures and SERPs has not been investigated. Because CEOs will want to ensure payment of their SERP, they will choose to manage the firm conservatively. This effect should increase as the size of the SERP increases. As such, I would expect that there exist a negative relation between the size of the CEO's SERP and firm risk.

H1: CEO SERP values are negatively associated with firm risk.

Research has been mixed concerning the proper balance of performance sensitive pay and cash. While some studies find evidence in favor of the incentive effect of performance-based pay, other studies have found evidence supporting a risk aversion effect. Mehran (1995) and Mishra et al. (2000) both find a positive correlation between performance sensitive pay and firm value. Brick et al. (2008) and Carlson and Lazrak (2009) both show in their settings that increasing performance pay decreases future volatility. Risk-averse managers decrease overall firm risk in order to safeguard their pay. The authors conclude that the risk-aversion effect dominates the incentive effect because the manager's compensation is exposed to more risk. Although intuitively it seems that

[4] Sundaram and Yermack (2007) define the CEO personal debt to equity ratio as compensation owed to the CEO by the firm subsequent to service (debt) divided by equity compensation (stock and options).

larger SERPs are associated with less risk, large SERPs that are relatively sheltered (i.e. protected by a trust or lump-sum payment) may encourage different risk taking behavior than less secure SERPs[5].

Given the updated SEC disclosures beginning in 2007, researchers are now able to gather more informative data concerning the structure of the CEO compensation agreements and retirement packages in particular. One unique characteristic of the SERP that varies among firms is the payment option. Some firms require that the CEO receive the value of their pension in the form of an annuity throughout retirement. Other firms require the CEO to receive the value of the pension in a lump sum. And alternatively some CEOs are given the option of a lump sum or installments. There is also evidence that some CEOs have "SERP Swaps" or "Secular Trusts" that guarantee payment of the obligation (Bebchuk and Jackson 2005, Sundaram and Yermack 2007). The differing characteristics of retirement packages vary not only in form but also in probability of payment. A CEO who has the option to take a lump sum at retirement has a higher probability that he or she will actually receive the funds as opposed to the CEO who receives his or her payments over the remainder of their life. Not only are the funds immediately available for personal use with a lump sum payment, they are not subject to future firm performance primarily controlled by a new CEO. If the majority of CEO SERPs are subject to creditors in the event of bankruptcy, then it behooves CEOs to conservatively manage the firm to protect their retirement, even at the cost of sacrificing wealth that might have been accumulated on stock and option values. On the other hand, the CEO with the lump sum option receives his or her payment quickly upon retirement

[5] See Appendix A for a discussion of ways that a SERP may be "sheltered" through the formation of a trust.

and may be less concerned about conservatively managing the firm to avoid bankruptcy or loss. He or she does not have to worry about future firm performance, has much greater control over the profitability and liquidity of the firm at the time that the benefit is paid; therefore, he or she is able to take risks to maximize personal stock and option values knowing that the SERP is relatively safe.[6] This is expressed in the second hypothesis.

H2: The negative association between CEO SERP values and firm risk is attenuated when the SERP is sheltered.[7]

The 2007 disclosures also provide greater insight into negotiated severance agreements for executives. Severance agreements also have a potential impact on the decision making of CEOs, especially when combined with a large SERP agreement. Yermack (2006) investigates these agreements and finds evidence that 50% of his sample receive a severance payout upon voluntary or involuntary termination. He finds that most of the involuntary packages are larger than the voluntary and concludes that these packages serve as an ex post settling up mechanism. Rau and Xu (2008) perform a similar study with a larger sample and apply various executive compensation theories – risk compensation, incentive tradeoff, rent extraction, and boilerplate. Most of their findings are consistent with the risk compensation theory. CEOs incur professional

[6] In theory it could be possible for CEOs to sell their rights to future pension payments in return for a lump sum distribution through a guaranteed insurance contract (GIC). However, the discount rate that would be applied to this transaction would likely be very large given the risk that the insurer now faces and the increased information asymmetry between the insurer and company as compared to the CEO and company. Furthermore, I have had a discussion with an executive at a Fortune 500 firm who was part of the company's SERP, and he indicated that on only one occasion had he heard of a fellow executive try to exchange future payments for a lump sum payment. He said that the negotiated discount rate that was to be applied was so large that the executive chose not to enter the transaction.

[7] SERP payments are defined as sheltered if the payment method is a lump sum or the CEO has a lump sum option. The payments are also sheltered if they are protected by a trust or "SERP swap".

reputation risk when joining a firm. The magnitude of this risk may depend on the risk of the firm. Rau and Xu's findings indicate that the size of the severance package is correlated with firm risk. They also find that firms with strong corporate governance have change in control clauses as part of the severance agreements that encourage CEOs to seek out positive merger opportunities. Inderst and Mueller (2005) draw similar conclusions in their theoretical investigation of severance agreements. Their study shows that these agreements can be used to incentivize the CEO to share (rather than hide) bad news and even exit the firm if it is in the best interest of shareholders. Severance agreements may provide differing incentives based on their structure but nonetheless affect CEO risk tolerance and should not be ignored in an analysis of decision making. Hypothesis two predicts that the additional security of a formal severance agreement combined with a SERP will encourage greater risk taking by the CEO. SERP agreements generally define a "normal retirement age" or length of service required in order to receive the full estimated benefit. In the event that a CEO chooses to retire, leave the firm early, or is dismissed, the estimated SERP benefit is adjusted down to reflect fewer years of service. (The SERP may also be adjusted up in the event that the CEO chooses to remain in his or her position beyond the "normal retirement age".) While having a severance agreement will not generally affect the calculation of the SERP or any adjustments due to length of service, a severance agreement may provide additional security in the event that the CEO departs early and the SERP benefit is adjusted down. The overall wealth for a CEO who departs early will be higher if a negotiated severance agreement exists. This difference in overall wealth may have an impact on decisions made during the CEO's tenure. The severance agreement may provide the CEO

opportunity to increase risk in an attempt to maximize stock and option values. If the company does not prosper and chooses to remove the CEO, then a CEO with a severance agreement and SERP will be in a much better financial position than one who does not receive severance and has his or her SERP adjusted down.

H3: The negative association between CEO SERP values and firm risk is attenuated due to the interaction effect of a SERP and negotiated severance agreement.

CHAPTER IV
DETERMINANTS OF SERPS HYPOTHESES DEVELOPMENT

In another stream of research there are a growing number of papers seeking to evaluate compensation committee quality or effectiveness. Compensation committee quality has been a challenging variable to measure primarily because research has not clearly defined a set of effective characteristics. The next section of this study measures those characteristics that are correlated with CEOs receiving SERPs. Combined with what is learned from the previous hypotheses of the paper, this section may provide evidence of associations between compensation committee structure and firm risk.

Researchers that have studied compensation committees have at times failed to find an association between standard corporate governance measures and CEO compensation. Independence of committee members and CEO involvement are two examples of variables that have had a significant impact on board and committee effectiveness in other literatures, but the association is not as strong for compensation committee studies. Tests for association between CEO pay and various governance measures may fail to find results when the incorrect attribute of CEO compensation is analyzed. Although some association has been found between governance measures and salary and/or options, these studies were not able to look for an association between governance measures and other forms of CEO compensation such as SERPs. This study will extend this research by testing the association between previously examined governance variables and CEO SERPs.

