CEO REWARDS: EXAMINING THE PAY-FOR-PERFORMANCE LINK IN NONPROFIT AND FOR-PROFIT ORGANIZATIONS

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CEO REWARDS: EXAMINING THE PAY-FOR-PERFORMANCE LINK IN NONPROFIT AND FOR-PROFIT ORGANIZATIONS

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Significant attention has been paid to executive pay. In over a thousand studies published on the topic of executive pay (Gomez-Mejia, Berrone, and Franco-Santos, 2010), most of the research revolves around answering one question: are executives rewarded for the performance of their organization? This literature, which is primarily based on agency theory, states that there is a separation of ownership and control in organizations, and because executives' interests are likely to diverge from owners' interests, executives may pursue their own interests over the interests of owners. Agency theory proposes that pay-for-performance systems are a key mechanism organizations can use to reduce agency costs (Jensen and Meckling, 1976). Therefore, under agency theory, an executive's pay is expected to vary with the performance of the organization he or she leads.

Yet, although there is a substantial amount of research that investigates pay-for-performance in for-profit firms, the results are generally mixed. Additionally, very few studies have addressed the pay incentives of nonprofit leaders. Therefore, we are left without a clear understanding of how organizations are compensating their top executives and whether agency theory offers the best explanation of executive pay.

My three-paper dissertation seeks to provide a better account of how organizations in different sectors use pay-for-performance systems to reward their top executives and why

organizations across sectors may compensate their CEOs differently. More specifically, I investigate the pay-performance link in both for-profit firms and nonprofit organizations, which includes "charitable and religious" organizations and labor unions. In the first chapter of my dissertation, I examine whether the strength of the relationship between executive pay and organizational performance increases with performance level, and how this relationship compares in the for-profit and nonprofit sectors and between female and male CEOs. In my second dissertation chapter, I study whether nonprofit CEOs are paid based on organizational performance and what organizational factors affect the pay-performance relationship in charitable nonprofits. Last, my third dissertation chapter focuses on the pay of union leaders by examining the extent to which two commonly used compensation theories, that is, agency theory and tournament theory, help explain the pay of union presidents.

BIOGRAPHICAL SKETCH

Felice Klein completed her Ph.D. in Human Resource Studies in the School of Industrial and Labor Relations at Cornell University in May 2012. Her current research interests include compensation, nonprofits, and human resource management. She also earned her M.S. from the Industrial and Labor Relations School at Cornell University and earned her B.S.B.A. in Finance from the University of Florida.

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CHAPTER 1

HOW STRONG ARE CEO REWARDS? IT DEPENDS ON ORGANIZATIONAL PERFORMANCE

ABSTRACT

I examine whether the strength of the relationship between executive pay and organizational performance increases with performance level, and how this relationship compares in the for-profit and nonprofit sectors and for female and male for-profit CEOs. The media has focused on the idea that executives are rewarded highly for performing well, but not penalized as severely for performing poorly. This suggests the link between pay and performance is weak for low levels of performance but increases as performance increases. However, many researchers of executive pay have assumed the pay-performance link is linear and report a single estimate to describe this relationship. I test this assumption using 2,678 unique for-profit firms and 13,466 unique nonprofit organizations. Controlling for size and for either individual or organizational fixed-effects, I find the relationship between for-profit CEO pay and performance is convex, that is, less strong at low levels of performance but increasingly strong at higher levels of performance. In contrast, I find a linear relationship between nonprofit CEO pay and performance across levels of performance. I find no difference in the pay-for-performance relationship between female and male CEOs. Last, I find that a number of different components of total compensation are causing the convex relationship between pay and performance in for-profit firms.

A large literature exists on the relationship between executive pay and organizational performance (Murphy, 1999). These studies, primarily based on agency theory, propose organizations seek to align the interests of their managers with the interests of owners by tying executives' pay to measure of performance. Although, most of the studies in this area support the idea that there is a positive and significant relationship between executive pay and organizational performance, the strength of this relationship is widely debated (Gerhart, Rynes, and Fulmer, 2009). Some researchers have argued the relationship is strong (e.g. Murphy, 1985), whereas other researchers have argued the relationship is weak (e.g. Jensen and Murphy, 1990; Bebchuk and Fried, 2004). Therefore, it remains unclear what the true relationship is between executive pay and organizational performance.

The media focuses on the idea that executives are rewarded highly when performance is good but not penalized when performance is poor. This suggests that the relationship between executive pay and organizational performance is weak for low levels of performance but is strong for higher levels of performance. Yet, most researchers of executive pay have assumed the pay-performance link is linear and reported a single estimate to describe this relationship[1]. By reporting a single estimate, this research fails to account for the idea that the correlation between pay and performance may be different depending on the level of organizational performance. If the media is correct, organizations may design executive compensation systems to provide more upside than downside risk, and this argument may help to address the mixed findings regarding the pay-for-performance relationship in the compensation literature.

[1] It is important to note that this estimate differs across studies, and this may be due to a variety of reasons including the performance metric that is used and the functional form of the variables (Florin, Hallock, and Webber, 2010). In this paper, I propose an additional reason for the different estimates found among studies.

Using Standard and Poor's ExecuComp data on for-profit firms from 1993 to 2009 and IRS 990 data on nonprofit organizations from 1998 to 2003, I examine the shape of the pay-performance relationship in both for-profit and nonprofit organizations. In addition, I seek to uncover what part of executive compensation may be causing a nonlinear relationship by investigating the individual components of total pay. Last, I consider whether there are differences in the shape of the relationship for male and female CEOs. In summation, I ask in this paper: 1) does the strength of the relationship between pay and performance increase with performance level, 2) what part(s) of compensation may be causing a nonlinear pay-for-performance relationship, and 3) how does the shape of the pay-performance relationship differ between for-profit and nonprofit organizations and for female and male for-profit CEOs?