Brick et al. (2006) find evidence that excess director compensation leads to excess CEO compensation. There is also growing evidence in the audit committee literature that

audit committee member incentives affect decision making. Archambeault et al. (2008) find a significant positive relation between accounting restatements and audit committee members receiving short-term stock option grants. The result does not hold for audit committee members receiving long-term stock option grants. Bierstaker et al. (2009) find similar benefits to compensating audit committee members with long-term incentives. Specifically, audit committee members compensated with long-term incentives are more likely to support the auditor in a dispute with management. These papers provide evidence that directors may act differently based on their own compensation. As research continues to grow in the area of CEO retirement packages and the effect on firm performance, it will be important to understand the types of compensation committees that are associated with these packages. Because the prior literature suggests that CEO SERPs are large cash sums that are generally not very sensitive to performance, I expect directors with large annual retainers, not sensitive to performance, to be more likely to grant large SERPs.

H4: The size of the compensation committees' annual retainers will have a positive impact on the likelihood of the CEO having a SERP.

Other studies have investigated the impact that director stock ownership has on CEO pay (Conyon and He 2004, Sun et al. 2009). Director ownership of the firm could have two potential effects. With directors interests more closely aligned with shareholder interests, directors may increase monitoring efforts. Conyon and He (2004) find that the level of director ownership and the level CEO compensation are inversely related. This finding suggests that directors who are also owners of the firm may choose to lower the overall level of CEO compensation. Directors may also choose to structure CEO

compensation in a way that increases pay-performance sensitivity. Sun et al. (2009) show that increased compensation committee quality is associated with a more sensitive pay-performance link. Based on compensation committee members beliefs concerning the incentive effect of SERPs, members with stock ownership may be less likely to grant SERPs if they believe this will weaken the pay-performance link. Alternatively, if directors believe that providing a SERP for the CEO will reduce overall firm risk then they may grant SERPs in order to protect their equity ownership from short-term volatility. The previous research in this area shows that directors with equity ownership behave differently than those without. However, it is unclear if directors will be more likely or less likely to grant a SERP if they have equity ownership. The following non-directional hypothesis will be tested.

H5: The equity ownership of the compensation committee members will have an impact on the likelihood of the CEO having a SERP.

The presence of CEOs on compensation committees is another characteristic that has received attention in the literature. Conyon and He (2004), Anderson and Bizjak (2003), Daily et al. (1998), and Sun et al. (2009) have all investigated the impact that having a CEO on the compensation committee has on CEO pay. Most researchers' intuition suggests that having a CEO on the compensation committee will lead to higher pay for that firm's CEO. After all, this is a relatively small network of individuals that is often thought of as having a sort of fraternal relationship. However, there is very little evidence supporting this intuition. The majority of evidence indicates that having a CEO on the compensation committee has no real effect on the level of compensation. While salaries, bonuses, and options may not reflect the influence of CEOs on compensation

committees, retirement plans may. SERP arrangements have historically been subject to less disclosure than other forms of CEO compensation. For this reason, CEOs may know that post-employment pay will be less scrutinized than other forms. Prior research indicates that a slight majority of CEOs have SERP arrangements (Bebchuk and Jackson 2005, Sundaram and Yermack 2007). Perhaps based on the common occurrence of these packages within the CEO network, CEO compensation committee members will be more likely to grant them for other CEOs.

H6: The presence of outside CEOs on the compensation committee will have a positive impact on the likelihood of a CEO having a SERP.

Lastly, most research in the area of board and committee effectiveness supports the notion that committees are a subset of the board and characteristics of the board impact committee effectiveness. One board element that seems to be of particular importance to CEO pay is the presence of outside blockholders (Core et al. 1999, Chhaochharia and Grinstein 2009). Blockholders serve as diligent external monitors of CEO activity and pay. These studies as well as others show that the presence of outside blockholders can serve to limit CEO pay. Executive compensation consistently garners much attention from the media and investor groups, and because there has not been a plethora of research done in the area of CEO SERPs, most media and investor groups seem to view these packages as another form of corporate excess. Alternatively, it is possible the blockholders who are not transitory investors may recognize the benefit of the CEO having a SERP and acting in the long-term interest of the firm. These investors may understand the reduction in agency costs and the related benefits. I do not make a directional prediction with this hypothesis due to the competing explanations.

H7: The presence of outside blockholders will have an impact on the likelihood of a CEO having a SERP.

CHAPTER V
ANALYSIS

Sample

The hypotheses are tested using a sample of S&P 500 firms as of 2006. The earliest SERP data made available by the new disclosures reports SERP values at the end of fiscal year 2006. The sample includes companies in financial industries. The recent events surrounding the banking crisis and regulation reform make this industry particularly interesting with respect to my study.[8] The final sample is constrained by data available in Compustat, CRSP, and Execucomp. SERP and severance agreement data is hand collected from 2007 company proxy statements that report 2006 values. Table 1 details lost observations and reports a sample size of 410. Any firms that went through a merger or experienced a CEO turnover during 2006 were eliminated from the sample. Thirty-seven firms were eliminated because of this constraint. An additional 43 firms were dropped from the sample because of missing data from at least one of the primary data sources – CRSP, Compustat, and Execucomp. Finally, 10 observations are lost due to a lack of information related to the proxy filing.

The dependent variables used to measure firm risk are two measures of equity risk – the standard deviation of daily stock returns and beta. There are other measures of firm risk; however, equity risk is the risk that is most directly linked to shareholders. In the crafting of executive compensation disclosures by the SEC and executive compensation

[8] In an unreported additional sensitivity analysis the financial firms have been dropped. The results remain unchanged but are not disclosed.

Table 1
Analysis of Sample

S&P 500	500
Firms dropped due to merger, CEO turnover, or other events during 2006.	(37)
Missing returns data from CRSP, Compustat, and/or Execucomp	(43)
Incomplete or missing data from proxy filings	(10)
Total Sample	410
CEOs with SERPs	253
CEOs without SERPs	157

regulations by law makers, it is most often the stockholders with whom they are most concerned.[9]

Following the approach by Low (2009), the main dependent variable of interest is the standard deviation of returns. This is a measure of total firm risk. I measure daily returns for a year, calculate the standard deviation, and impose a natural log transformation (Low 2009 and Kothari et al. 2009). However, to add rigor to the analysis I also calculate Beta using one year of returns and take the natural log.

Control variables common to both of the dependent variables are used in the analysis and are based on prior literature (Botosan and Plumlee 2005, Ryan 1997, and Fama and French 1993). The natural log of total assets (LNASSETS) at the end of the year controls for size. I measure a one year lag of the market-to-book (MB) ratio to control for growth opportunities, while a lag of return-on-assets (ROA) controls for

[9] There is debate in the finance and accounting literature as to what type of risk these measures actually capture. My paper does not attempt to further parse the differences in these measures. Rather, I employ both measures in an attempt to provide rigor to the study.

profitability. Leverage (LEV) is total short and long term debt divided by total long and short term debt plus total stockholders' equity following Sundaram and Yermack (2007). Following other research assessing investment policy (Low 2009, Coles et al. 2006, and Bargeron et al. 2010), my paper measures research and development expenditures and capital expenditures to control for firm risk that may be changing due to investment policy. Not all risk is directly related to these accounting measures, but these measures help provide evidence of CEOs either accepting or rejecting positive net present value projects. Both variables are a three year average of the expenditures. Lastly, to control for other elements of compensation that impact CEO decision making, I sum salary and bonus over three years and take the average to control for cash compensation (CASHCOMP). I use delta to control for CEO pay-performance sensitivity described by Core and Guay (2002). I also control for a CEO's portfolio value sensitivity to stock return volatility by measuring VEGA (Core and Guay 2002). I use the variable LNPORTFOLIOINCENTIVES to measure delta for the combined stock and option portfolio. This approach to measuring CEO incentives is quite common in the literature (Core and Guay 2002, Coles et al. 2006, and Low 2009).

The SERP variable is the value of the SERP as of the company's fiscal year end in 2006. The SHELTER variable is a binary variable equal to one if the SERP payment is in a lump-sum form upon retirement or the funds used to pay the SERP are set aside in a trust. The severance variable is a binary variable equal to one if the CEO has a negotiated severance agreement. The conditions, forms, and triggers of severance agreements are complex. My paper only begins to investigate the impact of severance agreements on risk. Severance agreements generally define different amounts of compensation for

differing triggering events: voluntary verses involuntary dismissal, involuntary dismissal for cause verses not for cause, etc. For this reason, only one distinction is made as it pertains to severance arrangements. The CEO must have a severance agreement beyond the scope of a change in control agreement. Change in control agreements are put in place to compensate management in the event that the company experiences a merger, acquisition, or some other form of combination and the executives are dismissed. Based on evidence gathered in proxies, these agreements seem to be fairly universal. The severance variable (SEV) in my paper only measures severance agreements above and beyond a change-in-control agreement.

Descriptive Statistics

Table 2 contains descriptive statistics for the SERP variable and a listing of the ten largest SERPs by company and CEO for the sample. Out of 410 sample observations, 253 CEOs have SERPs. The mean value is $10.5 million with a standard deviation of $12.1 million. The largest SERP in the sample is held by Ed Whitacre with AT&T. As of the end of 2006 it was worth $84.667 million. While none of the SERPs in my sample are as large as Lee Raymond's SERP from ExxonMobil, it is clear that there are other SERP values approaching the $100M threshold.[10]

Descriptive statistics for the remaining variables are provided in Table 3. The firms are grouped into two groups - CEOs without a SERP and CEOs with a SERP. Significant differences in variable means are noted in Panel B of Table 3. Firms with

[10] Ed Whitacre does not actually have the largest SERP in the S&P500. William McGuire, United Health Group, has a SERP worth $91.3M. However, missing data for other variables forced this observation from the sample.

Table 2
SERP Statistics

Descriptive statistics of the SERPs in the sample. All dollar values are in thousands (000). All firms are included in the S&P 500. Data comes from 2007 company proxy statements reflecting values as of fiscal year end 2006.

SERP Summary Statistics	
N	253
Mean	10,500
Med	6,675
Std. Dev.	12,100
Min	67
Max	84,700

Rank	Company	CEO	SERP Value
1	AT&T	Edward E. Whitacre, Jr.	84,667
2	Pfizer	Henry McKinnel	82,306
3	ConocoPhillips	J.J. Mulva	58,582
4	News Corp	K. Rupert Murdoch	58,369
5	AFLAC Inc	Daniel P. Amos	49,359
6	Bank of America	Kenneth D. Lewis	49,154
7	Colgate-Palmolive	Reuben Mark	42,858
8	Textron Inc	Lewis B. Campbell	40,084
9	Prudential Financial	Arthur Ryan	36,805
10	McKesson Corp	John H. Hammergren	34,658

Table 3
Descriptive Statistics by SERP Status

Descriptive statistics by SERP status are presented below for the current sample gathered. The characteristics of firms managed by CEOs without SERPs are presented in Panel A. The characteristics of firms managed by CEOs with SERP are presented in Panel B. Tests of differences in means between firms with and firms without SERPs are provided in Panel B. ***, **, * next to the mean indicate significance at the 1%, 5%, and 10% level respectively. BETA is calculated using one year of returns. The standard deviation of returns is measured by calculating the standard deviation of daily returns for a year. Leverage (LEV) is measured as total short and long term debt divided by total long and short term debt plus total stockholders' equity following Sundaram and Yermack (2007). MB is a one year lag ratio of market value to book value. ROA is a one year lag of net income divided by total assets. R&D and CAPEX represent a three year average of research and development and capital expenditures. CASHCOMP is a three year average of cash plus bonus compensation. PORTFOLIOINCENTIVES measures CEO pay-performance sensitivity and VEGA measures CEO pay sensitivity to stock return volatility. SEV is a binary variable equal to 1 if the CEO has a severance package.

Variable	Mean	Median	Std. Dev.	Min	Max
Firms whose CEOs do not have a SERP.					
Beta	1.15	1.04	0.54	0.35	2.84
Std. Dev. Of Ret.	0.02	0.02	0.01	0.01	0.03
Total Assets (in millions)	25,910.81	8,544.00	82,541.48	810.29	707,121.00
Leverage	0.28	0.24	0.24	0.00	0.84
Market to Book	4.24	3.28	6.60	0.76	79.73
ROA	0.08	0.08	0.07	-0.26	0.30
R&D (in millions)	18.86	0.00	85.03	0.00	798.02
CAPEX (in millions)	675.03	159.39	1,858.35	0.00	15,228.00
CashComp (in thousands)	1,776.22	1,000.00	3,381.13	0.00	32,208.33
Portfolio Incentives (in thousands)	5,508.07	955.12	22,917.39	18.10	247,606.40
Vega	328.13	157.69	489.61	0.00	4,116.72
Severance	0.55	1.00	0.50	0.00	1.00
Firms whose CEOs do have a SERP.					
Beta	0.91***	0.80	0.50	0.13	3.08
Std. Dev. Of Ret.	0.01***	0.01	0.00	0.01	0.03
Total Assets (in millions)	66,579.95**	17,067.00	203,511.70	1,497.70	1,884,318.00
Leverage	0.42***	0.37	0.23	0.00	1.12
Market to Book	2.93*	2.57	6.76	-61.20	57.63
ROA	0.06***	0.05	0.06	-0.43	0.38
R&D (in millions)	18.29	0.00	131.00	0.00	1,486.67
CAPEX (in millions)	925.04	342.67	1,744.36	0.00	14,736.33
CashComp (in thousands)	1,937.51	1,155.99	2,727.31	637.89	25,683.69
Portfolio Incentives (in thousands)	1,795.37**	832.63	5,840.53	37.90	85,054.37
Vega	273.66	202.23	290.75	0.00	2,226.05
Severance	0.64*	1.00	0.48	0.00	1.00

CEOs that have a SERP are larger and more leveraged than those firms whose CEO does not have a SERP. Interestingly, market-to-book and ROA are smaller for firms whose CEO has a SERP than firms without. The mean value of portfolio incentives (delta) is smaller for CEOs with SERPs indicating that these CEOs receive less performance sensitive pay. The difference is statistically significant. The descriptive statistics also indicate that CEOs with SERPs are more likely to have a severance agreement. The dependent variables also show significant differences between groups. The CEOs with SERPs group has a lower mean BETA and a lower mean standard deviation of returns. This provides preliminary evidence for hypothesis 1. While differences appear to exist between the two groups as it pertains to research and development, capital expenditures, cash compensation, and vega these differences are not statistically significant at standard levels.

Pair wise correlations are presented in Table 4. Other than the strong correlation between the two measures of firm risk, there does not appear to be any strong correlations in the data. This indicates that multicollinearity should not be an issue in the multivariate setting. VIF scores were calculated to confirm this assumption following the OLS regressions.

Table 4
Correlation Matrix

Correlations are presented below with p-values disclosed below the correlation. Statistically significant correlations are in bold.