This study offers a number of contributions to the executive compensation literature. First, there is mixed evidence regarding the strength of the relationship between pay and performance; some researchers argue the link is too weak to provide sufficient incentives for executives (Jensen and Murphy, 1990) while other researchers, who document a strong relationship between pay and performance, argue that CEO contracts are efficient (Murphy, 1985; Hall and Liebman, 1998). My study investigates an additional explanation for these inconsistent findings, that is, the strength of the link differs depending on performance. Second, very recently authors have begun to recognize that certain factors can influence the degree of agency costs a firm incurs. Boivie, Lange, McDonald, and Westphal (2011) examined pay data from 2,000 U.S. public companies and found that CEOs who identify closely with their organization are less likely to exert their influence to attain high levels of compensation when their firm is performing poorly. My study builds on this work by studying whether certain factors affect the relationship between pay and performance, that is, certain factors may induce

organizations to expose pay more equally to both upside and downside risk. Third, in this study, I break down compensation to examine whether the various forms of compensation have a different relationship with performance. This allows me to investigate which parts of compensation may contribute to large upside pay gains for CEOs when performance is good and to very little downside pay losses for CEOs when performance is poor.

BACKGROUND AND THEORY

Traditional Views of Executive Pay and Performance

Much of the research on the relationship between pay and performance is motivated by agency theory (Murphy, 1999; Gerhart, Rynes, and Fulmer, 2009). Agency theory begins by recognizing that in most corporations there is a separation of ownership and control. Because owners (principals) hire managers (agents) and delegate a substantial amount of control to them, problems may arise. These problems are known as agency costs. Specifically, agents are assumed to be risk averse, self-interested, and driven by different motives than principals (Jensen and Meckling, 1976).

Pay-for-performance systems are used to alleviate the agency problem by aligning executives' and shareholders' interests (Eisenhardt, 1989; Gomez-Mejia and Balkin, 1992). As Hall and Liebman (1998) stated, "Aligning the incentives of executives with those of owners is the most direct way to mitigate the agency problem" (pg. 654). Compensation systems under agency theory are thought to be efficient and created in the best interest of shareholders. Jensen and Murphy (1990) argued that shareholders' main goal is to maximize their wealth, therefore agency theory predicts that CEO compensation should depend on shareholder wealth.

Previous studies examining executive pay and organizational performance have focused on measuring the strength of this relationship by reporting a single estimate. Although the strength of the relationship may differ, a number of studies have reported a significant and positive association between pay and performance. Murphy (1985) used data from 1964 to 1981 and found a strong positive link between executive pay and performance. Jensen and Murphy (1990) followed 2,213 CEOs using Forbes data and found that CEO wealth changes $3.25 for every $1000 change in shareholder wealth. Although they found a positive and significant estimate, it is important to note that these authors argued that this relationship is small and does not provide adequate incentives for CEOs. Hall and Liebman (1998) also documented a strong positive correlation between firm performance and CEO compensation by including the value of CEO holdings and stock and stock options in their measures of total compensation. Further, countering the media and some researchers, Hall and Liebman (1998) found that CEOs can actually lose money and that this contributes to the large link they found between pay and performance. Last, Bertrand and Mullainathan (2001), using data on large corporations over the 1984 to 1991 period, documented that CEO pay (total compensation and total cash) increases by 0.3 percent when shareholder wealth increases by 1 percent, and Berrone and Gomez-Mejia (2009), using data from 1997 to 2003 on 469 U.S. firms, found log CEO total pay and Tobin's Q are significantly related with an estimate of 0.24.

As illustrated in figure 1, the above discussion and past research suggests:

Hypothesis 1 (H1): A positive and significant linear relationship exists between CEO pay and organizational performance across performance levels.

Nonlinear Relationship between Executive Pay and Performance

Linear models used by researchers in previous studies to examine the relationship between pay and performance may have failed to capture how organizations actually structure CEO's pay. As the media indicates (e.g. Stewart, 2011; Krantz 2011; Craig, 2012), and as Crystal first noted in 1991, CEOs may be rewarded highly when performance is good but not penalized when performance is poor. Crystal (1991) stated, "… pay has much more upside than downside elasticity" (pg. 98), which suggests the strength of the relationship increases as performance increases. As mentioned above, the findings regarding the strength of the pay-performance relationship are mixed. This may be due to the changing relationship between pay and performance across the performance spectrum. Both the managerial power hypothesis and agency theory provide explanations for why organizations may structure executive pay incentives to have a nonlinear relationship with organizational performance.

Managerial Power Hypothesis. Some researchers (e.g. Bebchuk and Fried, 2004; Nyberg, Fulmer, Gerhart, and Carpenter, 2010) have argued that agency theory does not provide an adequate account of executive compensation practices in for-profit firms. Specifically, Nyberg et al. (2010) wrote, "agency theory may not tell the whole story" (pg. 1029). Bebchuk and Fried (2004) proposed managerial power theory[2] to help explain how for-profit executives are paid. Managerial power hypothesis begins with the same problem of separation of ownership and control as agency theory; however, instead of predicting that pay incentives can be used to fix the agency problem, this theory suggests that board decisions and compensation packages are the result of an influence process that is managed by CEOs (Singh and Harianto, 1989; Bebchuk and Fried, 2004).

[2] Also known as skimming, managerialism, and rent extraction view.

Basically, the managerial power hypothesis suggests that managers use their position of power to obtain higher pay[3] and this occurs at the expense of the owners of the organization (Gomez-Mejia et al., 2010). Rent extraction can occur in a number of different ways (Bebchuk and Fried, 2004). First, managers, similar to most workers, simply would prefer to have more pay, so they may use their power over boards to receive higher pay than they could without power. Second, under this theory is the idea that managers would prefer to bear less risk with their paychecks and would also prefer to enjoy as much slack as possible. Yet, efficient compensation contracts are said to reduce slack, thereby discouraging managers from pursuing self-serving strategies (Bebchuk and Fried, 2004). In essence, the managerial power hypothesis predicts that managers with power will, in fact, receive a high paycheck without cutting any managerial slack. Last, this perspective predicts that because CEOs have power over their board of directors, they will be able to obtain high paychecks even when firm performance is poor. This would suggest that executive compensation packages are structured to avoid downside risk-- when performance is poor, pay appears to be decoupled from performance. As stated by Gomez-Mejia et al. (2010) when describing the managerial power hypothesis[4], executive pay packages will be designed "… so that pay is flexible to move up as firm performance improves but will not suffer if performance declines. Therefore, variability, downside risk, and uncertainty are largely removed from their pay packages" (pg. 125).

A pay package where high pay is decoupled from firm performance may be seen as inefficient to shareholders because "high pay and lavish perquisites given to CEOs regardless of firm performance require the use of resources that otherwise could be invested internally or

[3] The additional pay that is above what a manager would receive under an efficient contract is known as rents.