	SERP	BETA	Std. Dev. Of Ret.	Total Assets	Leverage	Market to Book	ROA
SERP	1						
BETA	**-0.1661** 0.0006	1					
Std. Dev. Of Ret.	**-0.2482** 0	**0.8178** 0	1				
Total Assets	**0.18** 0.0002	**-0.1154** 0.0179	**-0.218** 0	1			
Leverage	**0.101** 0.0386	**-0.2476** 0	**-0.279** 0	**0.2741** 0	1		
Market to Book	-0.0194 0.6899	0.0454 0.3537	0.0657 0.1792	-0.0502 0.3054	-0.0687 0.1612	1	
ROA	-0.0664 0.1707	**0.1118** 0.022	0.0793 0.105	**-0.1616** 0.0009	**-0.4487** 0	**0.5175** 0	1
R&D	**0.139** 0.0043	-0.0639 0.1905	0.016 0.7437	-0.0124 0.8002	-0.0569 0.2445	0.0267 0.5864	**0.0893** 0.0678
CAPEX	**0.2534** 0	**-0.0819** 0.0933	**-0.1229** 0.0116	**0.2587** 0	0.0445 0.363	-0.0391 0.4243	0.033 0.5006
CASHCOMP	**0.1222** 0.0113	-0.0048 0.921	-0.0551 0.2597	**0.2622** 0	0.0397 0.4174	-0.0344 0.479	-0.0606 0.2113
PortfolioIncentives	-0.0333 0.4968	-0.015 0.7614	0.0058 0.9071	-0.0023 0.9621	**-0.0571** 0.2476	**0.1017** 0.0378	0.0796 0.1045
TotalVega	**0.163** 0.0007	-0.0749 0.1226	-0.0174 0.7196	**0.0938** 0.053	**-0.083** 0.0873	0.0114 0.8135	**0.1198** 0.0128
SEVERANCE	0.0329 0.5016	-0.064 0.195	-0.006 0.9037	**-0.0865** 0.0795	0.0268 0.5877	0.014 0.775	-0.0475 0.3328

	R&D	CAPEX	CASHCOMP	EQUITYCOMP	VEGA	SEVERANCE
R&D	1					
CAPEX	0.0038 0.9383	1				
CASHCOMP	-0.0209 0.6686	**0.1627** 0.0008	1			
PortfolioIncentives	0.0147 0.7661	0.01 0.84	0.0056 0.9095	1		
TotalVega	**0.1047** 0.0307	**0.1741** 0.0003	**0.1095** 0.0226	**0.1127** 0.0194	1	
SEVERANCE	**-0.0901** 0.0678	-0.0506 0.3057	0.0138 0.778	**-0.117** 0.0178	-0.0623 0.2054	1

SERPs and Firm Risk

The focus of the first part of the analysis is the impact of CEO SERP on firm risk given differing characteristics of CEO SERPs (tests of hypotheses 1-3). The second part of the analysis will test the hypotheses related to the determinants of a SERP (test of hypotheses 4-7). Hypothesis 1 is tested to evaluate the overall impact of CEO SERPs on firm risk. The second hypothesis is tested to show that the impact of CEO SERPs depends upon SERP payment characteristics. The third hypothesis is tested to evaluate how a SERP may affect firm risk when the CEO has a severance agreement as well as a SERP. To test hypothesis 1 in a multivariate setting, the following OLS regression equation is used.[11]

$$RISK = \beta_0 + \beta_1 SERP + \beta_2 LNASSETS + \beta_3 LEV + \beta_4 MB + \beta_5 ROA + \beta_6 R\&D + \beta_7 CAPEX + \beta_8 CASHCOMP + \beta_9 LNPORTFOLIOINCENTIVES + \beta_{10} VEGA + \beta_{11} SEV + \varepsilon \quad (1)$$

RISK	= Standard Deviation of Returns in one model and BETA in the other model.
SERP	= A continuous measure of the size of SERP values at the end of the 2006 fiscal year.
LNASSETS	= Natural log of assets at the end of the 2006 fiscal year.
LEV	= Based on Sundaram and Yermack (2007) and measured as total debt (short and long term) divided by total debt plus book value of equity.
MB	= Market value divided by book value lagged by one year.
ROA	= Net income divided by total assets lagged by one year.
R&D	= Three year average of research and development expenditures for t-2, t-1, and t.

[11] All regressions throughout the paper are robust to heteroskedasticity and control for industry using Fama and French industry groups.

CAPEX	= Three year average of capital expenditures for t-2, t-1, and t.
CASHCOMP	= Three year (2004-2006) average of salary plus bonus compensation.
LNPORTFOLIO INCENTIVES	= Measure of CEO pay-performance sensitivity. It is calculated as the dollar change in CEO stock and option portfolio for a 1% change in stock price.
VEGA	= Measure of CEO pay sensitivity to stock return volatility. It is calculated as the dollar change in CEO option holdings for a 1% change in stock return volatility.
SEV	= Binary variable equal to 1 if the CEO has a negotiated severance agreement.

The regression results with only the control variables are shown in columns (1) and (3) of Table 5. Size is negatively associated with both measures of risk. Leverage is negatively associated with beta. While these findings are expected for size, it is expected that leverage would be positively associated with risk. It is possible that this finding is idiosyncratic to my sample that includes only the S&P 500 firms. In general, these firms are not highly leveraged. It is also possible that stronger and more stable firms have higher debt capacities. The market to book ratio is positive in both columns as expected. This ratio may indicate growth opportunities and would be positively associated with risk. Research and development is positive and significant as expected in the standard deviation of returns model. VEGA is positive and significant in the standard deviation of returns model. The SEV variable indicating the existence of a severance agreement is positive as expected but not significant in either model.

The SERP variable is added to the regression and the results are displayed in columns (2) and (4). As predicted in hypothesis 1, the SERP variable is negatively

Table 5
SERP Impact on Firm Risk

This table presents a cross section of OLS regression estimates of the standard deviation of returns and equal weighted betas by firm. These dependent variables were estimated for the 2006 fiscal year. The dependent variables were multiplied by 10^4 to improve the display of the estimates (Sundaram and Yermack 2007). Columns (1) and (3) contain the regression with only the control variables. The SERP variable is added to the regression in columns (2) and (4). SERP values were collected from company proxy statements issued at the beginning of the 2007 fiscal year. Industry is controlled for using Fama and French industry groups. Standard errors are reported in italics. All regressions are robust to heteroskedasticity. SERP is a continuous variable measuring the magnitude of the SERP. Leverage (LEV) is measured as total short and long term debt divided by total short and long term debt plus total stockholders' equity following Sundaram and Yermack (2007). MB is a one year lag ratio of market value to book value. ROA is a one year lag of net income divided by total assets. R&D and CAPEX represent a three year average of research and development and capital expenditures. CASHCOMP is a three year average of cash plus bonus compensation. LNPORTFOLIOINCENTIVES measures CEO pay-performance sensitivity and VEGA measures CEO pay sensitivity to stock return volatility. SEV is a binary variable equal to 1 if the CEO has a severance package.

Dependent Variables	Standard Deviation of Returns		Beta	
	1	2	3	4
SERP		-0.00004***		-0.00004**
		0.00001		*0.00002*
LNASSETS	-891.493***	-780.190***	-827.864***	-721.951***
	160.318	*154.800*	*259.171*	*255.866*
LEV	-1021.331	-992.675	-2781.535**	-2754.266**
	874.481	*855.186*	*1135.606*	*1112.880*
MB	59.385***	59.939***	76.214***	76.742***
	16.344	*16.181*	*26.298*	*25.737*
ROA	-12154.980***	-12220.790***	-9829.521**	-9892.148**
	2583.450	*2568.091*	*4028.877*	*4015.734*
R&D	2.536***	3.104***	1.770	2.310*
	0.921	*0.863*	*1.315*	*1.256*
CAPEX	-0.091	-0.077	0.014	0.027
	0.060	*0.066*	*0.109*	*0.103*
CASHCOMP	-0.030	-0.032	0.031	0.029
	0.031	*0.033*	*0.046*	*0.049*
LNPORTFOLIOINCENTIVES	21.107	76.176	14.730	67.132
	104.871	*102.355*	*147.125*	*145.963*
VEGA	*0.911***	*0.944***	*0.213*	*0.245*
	0.341	0.322	0.398	0.400
SEVERANCE	312.319	363.602	237.470	286.270
	266.627	*264.027*	*383.919*	*383.635*
Observations	410	410	410	410
R2	0.594	0.607	0.651	0.656

***, **, * next to the mean indicate significance at the 1%, 5%, and 10% level respectively.

associated with firm risk in both models. This finding is significant at the 1% level in the standard deviation of returns model and at the 5% level in the beta model. This provides evidence for the theory that CEOs with SERPs manage their firms more conservatively in order to ensure that a healthy firm exists upon retirement when the SERP is to be paid. This is also evidence of Jensen and Meckling's (1976) prediction that inside debt would help to align the incentives of CEOs with debt holders. The control variables in the model remain relatively unchanged once the SERP variable is added.

The second hypothesis predicts that the negative association between SERPs and risk will be reduced when the payment of the SERP is sheltered in some form. To test this hypothesis the SHELTER variable is added to the model and interacted with the SERP variable. SHELTER is a binary variable that equals 1 when the SERP is sheltered.

$$RISK = \beta_0 + \beta_1 SERP*SHELTER + \beta_2 SERP + \beta_3 SHELTER + \beta_4 LNASSETS + \beta_5 LEV + \beta_6 MB + \beta_7 ROA + \beta_8 R\&D + \beta_9 CAPEX + \beta_{10} CASHCOMP + \beta_{11} LNPORTFOLIOINCENTIVES + \beta_{12} VEGA + \beta_{13} SEV + \varepsilon \quad (2)$$

The second hypothesis is supported by the results presented in Table 6. The coefficient for the interaction term (SERP*SHELTER) is positive and significant at the 1% level and 5% level for the standard deviation of returns and beta models, respectively. This indicates that the SHELTER variable has a positive effect on the association between SERP and firm risk. The SERP coefficient remains negative and highly significant indicating that the negative relation between SERP and firm risk persists for SERPs *without* SHELTERS. The joint test of SERP + SERP*SHELTER indicates that the negative relation between SERPs and firm risk is drastically reduced in the returns model (F-test is negative and significant at the 10% level) and eliminated in the beta model (F-test is not significant) for SERPs with SHELTERs. These results indicate that SERPs will

Table 6
Sheltered SERP Impact on Firm Risk

This table presents a cross section of OLS regression estimates of the standard deviation of returns and equal weighted betas by firm. These dependent variables were estimated for the 2006 fiscal year. The dependent variables were multiplied by 10^4 to improve the display of the estimates (Sundaram and Yermack 2007). SERP values were collected from company proxy statements issued at the beginning of the 2007 fiscal year. SHELTER is a dichotomous variable equal to 1 if the SERP is protected by a trust or alternative payment form. Industry is controlled for using Fama and French industry groups. Standard errors are reported in italics. All regressions are robust to heteroskedasticity. SERP is a continuous variable measuring the magnitude of the SERP. Leverage (LEV) is measured as total short and long term debt divided by total long and short term debt plus total stockholders' equity following Sundaram and Yermack (2007). MB is a one year lag ratio of market value to book value. ROA is a one year lag of net income divided by total assets. R&D and CAPEX represent a three year average of research and development and capital expenditures. CASHCOMP is a three year average of cash plus bonus compensation. LNPORTFOLIOINCENTIVES measures CEO pay-performance sensitivity and VEGA measures CEO pay sensitivity to stock return volatility. SEV is a binary variable equal to 1 if the CEO has a severance package. Only firms with SERPs are included in the regression.

Dependent Variables	Standard Deviation of Returns	Beta
SERP_SHELTER	0.0000798***	0.000092**
	0.000028	*0.000044*
SERP	-0.000100***	-0.000107***
	0.000026	*0.000039*
SHELTER	-829.902	-927.818*
	332.769	*501.538*
LNASSETS	-754.935***	-693.651***
	151.831	*251.551*
LEV	-787.443	-2524.615**
	849.134	*1120.017*
MB	55.945***	72.281***
	16.724	*26.160*
ROA	-11850.680***	-9491.689**
	2564.572	*4049.565*
R&D	2.809***	1.968
	0.835	*1.239*
CAPEX	-0.087	0.017
	0.063	*0.100*
CASHCOMP	-0.039	0.022
	0.032	*0.049*
LNPORTFOLIOINCENTIVES	74.720	65.550
	101.789	*146.659*
VEGA	0.906***	0.205
	0.315	*0.390*
SEV	328.915	244.953
	261.479	*379.283*
SERP + SERP_SHELTER	-0.00002*	-0.00001
	0.00001	*0.00002*
Observations	410	410
R2	0.617	0.662

***, **, * next to the mean indicate significance at the 1%, 5%, and 10% level respectively.

not effectively reduce agency costs between CEOs and debt holders if the SERP is sheltered.

The third hypothesis predicts that the interaction of a SERP and severance agreement will attenuate the negative association between SERPs and firm risk. This hypothesis is tested using the following model.

$$RISK = \beta_0 + \beta_1 SERP*SEV + \beta_2 SERP + \beta_3 SEV + \beta_4 LNASSETS + \beta_5 LEV + \beta_6 MB + \beta_7 ROA + \beta_8 R\&D + \beta_9 CAPEX + \beta_{10} CASHCOMP + \beta_{11} LNPORTFOLIOINCENTIVES + \beta_{12} VEGA + \varepsilon \quad (3)$$

The results are disclosed in Table 7. Unfortunately the results do not confirm hypothesis 3. The interaction term SERP*SEV is not significant. Furthermore, an F-test of the linear combination (SERP+SERP*SEV) indicates that coefficient is statistically significant, however the coefficient remains negative. This indicates that the severance agreement has no impact on the relation between the SERP and firm risk. This is not surprising given that in columns (1) and (3) of Table 5 SEV, as measured in this paper, does not appear to have an association with risk. This may partly explain the lack of results in Table 7. I also recognize that measuring severance as a binary variable hinders the power of the SEV variable to capture some of the actual characteristics of a severance agreement. Further exploration of severance agreements while interesting is beyond the scope of this paper.

The results of the analyses addressing hypothesis 2 call into question the use of SERPs as tools to mitigate agency costs. While there is evidence that SERPs are negatively associated with firm risk, this only holds if the SERP is structured like debt. The SERP payment must be paid over time in some form of annuity to actually have a negative association with risk.

Table 7
SERP and Severance Interaction Effect on Firm Risk

This table presents a cross section of OLS regression estimates of the standard deviation of returns and equal weighted betas by firm. These dependent variables were estimated for the 2006 fiscal year. The dependent variables were multiplied by 10^4 to improve the display of the estimates (Sundaram and Yermack 2007). SERP values were collected from company proxy statements issued at the beginning of the 2007 fiscal year. Industry is controlled for using Fama and French industry groups. SEVERANCE is a dichotomous variable equal to 1 if the CEO has a negotiated severance agreement. A joint F-test of the interaction term is displayed below the table. Standard errors are reported in italics. All regressions are robust to heteroskedasticity. SERP is a continuous variable measuring the magnitude of the SERP. Leverage (LEV) is measured as total short and long term debt divided by total long and short term debt plus total stockholders' equity following Sundaram and Yermack (2007). MB is a one year lag ratio of market value to book value. ROA is a one year lag of net income divided by total assets. R&D and CAPEX represent a three year average of research and development and capital expenditures. CASHCOMP is a three year average of cash plus bonus compensation. LNPORTFOLIOINCENTIVES measures CEO pay-performance sensitivity and VEGA measures CEO pay sensitivity to stock return volatility. SEV is a binary variable equal to 1 if the CEO has a severance package.