[4] These authors call it managerialism.

distributed to shareholders" (Boivie et al., 2011, pg. 554). Therefore, under this theory, a pay package where pay and performance are strongly related when performance is good, but weakly related when performance is poor, does not appear to be in the best interest of shareholders. The managerial power hypothesis suggests that because CEOs have power and influence, they will be able to obtain high pay regardless of performance.

Agency Theory. Although the above arguments may seem to suggest that a nonlinear pay-performance relationship counters agency theory as a pay package that avoids downside risk is inefficient for shareholders, I believe that a nonlinear relationship may actually be predicted by agency theory. Agents are risk averse because they are not diversified in both employment and compensation (Gerhart and Rynes, 2003). Rappaport (1978, 1981, 1986) argued that executives are more risk averse than firm owners. This is because if a firm fails to meet some performance standard, the penalty for the executive is termination of employment. So an executive's job (and therefore paycheck) is not protected by diversification in the same way as most stockholders' portfolios (Gomez-Mejia et al., 2010). Yet due to shareholders' investments being diversified, shareholders are naturally more risk neutral than managers. Pay-for-performance contracts have desirable incentive properties for owners, but they tend to have unfavorable risk properties for executives (Gerhart and Rynes, 2003). This suggests that the optimal contract, and most efficient executive pay contract for shareholders, may actually be nonlinear, that is less strongly related for low levels of performance but highly related for high levels of performance. This type of pay arrangement may be efficient because by lessening the downside risk, executives may be more likely to pursue risky organizational decisions that could result in large payouts for shareholders.

Some past researchers have noted that organizations must take CEO's risk aversion into account when designing compensation packages to encourage executives to be more risky with their decisions. Jensen and Murphy (1990) argued that CEOs are not risk neutral and that the reason public corporations were created was to achieve efficiencies in risk bearing. Further, Frydman and Jenter (2010) claimed that the optimal compensation contract for CEOs must provide both the incentive for the CEO to take on risk and ensure the risk-averse manager is not exposed to too much volatility in his / her pay. As stated by Jensen and Murphy (1990), "… CEO risk aversion coupled with even moderately high sharing rates in large companies will cause CEOs to avoid some high-risk positive NPV (net present value) projects that are optimal from the perspective of diversified shareholders" (pg. 657). It is clear that owners use compensation to influence executives to make decisions that are aligned with their own risk preferences. Because owners are more risk neutral than executives, the most efficient compensation contract for shareholders may be a contract that is highly tied to performance yet avoids downside risk.

Does a Nonlinear Relationship Exist? Although the managerial power and agency frameworks take different perspectives on whether a nonlinear relationship between pay and performance is efficient for shareholders, both theories seem to suggest that organizations may structure executive pay practices to be highly related to performance when performance is good, but be less related to performance when performance is poor.

A few previous studies have suggested the pay-performance relationship may be nonlinear. Antle and Smith (1986) used a nonparametric test to examine executive pay and relative performance and found that linear models do not capture the shapes of compensation contracts. These authors plotted the residuals of total compensation against return and ROA and

found their results were suggestive of a nonlinear relationship between executive total compensation and performance. Miller (1995) used Forbes data from 1983 to 1989 and found that there is no support for a linear relationship between pay and performance. Specifically, by regressing salary on performance, defined as net profit divided by sales, he found a negative first term for performance, a large positive second term, and a smaller but positive third term[5]. Last, Hall and Liebman (1998) noted (in footnote 30) when plotting their data, that there does not appear to be a linear relationship between total compensation and return.

As shown in figure 2, the above discussion suggests:

Hypothesis 2 (H2): The relationship between CEO pay and organizational performance is convex across performance levels (such that it is less strong at low levels of performance but increases with higher levels of performance).

Components of Compensation and a Nonlinear Relationship

If a nonlinear relationship exists in the link between pay and performance, the next important question to ask is, what part(s) of compensation is causing this to occur? A convex relationship would suggest that pay and performance are decoupled when performance is poor, that is, executives are rewarded even when shareholders lose money, and that pay and performance are highly related when performance is good, so both executives and shareholders gain greatly when performance is good. The managerial power perspective provides some explicit predictions on which components of pay are causing the decoupling of pay and

[5] He does not control for organization or individual fixed-effects in the models addressing the functional form of the relationship. However, he does lag all his independent variables and controls for each year and each industry. Replicating Miller's analysis with data from 1993 to 2009 and controlling for the 2-digit industry, I find positive and significant estimates on the first, second, and third performance term. However, when I control for the organization or individual CEO with fixed-effects, none of the performance terms are significant.

performance when performance is poor, whereas agency theory provides us with some clear predictions on what parts of pay are leading to the strong relationship between pay and performance when performance is good. Although agency theory does not speak directly about decoupling pay from performance, as I discussed above, the decreasing strength of the relationship at lower levels of performance does not conflict with an agency theory perspective because a nonlinear relationship may be most beneficial for shareholders who want executives to pursue risky decisions.

The managerial power perspective suggests that when executives receive payouts even when performance is poor, it is likely to occur through pay practices that are less observable, easier to defend, appear to be based more on performance, and are more difficult to value (Bebchuk and Fried, 2004; Frydman and Jenter, 2010). Specifically, Bebchuk and Fried (2004) argued that the decoupling of pay and performance happens through stock options, perquisites, pensions, and severance pay (Frydman and Jenter, 2010). Further, Frydman and Jenter (2010) stated, "… the widespread use of "stealth" compensation is difficult to explain if compensation were simply the efficient outcome of an optimal contract. Even though perks, pensions, and severance pay[6] can be part of optimal compensation, hiding these compensation elements from shareholders is suggestive of rent extraction. Similarly, the widespread practice of executives hedging exposures to their own firm, again with minimal disclosure, is difficult to justify" (pg. 91). Additionally, Bebchuk and Fried (2004) argued that although bonuses are used to reward good performance, so a clear pay-performance relationship would be expected to exist for bonus pay, organizations have provided this form of pay even when objective performance is poor.

[6] Known as "other" compensation.

This is because bonuses can be rewarded based on both objective (e.g. shareholder return and market value) and subjective (e.g. effective leadership or making strategic decisions) criteria.

Therefore, the managerial power perspective suggests that "other" pay, option grants, and bonuses may have no relationship with measures of performance shareholders care about. That is, "other" compensation, defined here to include perks, pensions, and severance, may have no relationship with performance because these forms of pay are negotiated at the beginning of an executive's contract and rewarded regardless of performance. As an example, severance packages are rewarded when a CEO performs so poorly he / she is asked to leave. Further, Bebchuk and Fried (2004) argued that option grants are decoupled from performance because organizations have tended to either reload options that have been exercised or to reprice options that have fallen out-of-the-money. By doing this, organizations are clearly providing additional pay to executives which is unrelated to organizational performance. Last, bonuses may have no relationship with performance measures that shareholders care about because bonuses are based on both subjective and objective criteria, so even if shareholders lose money, a board may still choose to award a bonus to an executive based on such things as meeting a budget, surpassing the previous year's goals, making strategic decisions, or being an effective leader (Bebchuk and Fried, 2004).

Therefore, the managerial power perspective suggests:

Hypothesis 3a (H3a): There is no relationship between "other" pay and performance.

Hypothesis 3b (H3b): There is no relationship between option grants and performance.

Hypothesis 3c (H3c): There is no relationship between bonuses and performance.

Agency theory predicts that organizations seek to align the interests of executives with shareholders by linking their pay to organizational performance. Hall and Liebman (1998) stated, "One of the key challenges of effective governance is solving the agency problem… the most direct solution to this agency problem is to align the incentives of executives with the interests of shareholders by granting (or selling) stock and stock options to the CEOs" (pg. 656). Equity, both stock option grants and stock grants, provide executives with an ownership stake in the firm, and therefore create incentives for managers to pursue actions that are aligned with shareholders' interests (Frydman and Jenter, 2010). Further, Hall and Liebman (1998) argued that equity-based pay may be the only way to create high-powered incentives for CEOs. Additionally, bonuses are often used by organizations to explicitly tie pay to good performance (Murphy, 1999) and long-term incentive plans (LTIPs), which are bonuses based on performance over more than one year, have been widely promoted[7] as a way to align executive and shareholder interests (Westphal and Zajac, 1994). Therefore, agency theory predicts that option grants, stock grants, LTIP, and bonuses will be tied to performance.

This suggests the following hypotheses:

Hypothesis 3d (H3d): There is a positive and significant relationship between option grants and performance.

Hypothesis 3e (H3e): There is a positive and significant relationship between stock grants and performance.

Hypothesis 3f (H3f): There is a positive and significant relationship between LTIP and performance.

[7] LTIPs are promoted but not often utilized by organizations (Westphal and Zajac, 1994).

Hypothesis 3g (H3g): There is a positive and significant relationship between bonuses and performance[8].

Nonprofits and a Nonlinear Relationship

Similar to for-profits, nonprofit board of directors set the pay, determine the pay policies and practices, and evaluate the performance of the CEO. These directors often struggle with many of the same compensation issues faced by for-profit boards (Bowen, 2008). However, ownership differs in the nonprofit sector. Researchers of nonprofits typically discuss the governing board (e.g. Steinberg, 2006) as the closest comparison to owners in the for-profit sector[9]; however, these owners are said to have attenuated property rights (Steinberg, 2006). This is because while "ownership of an asset consists of the right to control its use and to enjoy its return" (Ben-Ner and Jones, 1995, pg. 532), directors in nonprofits do not enjoy all these rights. Nonprofit owners are able to control the use of the organization and transfer that control, but are not able to enjoy any profits generated by the organization.

As stated above, agency theory begins with the separation of ownership and control and predicts that executives may pursue their own interests over the interests of owners. For-profit owners adopt pay-for-performance plans to ensure executives' interests are aligned with their own interests. Further, agency theory suggests that agents are risk-averse and boards design compensation systems that recognize this in order to influence executives to make more risky decisions.

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[8] Agency theory's prediction on bonuses counters the prediction of managerial power hypothesis on bonuses. As discussed above, bonuses can be based on a wide variety of performance metrics, so the relationship found between pay and performance may depend on the definition of performance.

[9] Though, some researchers have also argued that members (in the case of membership organizations) and donors can be described as quasi-owners of a nonprofit organization (Bowen, 2008).

Although nonprofits are similar to for-profits in that there is a separation of ownership and control, nonprofit executives' interests are much more likely to be aligned with the interests of the owners of the organization than would be expected in the for-profit sector. Oster (1995) argued that people choose to work for nonprofits for ideological reasons and will sacrifice some of their pay to work for an organization they believe in. Further, Rose-Ackerman (1987) contended that individuals who are attracted to nonprofit organizations care less about money, and Hansmann (1980) described nonprofit employees as "non-greedy". Pay does not appear to be the main driver of behavior for nonprofit employees, as these individuals would seek jobs in other sectors if it were. This suggests that there is less of a need for alignment of interests through a pay-for-performance system in nonprofit organizations[10]. Further, because nonprofit managers' interests are already likely to be aligned with owners, nonprofit managers may even be willing to share some of the risk with the organization, which includes both the upside and downside risk. Last, owners of nonprofits may not want managers to be too risky with their decisions because owners of nonprofits are not diversified like they are in for-profits, and nonprofit owners may be intrinsically invested in the organization and want to see this organization succeed. This all suggests that lessening the downside risk in executive compensation packages may not be seen as an efficient strategy in nonprofits, and therefore the relationship between pay and performance may be consistent across good and bad performance in nonprofits.

The managerial power hypothesis may also suggest a linear relationship between pay and performance in nonprofits. This theory as well begins with the separation of ownership and control, but suggests that CEOs have power and use their power to obtain higher rents at the

[10] Due to this explanation, a smaller link between pay and performance is likely to exist in the nonprofit sector.

expense of owners. As Boivie at al. (2011) stated, "…high pay and lavish perquisites that are decoupled from firm performance create agency costs by benefiting a firm's CEO while harming the firm's finances and image…" (pg. 554). I believe nonprofit executives are less likely to take advantage of their power to gain more compensation at the cost of owners of the organization, for the same reasons listed above, that is, they are attracted to nonprofits for ideological reasons and are less driven by money.