Dependent Variables	Standard Deviation of Returns	Beta
SERP_SEV	-0.0000005	-0.000015
	0.000023	*0.000034*
SERP	-0.000044**	-0.000033
	0.000019	*0.000026*
SEV	366.921	384.728
	314.343	*458.478*
LNASSETS	-780.317***	-725.701***
	155.329	*256.156*
LEV	-992.297	-2743.043**
	856.911	*1112.487*
MB	59.950***	77.055***
	16.248	*25.825*
ROA	-12220.850***	-9893.838**
	2571.763	*4018.378*
R&D	3.109***	2.449*
	0.911	*1.347*
CAPEX	-0.077	0.028
	0.066	*0.105*
CASHCOMP	-0.032	0.027
	0.033	*0.049*
LNPORTFOLIOINCENTIVES	76.415	74.230
	102.922	*145.659*
VEGA	*0.944***	*0.234*
	0.319	*0.394*
SERP + SERP_SEV	-0.00004***	-0.00005**
	0.00001	*0.00002*
Observations	410	410
R2	0.607	0.657

***, **, * next to the mean indicate significance at the 1%, 5%, and 10% level respectively.

Determinants of SERPs

Hypotheses 4-7 predict associations between compensation committee and other corporate governance characteristics and SERPs. To test these hypotheses data was gathered from proxy statements released at the time the CEO was hired for the same S&P firms in the sample. SERP amounts are not like salary or option payments that are negotiated or granted on an annual basis. SERP amounts are long-term in nature. While minor provisions of the agreements may be amended from year to year, in most cases it is likely that the decision to grant a SERP is made at the time a CEO is hired. It is for this reason that corporate governance data was collected at the time of hire. This data was supplemented with data obtained through Compustat and Execucomp. The following probit model is used to test the hypotheses.

$$SERPBIN = \beta_0 + \beta_1 ANNRET + \beta_2 EQUITY + \beta_3 CEO + \beta_4 BLOCK + \beta_5 CEOTENURE + \beta_6 OUTSIDECEO + \beta_7 CEOAGE + \beta_8 BOARDSIZE + \beta_9 BOARDIND + \beta_{10} LNASSETS + \beta_{11} LEV + \varepsilon \quad (4)$$

SERPBIN	= A binary variable equal to 1 if a firm's CEO has a SERP at the end of the 2006 fiscal year.
ANNRET	= Measures the magnitude of the annual retainer that is paid to directors as part of their compensation.
EQUITY	= A binary variable equal to 1 if the directors receive some form of equity as part of their compensation.
CEO	= Measures the percentage of compensation committee members who have experience as a CEO.
BLOCK	= Count of the number of blockholders (>5% ownership of the firm) within the company.
CEOTENURE	= The number of years the CEO has served in that position for the current firm.

OUTSIDECEO	= This is a binary variable equal to 1 if the CEO was hired from outside the firm.
CEOAGE	= The 2006 age of the CEO.
BOARDSIZE	= The number of directors on the board.
BOARDIND	= The percentage of the board members that are independent.
LNASSETS	= Natural log of assets at the end of the 2006 fiscal year.
LEV	= Based on Sundaram and Yermack (2007) and measured as total debt (short and long term) divided by total debt plus book value of equity.

The first four variables are the variables based on hypotheses 4-7. Based on the prediction in hypothesis 4, I expect the coefficient on ANNRET to be positive. EQUITY is a binary variable equal to 1 if the directors receive some form of equity as part of their compensation. No directional prediction is made for this hypothesis. CEO measures the percentage of CEOs who sit on the compensation committee. I expect the coefficient for this variable to be positive. BLOCK measures the number of blockholders who own greater than or equal to 5% of the firm. I do not make a directional prediction for this hypothesis. CEOTENURE, OUTSIDECEO, LNASSETS, and LEV are variables taken from Sundaram and Yermack's (2007) determinants of SERP model. All of these variables are expected to have positive coefficients. As CEO tenure increases then the likelihood of having a form of compensation focused on retirement should also increase. Firms may use SERPs to attract potential CEOs to the firm. This is controlled for by using an indicator variable if the CEO was hired from outside of the firm. Size and leverage have also been found to be positively correlated with the size of the SERP, thus

it is possible that these variables are also positively correlated with the existence of a SERP. BOARDSIZE, and BOARDIND are other common corporate governance variables that have an impact on a firm's internal corporate governance framework. The size of the board also has implications for effective governance (Yermack 1996, Dalton et al. 1999). Based on the results found by Conyon and He (2004) it appears that larger boards are associated with lower CEO equity incentives. Prior research (Beasley 1996) also supports the notion that boards with a greater proportion of independent directors are more effective. BOARDIND is measured as the percentage of the board that is composed of independent directors.

The results of the test are presented in Table 8. The sample size drops from 410 to 327. Data was gathered from proxy statements at the time of the CEO's hire. The lost observations can be attributed to those CEOs who were hired prior to 1994 as these older proxies are very difficult to locate. Additional observations are lost during the estimation of the probit model.[12] The coefficient for ANNRET is positive as predicted but not significant. The EQUITY variable is also not significant. However, the CEO variable measuring the percentage of CEOs who serve on the compensation committee is positive and significant at the 10% level. This provides evidence for hypothesis 6 that predicts that a greater percentage of CEOs on the compensation committee will increase the likelihood of having a SERP. This is one of the first findings indicating that the presence of CEOs on compensation committee has effect on compensation. Earlier studies have failed to find a link between CEO salary and options and CEOs serving on the compensation committee.

[12] Results hold using a logit model.

Table 8
Determinants of a SERP

This table presents a cross section of Probit regression estimates of the likelihood of having a SERP by firm. The dependent variable SERPBIN is equal to 1 if the CEO has a SERP during the 2006 fiscal year. SERP data were collected from company proxy statements issued at the beginning of the 2007 fiscal year. Industry is controlled for using the Fama and French industry groups. Standard errors are reported in italics. All regressions are robust to heteroskedasticity. ANNRET is dollar amount of the annual retainer paid to directors. EQUITY is an indicator variable equal to 1 if the directors receive any form of equity compensation. CEO measures the percentage of the compensation committee composed of CEOs. BLOCK is the number of blockhoders (>5% owners) of the firm. CEOTENURE measures the number of years that the CEO has served in his/her current position. OUTSIDECEO equals 1 for a CEO who was hired from outside the firm. CEOAGE measures the age of the CEO during 2006. BOARDSIZE measures the number of board members who serve on the board. BOARDIND measures the percentage of board members who are independent. LNASSETS is the natural logarithm of total assets. Leverage (LEV) is measured as total short and long term debt divided by total long and short term debt plus total stockholders' equity following Sundaram and Yermack (2007).

Dependent Variable	SERPBIN
ANNRET	0.000
	0.000
EQUITY	-0.072
	0.210
CEO	0.551*
	0.324
BLOCK	0.009
	0.023
CEOTENURE	0.019
	0.033
OUTSIDECEO	-0.088
	0.207
CEOAGE	0.040**
	0.017
BOARDSIZE	0.055
	0.039
BOARDIND	0.466
	0.662
LNASSETS	0.084
	0.088
LEVERAGE	1.395***
	0.463
Observations	327
Pseudo R2	0.287

***, **, * next to the mean indicate significance at the 1%, 5%, and 10% level respectively.

CEOAGE and LEV are both positive and significant at the 5% and 1% levels, respectively. This confirms Sundarum and Yermack's (2007) results. While the results of the determinant model do not provide evidence for all hypotheses, they do indicate that CEO service on compensation committees affects pay.

Endogeneity of SERPs and Firm Risk

There is reason to believe that having a SERP is endogenously determined with firm risk. While the focus of my paper is the impact of a SERP on CEO decision making and firm risk, risk as a determinant of SERP must be considered. Directors at firms that exhibit higher risk characteristics may decide to grant a SERP to a CEO to encourage a long-term perspective, reduce agency costs, and moderate excessive risk taking. It is also possible that CEOs require additional compensation to accept jobs at excessively risky firms due to the loss of reputational capital if unsuccessful, or that boards choose to compensate CEOs with SERPs when the firm or industry they are operating in is inherently more risky than others. I address these concerns with two additional robustness tests, a two-stage least squares (2sls) analysis and a true simultaneous equations analysis. Using a standard OLS and ignoring the endogeneity issue will produce biased and inconsistent estimators *if* endogeneity is actually present (Keshk 2003).