Yet, mixed evidence regarding the pay-for-performance relationship has also been found in nonprofit organizations. Using data from 1994, Oster (1998) found organizational size was a strong predictor of nonprofit executive compensation. Hallock (2002) investigated the determinants of nonprofit executives' pay with tax returns data from 1992 to 1996. He also found a link between organization size and CEO pay; however, he noted that the pay-performance link is only significant when performance is measured as organization size. Frumkin and Keating (2010) examined pay-for-performance of nonprofit CEOs using IRS 990 data from 1998 to 2000 and found that nonprofit CEO pay is only modestly affected by performance. It is possible that a nonlinear relationship between pay and performance also exists in nonprofit organizations, and if found, will help to explain the mixed findings in this literature. However, as I explained above, I expect the relationship is more likely to be linear than in the for-profit sector.

Therefore the above discussion suggests:

Hypothesis 4 (H4): The relationship between nonprofit CEO pay and performance is linear across performance levels.

Gender and a Nonlinear Relationship

In general, researchers investigating gender and pay-for-performance systems have found differences in how female and male executives are paid (e.g. Albansi and Olivetti, 2008; Selody, 2010; Kulich, Trajanowski, Ryan, Haslam, and Renneboog, 2011) and that these differences in variable pay explain a significant portion of the gender wage gap (Munoz-Bullon, 2010). However, I believe that while managerial power theory suggests that there will be a different shape between pay and performance for male and female executives, agency theory suggests a different result -- that a similar shape between pay and performance exists for female and male executives. Specifically, I believe the managerial power hypothesis predicts that males are shielded from downside risk, yet females are equally exposed to both upside and downside risk in their pay packages. Conversely, agency theory predicts that organizations offer pay packages that provide high gains but low penalties to both female and male CEOs.

Female CEOS may have less power in their organization due to being younger, having lower tenure, and having limited access to informal networks than male CEOs (Albanesi and Olivettti, 2008). Under the managerial power hypothesis, this would suggest that females are less entrenched than male CEOs and, therefore, female CEOs may have less control over their boards. This may indicate that organizations that have female CEOs may design CEO compensation packages to be exposed to both upside and downside risk which would support a linear relationship between pay and performance.

Previous studies on the pay-for-performance relationship between female and male executives have found differences in how top managers are compensated. Albanesi and Olivetti (2008) found that female pay is more sensitive to bad performance and less sensitive to good

performance than male pay. They argued that the managerial power hypothesis explains this finding. Specifically, they contended that the efficient contracting model cannot explain why "females are more exposed to the risk of adverse firm performance and why their compensation is less sensitive to aggregate stock market conditions" (pg. 4). In addition, Selody (2010) found that women have a similar pay-to-performance sensitivity as men when firm market value increases, but twice the sensitivity when market value decreases[11].

Agency theory assumes agents are risk averse and as I discussed above, I believe organizations may reduce the downside risk in CEO pay packages to ensure CEOs are making risky decisions. A number of studies have suggested that women are more risk averse than men (Hallock and Olson, 2009), which may suggest a nonlinear relationship will be more likely to be found for female executives because these executives may be less likely to make risky decisions. Specifically, Hallock and Olson (2009) argued that men tend to be more overconfident than women, and this may lead men to take more risks than women. For example, Eckel and Grossman (2002), using subjects in a laboratory experiment, asked both women and men to choose among five alternative gambles with different financial stakes. These authors found that women are significantly more risk-averse than men; that is, women are more likely to choose the least risky gamble, whereas men are more likely to choose the most risky gamble. Powell and Ansic (1997) used two computerized laboratory experiments to examine whether risk-taking differences found in previous studies between women and men can be explained by context. These authors found that females are less risk seeking irrespective of the context. Last, Byrnes, Miller, and Schafer (1999) conducted a meta-analysis of 150 studies on risk-taking. Their results suggested that males are more likely to show risk-taking behaviors. This discussion indicates

[11] She argued that this is consistent with boards exhibiting an attribution bias against females.

that females tend to be more risk averse than males, and therefore, organizations with female CEOs may structure pay to be highly related to performance yet avoid downside risk to ensure these managers are making risky decisions.

Managerial power hypothesis and agency theory offer the following conflicting predictions regarding the relationship between pay and performance:

Hypothesis 5a (H5a): The relationship between female CEO pay and performance is linear across performance levels, whereas the relationship between male CEO pay and performance is convex across performance levels.

Hypothesis 5b (H5b): The relationship between female CEO pay and performance and the relationship between male CEO pay and performance are convex across performance levels.

EMPIRICAL SPECIFICATION

Previous work investigating the pay-performance relationship using agency theory has estimated the following equation:

$$\ln C_{it} = \beta_1 \ln P_{it} + \beta_2 \ln A_{it} + \beta_3 X_{it} + \alpha_i + \varepsilon_{it} \qquad (1)$$

where C is the total compensation of the CEO, P is performance (defined as return in for-profits or revenue for nonprofits), A is the total assets of the organization, X is CEO-specific variables such as age and tenure, and ($\alpha_i + \varepsilon_{it}$) represents the error term that contains both transitory and permanent effects. Organizations and time are represented by the subscripts *i* and *t*.

The above model assumes that the relationship between pay and performance is consistent across performance levels. To examine whether this assumption is true, I included an

additional variable, performance-squared, to my model. Therefore, my basic empirical model becomes:

$$\ln C_{it} = \beta_4 \ln P_{it} + \beta_5 \ln P^2_{it} + \beta_6 \ln A_{it} + \beta_7 X_{it} + \alpha_i + \varepsilon_{it} \qquad (2)$$

with the inclusion of performance-squared to estimate whether the relationship between compensation and performance changes with higher performance. If a convex relationship exists between CEO pay and organizational performance, β_5 will be positive and significant.

It is unlikely that the organizational characteristics fully explain the pay of the CEO in both for-profit and nonprofit organizations. Additionally, omitted variables may confound the relationship between pay and performance. Therefore, I included organizational fixed-effects to control for all observable and unobservable organizational characteristics that do not change over time. The estimates from equation (2), with the inclusion of organizational fixed-effects, will be consistent if I assume that endogeneity comes only from time-invariant sources. Further, by controlling for the organization, I am able to look within organizations to determine how the variation of the independent variables (e.g. performance) affects the variation of the dependent variable (that is, total compensation).