Two-Stage Least Squares Analysis

In the two stage model the endogenous variable SERP is regressed on the exogenous variables in the first stage. Then in the second stage the predicted values are used as a substitute for the endogenous variable (Keshk 2003). The exogenous variables

in the first stage are composed of determinant variables. These variables include instrumental variables that are correlated with the endogenous variable (SERP) and uncorrelated with the error term. The variables for the first stage model are based on the determinant model used to test hypotheses 4-7 in this paper.

While I do not re-test each hypothesis using 2sls, I have re-tested the first hypothesis using this approach. If endogeneity is an issue, it is most likely an issue for the test of the first hypothesis. The first hypothesis predicts, and OLS regressions supports, that SERPs will be negatively associated with risk. To test this hypothesis in the OLS setting I include all firms/CEOs in my sample – those who have SERPs and those who do not. The endogenous tension arises in the OLS setting primarily because I may be capturing a higher likelihood that "risky" firms choose to grant SERPs to their CEOs.

Table 9 presents the results of the 2sls regressions in columns (1) and (3) and the results from the original ols regression in columns (2) and (4). The results in columns (2) and (4) are copied from Table 5. All regressions are robust to heteroskedasticity. The coefficients for SERP remain negative in both models and the statistical significance is unchanged. The SERP coefficients in the 2sls models for both dependent variables are more negative than in the ols model indicating that SERPs have an even greater negative association with risk in the 2sls model than was found in the ols model. These results corroborate the evidence presented by the ols models and help provide comfort that endogeneity is not driving the results. I perform various post-estimation tests to validate the 2sls model and instruments.

Table 9
2SLS Estimation of SERP Impact on Firm Risk

This table presents the second stage results of a cross section of 2sls regression estimates of the standard deviation of returns and equal weighted betas by firm. The ols regression results presented in Table 5 are included in columns (2) and (4) for comparability. These dependent variables were estimated for the 2006 fiscal year. Industry is controlled for using 1 digit SIC codes to avoid collinearity concerns. The dependent variables were multiplied by 10^4 to improve the display of the estimates (Sundaram and Yermack 2007). SERP values were collected from company proxy statements issued at the beginning of the 2007 fiscal year. Standard errors are reported in italics. All regressions are robust to heteroskedasticity. SERP is a continuous variable measuring the magnitude of the SERP. Leverage (LEV) is measured as total short and long term debt divided by total long and short term debt plus total stockholders' equity following Sundaram and Yermack (2007). MB is a one year lag ratio of market value to book value. ROA is a one year lag of net income divided by total assets. R&D and CAPEX represent a three year average of research and development and capital expenditures. CASHCOMP is a three year average of cash plus bonus compensation. LNPORTFOLIOINCENTIVES measures CEO pay-performance sensitivity and VEGA measures CEO pay sensitivity to stock return volatility. SEV is a binary variable equal to 1 if the CEO has a severance package.

Dependent Variables	Standard Deviation of Returns		Beta	
	1 (2sls)	2 (ols)	3 (2sls)	4 (ols)
SERP	-0.00028***	-0.00004***	-0.00035**	-0.00004**
	0.00010	*0.00001*	*0.00014*	*0.00002*
LNASSETS	-248.534	-780.190***	-99.488	-721.951***
	341.980	*154.800*	*493.641*	*255.866*
LEV	-1316.028	-992.675	-2015.043	-2754.266**
	925.283	*855.186*	*1319.494*	*1112.880*
MB	32.832	59.939***	25.599	76.742***
	23.289	*16.181*	*40.340*	*25.737*
ROA	-11414.390***	-12220.790***	-10683.030**	-9892.148**
	3372.770	*2568.091*	*5246.166*	*4015.734*
R&D	4.890	3.104***	2.607	2.310*
	3.465	*0.863*	*5.240*	*1.256*
CAPEX	0.214	-0.077	0.407	0.027
	0.231	*0.066*	*0.282*	*0.103*
CASHCOMP	-0.098	-0.032	-0.034	0.029
	0.074	*0.033*	*0.114*	*0.049*
LNPORTFOLIOINCENTIVES	241.596	76.176	392.422	67.132
	181.097	*102.355*	*294.047*	*145.963*
VEGA	*0.704*	0.944***	*-0.405*	0.245
	0.459	*0.322*	*0.675*	*0.400*
SEV	684.819	363.602	98.908	286.270
	461.605	*264.027*	*686.954*	*383.635*
Observations	361	401	360	401

***, **, * next to the mean indicate significance at the 1%, 5%, and 10% level respectively.

As previously mentioned, variables from the determinant model were evaluated as potential instrument variables for the 2sls. While five variables (ANNRET, EQUITY, CEO, BLOCK, and BOARDSIZE) were evaluated as potential instrument variables, two variables were selected as the best instruments – BLOCK and BOARDSIZE. The two director compensation variables ANNRET and EQUITY failed to show any correlation with the potentially endogenous variable SERP. The remaining variables CEO, BLOCK, and BOARDSIZE are all highly significant in the first stage of the model indicating the necessary correlation with SERP. The results are qualitatively unchanged using all three as instruments. I do not have any reason to believe that the three remaining instruments are correlated with the error term; however, post-estimation tests indicate that CEO may be related to the error term making the instrument semi-endogenous. Thus, BLOCK and BOARDSIZE were used to instrument for SERP. The results of the first stage regression, not tabulated, indicate that the two instruments chosen for SERP are highly correlated with the SERP. This satisfies the first condition that the instrumental variables be correlated with the endogenous variable. Furthermore, the F-statisitic is 14.42. Staiger and Stock (1997) believe that an F-statistic below 10 is cause for concern. The F-statistic of 14.42 clearly exceeds this threshold. To evaluate the identification of the equation, I calculate the Anderson canonical correlation statistic. I reject the null hypothesis at the 1% level indicating that the instruments have properly identified the equation (Baum 2006). I have used two instrumental variables to instrument for my one endogenous variable making the equation overidentified. This allows me to perform an overidentification test that will indicate whether or not the instruments are uncorrelated with the error term (Wooldridge 2010). The Hansen J-statistic is calculated to test the

overidentification of all instruments. The null is not rejected with a p-value=.2717 indicating that that the instruments are uncorrelated with the error term (Wooldridge 2010). These tests provide strong evidence that the instruments chosen are sufficient and that the model is properly identified. Furthermore, I employed Generalized Methods of Moments (GMM) estimation and found the results qualitatively unchanged. The results are not tabulated for the sake of brevity.

Although the magnitude of the coefficient estimates changed in the two stage model, the direction and significance of the coefficient estimates remains qualitatively unchanged. Furthermore, the effect of the SERP on risk in both two stage models was larger than in the ols model. It appears that any impact that endogeneity may have on the original ols estimates only understates the association between SERPs and risk.