METHODS AND DATA

Data

The data on for-profit organizations comes from Standard & Poor's EXECUCOMP database for the years of 1993 to 2009. All organizations in the for-profit sector are required to disclose basic financial information and information regarding the pay of the five highest-paid employees to the Securities and Exchange Commission (SEC). I deleted any observations where

pay, market value, and assets are missing or less than 1,000. Further, I dropped all observations where my main performance variable, that is, return, was greater than 1000%. This resulted in an average return of approximately 17%, which is similar to previous studies using return as performance (e.g. Nyberg et al., 2010; Wowak et al., 2011; Kulich et al., 2011). Last, I dropped all observations where gender was missing for the CEO. Finally, I was left with 23,295 observations of data for 2,678 unique firms.

The data on nonprofit organizations comes from tax returns of 501c(3) tax-exempt organizations for the years of 1998 to 2003; specifically, the sample included in this paper are organizations that file Form 990. For an organization to be officially designated as a nonprofit, it must file forms with the IRS. Registered nonprofits are excluded from having to pay taxes but are required to file Form 990 if their net revenue is greater than $25,000. More than half of nonprofit organizations are 501c(3) organizations, also known as charitable organizations. According to the IRS, nonprofits are considered charitable because they serve "broad public purposes include[ing] educational, religious, scientific, and literary activities, among others, as well as the relief of poverty and other public benefit actions" (Stevenson, Pollak, and Lampkin, 1997). I deleted from my sample all observations where pay, assets, and revenue is missing or less than 1,000, and where pay is greater than $10 million. This resulted in 50,512 observations of data, which represents 13,466 unique organizations.

Measures

Total compensation. My main dependent variable for both for-profit and nonprofit organizations was total compensation for the CEO of each organization. In the for-profit sector, total compensation included salary, bonus, other annual compensation, total value of restricted

stock granted (total amount awarded during the year), total value of stock options granted (total amount awarded during the year), long-term incentive payouts, and other. The total compensation measure I used in this study included the value of options when they were granted. Previous research has included the value of stock options when they were exercised; however, as discussed by Hallock (2004), including the value of stock option grants instead provides a more accurate picture of the actual pay that an executive receives in a given year. Further, similar to previous studies (e.g. Bertrand and Mullainathan, 2001), I used total compensation granted in the same year for most of my analyses. In additional analyses, I examined how performance affects different components of compensation. Following Frydman and Jenter (2010), I defined the basic components of compensation as: 1) salary, 2) bonus, 3) LTIP (long-term incentive plans are bonus plans based on more than one year and are paid out in both equity and cash), 4) stock option grants, 5) stock grants, and 6) other annual (which includes perks, defined benefit pension plans, severance payments, etc.).

In the nonprofit sector, I defined total compensation as the sum of base compensation (which includes salary, fees, bonuses, and severance payments paid), contributions to employee benefit plans and deferred compensation, and expense account and other allowances.

Performance. My main objective was to examine whether the relationship between pay and performance changed, specifically increased, as performance increased. Therefore, defining performance was critical. Based on past studies (Murphy, 1985; Wowak et al., 2011), I defined performance in the for-profit sector as total shareholder return (TSR). Hall and Liebman (1998) argued that return is a better measure than shareholder wealth, because looking at CEO wealth in regards to market value is a "misleading picture of pay to performance" as the denominator is so

large that the change in CEO wealth, of course, appears very small (pg. 656). Further, instead of using accounting measures of performance, such as net income and return on assets, I used return measures, because as stated by Gerhart et al. (2009), "excluding shareholder return in measuring firm performance is likely to lead to biased estimates of the strength of the overall incentive alignment" (pg. 285). Because return can be negative and I want to look at the elasticity of CEO pay to return, I specifically defined performance as the log of return plus one (similar to Murphy, 1986).

As I indicated above, performance in the for-profit sector has been defined in a number of ways. Therefore, I also tested my main hypotheses with additional measures of performance. In addition to return, I used net income before extraordinary items and discontinued operations as a measure of accounting performance (similar to Bertrand and Mullainathan, 2001), and I also used shareholder wealth (similar to Jensen and Murphy, 1990). Last, I tested my main hypotheses with lagged performance because some parts of compensation may be rewarded based on the previous year's performance.

My main measure of nonprofit performance was total revenue. As stated by Galaskiewicz, Bielefeld, and Dowell (2006), "organizational research has shown that nonprofits are driven by resource enhancement" (pg. 340). However, performance can also be defined in a number of different ways in the nonprofit sector. So, I also tested whether there is a nonlinear relationship between nonprofit CEO pay and organizational performance when performance is defined as total assets (similar to Hallock, 2002).

Control variables. Several measures were used as controls in my study, many of which have been found in previous studies on CEO pay. I used total assets as a control for firm size in

both the for-profit and nonprofit sector. Further, both age and tenure have been found to be important determinants of pay (Murphy, 1986; Hill and Phan, 1991), so in the for-profit sector I also controlled for the age of the CEO and tenure of the CEO, as well as included the squared terms for each of these variables[12].

RESULTS

Table 1 displays the summary statistics for for-profit organizations, and provides separate descriptive data for organizations lead by male CEOs and female CEOs. All monetary values were changed to 2003 dollars. Table 2 reports the summary statistics for nonprofit CEOs and is also displayed in 2003 dollars. It is clear that nonprofit CEOs are paid significantly less than for-profit CEOs. That is, on average nonprofit CEOs are paid $191,542, whereas for-profit CEOs are paid on average $4,825,855. Further, it is clear that for-profit organizations are much larger than nonprofit organizations, as seen by comparing the total assets for for-profits of approximately $13 billion to the average for nonprofit organizations of $124 million.

Table 3 shows the regression results for the test of a nonlinear relationship between pay and performance. Model 1 includes control variables and performance, that is, logged (1 + return). This model, similar to past studies, appears to indicate that there is a significant and positive linear relationship between CEO pay and organizational performance, which seems to provide support for hypothesis 1. However, in Model 2 I added performance-squared in order to test hypothesis 2, which posits that the relationship between pay and performance is not linear

[12] The sign and significance of my main results did not change when I left out the age and tenure variable from regressions of for-profit CEO pay. I did this in order to compare the for-profit pay results to the regressions of nonprofit CEO pay because I did not have data on CEO characteristics in the nonprofit sector.

but actually increases with performance. Hypothesis 2 counters the prediction of hypothesis 1. It is clear by looking at models 2 through 6 that there is a positive and significant estimate on performance squared. Model 3 includes year effects and model 4 also includes industry effects. Model 5 controls for the organization, and last, model 6 controls for the individual. In each model, the estimate on the squared performance measure is positive and significant. This indicates that the relationship between pay and performance is not linear but, instead, convex and provides support for hypothesis 2.

To further examine the shape of the relationship between pay and performance, in table 4, I created dummy variables based on an organization's performance in a given year compared to performance of a) other organizations in the same two-digit code and b) all organizations in the market. The dummy left out of each regression is the 0 to 20 percent dummy, which indicates that the organization performed in the lowest 20% compared to its industry or the overall market. Equation (1) and (4) includes controls for the industry, equation (2) and (5) includes controls for the organization, and equation (3) and (6) includes controls for the individual. Looking at each regression in the table, it appears that the relationship between pay and performance increases as performance increases but increases more substantially at greater levels of performance. This provides further support for hypothesis 2.

Because both contemporaneous and lagged performance have been found to be important determinants of CEO pay, in table 5 I ran regressions of CEO compensation on lagged performance and lagged performance squared. Panel A displays the results of regressions with only lagged performance, whereas panel B displays the results of regressions including both lagged performance and contemporaneous performance. In panel A, it is clear that the coefficient on the lagged squared performance variable is positive and significant even when

controlling for the organization in column (5) and the individual CEO in column (6). In panel B, both the squared performance variable and the lagged squared performance variable are positive and significant in every model. These results are again consistent with tables 3 and 4 and provide support for hypothesis 2.

Last, in table 6 and 7, I tested hypothesis 2 with additional means of examining the pay-for-performance relationship. Specifically, in table 6, I used an accounting measure of performance, net income[13], and in table 7, I estimated the pay-performance sensitivity. Again, similar to the results with market-based performance, I find a convex relationship between executive pay and net income in table 6. Table 7 displays the results of the regressions of the change in total compensation on the change in shareholder wealth and the change in shareholder wealth squared[14], and the regression of the change in the log compensation on the log return and log return squared[15]. It is clear that the squared terms are significant in all models, again providing support for hypothesis 2. All of the results discussed above seem to suggest that the relationship between pay and performance is not linear as is assumed in most previous studies examining the strength between executive pay and organizational performance. Instead, the relationship appears to be convex, that is, less strong at lower levels of performance but increases as performance increases.

In table 8, I investigated which parts of compensation may be causing the nonlinear relationship between pay and performance. I broke down compensation into salary, bonus, LTIP, option grants, stock, and "other", and further defined compensation as the log of (y + 0.01). I did

[13] I did not log net income because this can be negative. Specifically, 3,802 organization-years have negative net income.

[14] This estimates the Jensen and Murphy (1990) statistic but includes the squared performance term.

[15] This is similar to the regression used in Murphy (1986).

this because in many organizations compensation data is zero for at least one component of pay. Therefore, this set-up allowed me to include all organizations in my sample even if they do not provide their CEO with any one form of compensation. For each dependent variable, I regressed log (form of compensation + 0.01) on performance, performance squared, size, CEO characteristics, and either included organizational or individual fixed-effects. Looking at table 8, and focusing on the columns that include individual fixed-effects as these are the most conservative tests of my hypotheses, it appears that no relationship exists between salary, option grants, and "other" compensation and performance. As hypothesized, this provides evidence for hypotheses 3a and 3b. Further, there appears to be a linear and positive relationship between both stock grants and LTIP and performance[16]. It is important to note that the measure of stock in this study is the amount awarded in stock grants[17], and therefore the measure represents a reward by the organization and is not explicitly based on the value of the same underlying assets as return, that is, company stock. The linear results of stock and LTIP support hypotheses 3e and 3f. Last, there appears to be a nonlinear / convex relationship between bonus and performance.

Table 9 compares pay and performance in both the for-profit and nonprofit sectors. All models include both year and organizational fixed-effects. Whereas the squared performance variable is positive and significant in for-profit firms, the squared performance variable is not significant in nonprofit organizations. Further, adding the squared term in the nonprofit sector does not explain any additional variation in CEO pay, which is evident by looking at the R-squared. I find similar results when using total assets as performance and controlling for size with total revenue, but choose not to present them here. The results in table 9 seem to provide

[16] The significance of LTIP and performance is small. This may be due to the small number of organizations that award LTIP; specifically, only 651 organizations awarded LTIP in the years of my data.

[17] This is not based on the revaluation of stock holdings.

support for hypothesis 4, that is, the relationship between nonprofit CEO pay and performance is linear[18].

Finally, I compared whether a different shape exists between pay and performance for female and male for-profit CEOs in table 10. I did not control for CEO age or CEO tenure in this analysis, as these may contribute to females having less power over their boards. By focusing on the models for organizational and individual fixed-effects, columns (4) and (6), it is clear that the estimates on the squared terms are positive but not significant for female CEOs[19]. However, the non-significance is likely due to the small number of observations for females, as there are very few female CEOs in the for-profit sector. Therefore, by comparing the results for female and male CEOs in columns (3) – (6), there appears to be a nonlinear relationship between pay and performance for both female and male CEOs in the for-profit sector. That is, the results in table 10 seem to support hypothesis 5b. These results suggests that organizations appear to structure pay packages for their male and female CEOs similarly where both male and females are rewarded highly for good performance but not being penalized as severely for poor performance.

DISCUSSION AND CONCLUSION

Previous research examining the strength of the link between CEO pay and organizational performance has reported a single estimate to describe this relationship, which

[18] To further investigate this, I created dummy variables based on an organization's performance compared to it's own industry and compared to the overall nonprofit sector. These results are presented in appendix A. Looking at columns (1) and (3), there appears to be a linear relationship between pay and performance. However, when focusing on columns (2) and (4), which include organizational fixed-effects, it is unclear whether the relationship between nonprofit CEO pay and performance exists. I investigate this further in Klein (2012).

[19] These results do not change when including age and tenure variables.

assumes that the relationship is linear and consistent across performance. However, the findings of this study strongly support the predictions of a nonlinear relationship between CEO pay and organizational performance. Specifically, I find the relationship between for-profit CEO pay and organizational performance is weaker at low levels of performance but stronger at higher levels of performance. Additionally, these results hold even with a number of different performance measures, across a number of different empirical specifications, and with both contemporaneous and lagged performance. These results may help address the mixed findings regarding the relationship between pay and performance in the executive compensation literature, and they suggest that the relationship between pay and performance is more complex than previous research has portrayed.