Simultaneous Equations Analysis

The 2sls estimation discussed above provides consistent estimators; however, there is always concern that the estimators are not efficient using 2sls (Larcker and Rusticus 2010). To address this concern I employ a simultaneous equations model that simultaneously estimates a probit model of SERP and an ols model of firm risk in the first stage. The predicted values of each variable (SERP and firm risk) are used as explanatory variables in the second stage of the simultaneous equations. The standard errors are adjusted in a final stage. This follows the approach by Graham and Rogers (2002), Bebchuck et al. (2009), and Fauver and Naranjo (2010). By adjusting the standard errors in a final stage, the model produces more efficient estimates than the 2sls model. The specific model specification that I am working with requires that SERP be

measured as a binary variable in order for the probit model to function correctly. SERPBIN equals 1 if the CEO has a SERP and 0 otherwise. My first hypothesis tested the association between SERP size (SERP measured as a continuous variable) and firm risk. Because I have not yet specifically tested the relation between the existence of a SERP and firm risk, I first re-estimate equation one substituting SERPBIN for SERP. This allows me to directly compare the results of the simultaneous equations model with the ols specification.

$$RISK = \beta_0 + \beta_1 SERPBIN + \beta_2 LNASSETS + \beta_3 LEV + \beta_4 MB + \beta_5 ROA + \beta_6 R\&D + \beta_7 CAPEX + \beta_8 CASHCOMP + \beta_9 LNPORTFOLIOINCENTIVES + \beta_{10} VEGA + \beta_{11} SEV + \varepsilon \quad (5)$$

In Table 10 I only disclose the final result of the simultaneous equations model with corrected standard errors in columns (1) and (3). The results from equation (5) using SERPBIN as opposed to SERP are disclosed in columns (2) and (4). The coefficient for SERPBIN in the standard ols model indicates a negative and significant (at the 1% level) relation between having a SERP and firm risk for both firm risk models, consistent with prior findings. The simultaneous equations estimates for SERPBIN are also negative and significant (at the 1% level). The results of the simultaneous equations model combined with the results from the 2sls model provide strong assurance that endogeneity is not driving the results.

Table 10
Simultaneous Equations Estimation of SERP Impact on Firm Risk

This table presents the final stage results of a cross section of simultaneous equations regression estimates of the standard deviation of returns and equal weighted betas by firm in columns (1) and (3), respectively. Columns (2) and (4) present ols regression results using SERPBIN for comparability. These dependent variables were estimated for the 2006 fiscal year. Industry is controlled for using 1 digit SIC codes to avoid collinearity concerns. The dependent variables were multiplied by 10^4 to improve the display of the estimates (Sundaram and Yermack 2007). SERPBIN equals 1 if the CEO has a SERP. This information was collected from company proxy statements issued at the beginning of the 2007 fiscal year. Standard errors are reported in italics. All regressions are robust to heteroskedasticity. Leverage (LEV) is measured as total short and long term debt divided by total long and short term debt plus total stockholders' equity following Sundaram and Yermack (2007). MB is a one year lag ratio of market value to book value. ROA is a one year lag of net income divided by total assets. R&D and CAPEX represent a three year average of research and development and capital expenditures. CASHCOMP is a three year average of cash plus bonus compensation. LNPORTFOLIOINCENTIVES measures CEO pay-performance sensitivity and VEGA measures CEO pay sensitivity to stock return volatility. SEV is a binary variable equal to 1 if the CEO has a severance package.

Dependent Variables	Standard Deviation of Returns		Beta	
	1 (Simultaneous Equations)	2 (ols)	3 (Simultaneous Equations)	4 (ols)
SERPBIN	-685.275***	-1009.714***	-922.980***	-1246.244***
	164.152	*291.523*	*251.333*	*438.126*
LNASSETS	-738.414***	-903.151***	-722.409***	-925.586***
	94.610	*153.257*	*154.817*	*239.936*
LEV	-908.929**	-1763.446**	-1255.304**	-2296.150**
	383.061	*740.103*	*620.084*	*1100.681*
MB	32.915***	38.152*	22.036	16.983
	11.852	*21.117*	*19.047*	*41.358*
ROA	-10637.640***	-11129.920***	-9412.620***	-6624.293
	1315.952	*2755.134*	*2184.815*	*4554.243*
R&D	1.668***	1.728***	-1.515*	-1.224
	0.501	*0.636*	*0.852*	*1.437*
CAPEX	0.088*	0.129	0.244***	0.309**
	0.046	*0.100*	*0.076*	*0.129*
CASHCOMP	-0.005	-0.034	0.087	0.027
	0.033	*0.028*	*0.054*	*0.051*
LNPORTFOLIOINCENTIVES	-10.524	46.850	82.336	78.827
	55.206	*109.010*	*94.539*	*173.232*
VEGA	0.384*	0.500	-0.836**	-0.527
	0.224	*0.332*	*0.361*	*0.411*
SEV	191.257	-4.671	-527.285**	-519.240
	141.502	*279.288*	*233.067*	*468.914*
Observations	360	410	360	410

***, **, * next to the mean indicate significance at the 1%, 5%, and 10% level respectively.

CHAPTER VI
CONCLUSION

The challenge still exists for corporations to properly align management incentives with stakeholder incentives. Traditionally, maximizing shareholder returns has been discussed in the literature. More recently, concern has shifted from understanding pay-performance sensitivity to pay-risk sensitivity (SEC 2009). The vast majority of compensation research in accounting and finance has focused on annual compensation agreements. Annual salaries and equity incentives are very important in determining executive incentives; however, CEO SERPs must not be ignored. It is important that we understand the effect that these large SERPs have on firm risk.

My paper provides evidence that certain SERPs are negatively associated with firm risk and may reduce the agency costs of debt. However, if these SERP payments are sheltered by the firm then the negative association with risk is greatly reduced and even eliminated in some specifications. These findings are limited to the largest public companies in the US and may not be generalizable to all public companies. Future research will be required to make this determination.

As regulators, investors, and others in society debate the form, size, and structure of executive compensation these findings should be considered. While large in size, if structured correctly SERPs may help curb the excessive risk taking that many stakeholders believe to be an issue in the current economy. If the SERP arrangements are structured incorrectly, then the benefits of the SERP seem to dissipate.

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APPENDIX

SERP SHELTERING

Rights of Withdrawal

Because SERPs are subject to the volatility of the firm and are not protected by the same provisions as other retirement accounts, a CEO may maximize expected wealth by protecting the SERP. There are three basic levels of securing payment of the SERP. The first way to increase the security of payment is by defining rights of withdrawal. CEOs and companies may negotiate conditions that would give rise to an early withdrawal. To avoid immediate taxation, the early withdrawal clause must include a triggering event. Otherwise the CEO would be subject to taxation even before any withdrawal. A common form of the right of withdrawal is change of control agreement. The majority of CEOs have agreements in place that guarantee certain payments if their firm experiences a change of control.[13]

Rabbi Trust

The second layer of security for the SERP is securing the assets through a trust such as a Rabbi Trust. A company could contribute funds to the trust to be used for the sole purpose of funding the SERP. For the CEO to avoid immediate taxation on the amounts contributed to the trust, the trust must be available to the company's creditors in the event of bankruptcy.

[13] A change of control is defined as an event where a transfer of firm ownership occurs in which a person, group, or other entity obtains a fifty percent or more ownership stake in the firm. Executive compensation and severance agreements are generally written to provide compensation for an executive who is terminated because of a change of control.

Secular Trust

The third layer of security as described by Kennedy for a SERP is a secular trust. A secular trust is a fully funded trust that is not available to the company's creditors in the event of bankruptcy. This type of agreement creates a fully funded pension for the executive. This creates an immediate tax liability for the CEO; however, in some instances CEO pay is grossed up for the amount of the tax liability (Gerakos 2007). This would offset any negative consequences of a secular trust for the executive.

VITA

Colin D. Reid was born in Dallas, Texas. He attended school at Scofield Christian School in Dallas, Texas, Gallatin Gateway School in Gallatin Gateway, Montana, and Trinity Fellowship Christian School in Amarillo, Texas where he graduated from high school in 2000. He attended Baylor University from 2000-2005 receiving Bachelor in Business Administration and Master of Accounting degrees in May 2005. He graduated magna cum laude. Colin worked as an audit associate for PricewaterhouseCoopers in Dallas, Texas from 2005-2007 before deciding to return to school to pursue his doctorate. He began his doctoral studies in 2007 at the University of Tennessee. Colin graduated in May 2011 with a Doctor of Philosophy degree. He accepted a position as an assistant professor at Northeastern University.