Further, by breaking down compensation, I was able to examine which forms of compensation are likely causing this convex relationship between pay and performance. Looking at the different forms of compensation, it appears that there is no relationship between salary, option grants, and "other" pay and organizational performance. Further, I find a convex relationship between bonus pay and performance. Last, I find a positive and significant linear relationship between LTIP and stock grants and organizational performance. All of these components of pay combined are likely leading to the nonlinear relationship between CEO pay and performance. That is, when all the different parts of compensation are combined, executives appear to be rewarded highly for good performance yet not penalized when performance is poor. The components of compensation that are not related to performance are leading to the decoupling of pay and performance at lower levels of performance as these specific components allow executives to receive a payout even when performance is low. Whereas, the forms of pay that are strongly related to performance, specifically stock grants, are causing the strong and

steep relationship between pay and performance at higher levels of performance, thus providing executives with the link between their paychecks and owners' interests. Last, bonus pay appears to incorporate both the decoupling of pay at lower levels of performance and the strong relationship between pay and performance when performance is good. As the managerial power hypothesis predicts, this unique relationship may be due to how the bestowment of bonus pay is based on both objective and subjective measures. Furthermore, I find the results of this analysis to show that both the managerial power hypothesis and agency theory are useful perspectives in explaining which parts of compensation cause the nonlinear relationship between executive pay and organizational performance.

Although a nonlinear relationship appears to exist in for-profits, I find a different pattern exists between CEO pay and performance in the nonprofit sector. I find the relationship between nonprofit CEO pay and organizational performance, defined as total revenue, is linear. This may suggest that in organizations where the interests of managers and owners are more aligned, managers may be more willing to share equally in both the upside and downside risk. Further, these initial findings may indicate that in these organizations, there may be less of a need for boards to structure executive pay with the purpose of avoiding downside risk. However, future research should further investigate this.

Last, I find no difference between how female and male CEOs are paid. Both female and male executives' pay appear to have a convex relationship with organizational performance. This finding may indicate that the nonlinear relationship is efficient for shareholders, and it provides support for agency theory. Yet, more research needs to be done to differentiate between the two explanations provided here regarding the nonlinear relationship.

The results of this study suggest that future research on the pay-performance link should not assume the relationship is linear. Although this may complicate future work on the topic, it is clear from this study that the pay-performance relationship changes with performance level. Therefore, recognizing this dynamic relationship is essential to truly understanding how organizations design executive pay practices.

Limitations

There are a number of limitations in this study. First, I am assuming that the interests of nonprofit executives are more aligned with the interests of owners. This, of course, is an assumption, and future research should do surveys or interviews with executives in nonprofits to better understand how aligned these interests are. Second, due to availability of data, I do not have controls in my nonprofit regressions for individual characteristics. These are important determinants of CEO pay, and future studies should incorporate these measures. Third, I do not have strong measures of CEO power, therefore I am unable to test between the two theoretical frameworks I propose here as explaining the convex relationship. This would be an interesting direction for future studies. Fourth, I do not examine whether the nonlinear relationship is actually good for future organizational performance, nor do I examine whether the offering of pay packages that avoid downside risk affects the pool of CEO talent. For example, one reason organizations may offer pay that is decoupled from poor performance is to attract high quality CEOs who may be offered these attractive pay packages in other organizations. Looking at these outcomes would provide us with information on whether these pay packages are efficient and would provide a test between agency theory and managerial power hypothesis. This should be a focus of future studies.

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Figure 1

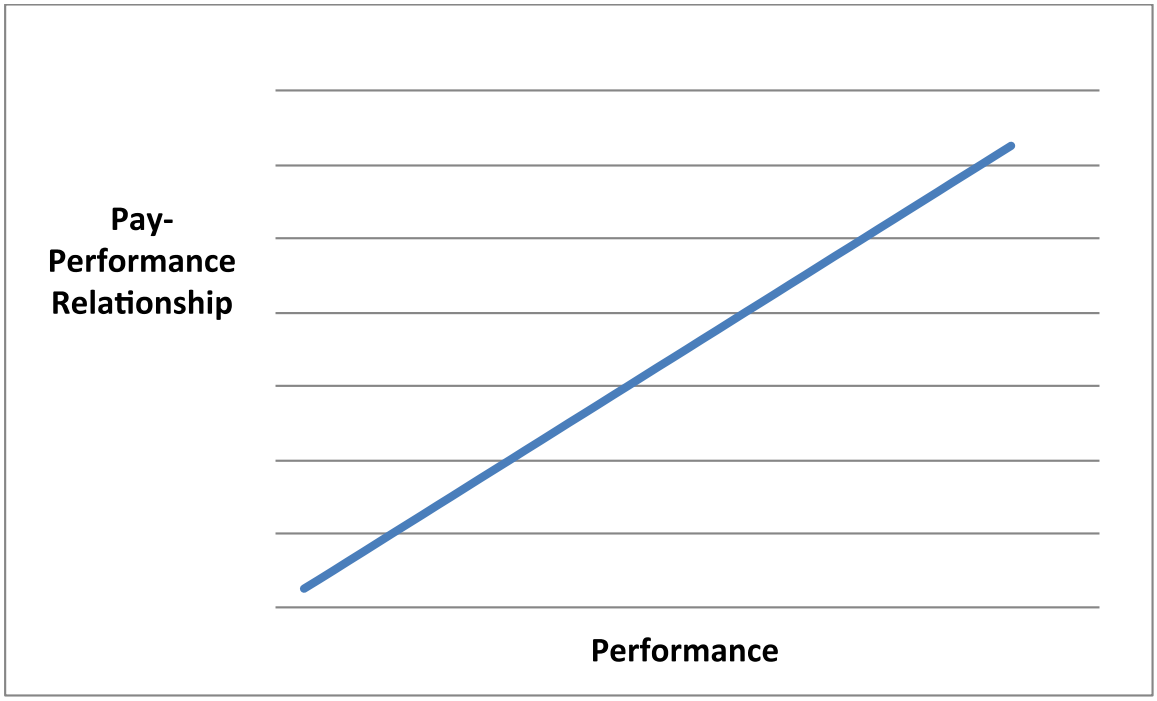

Figure 2

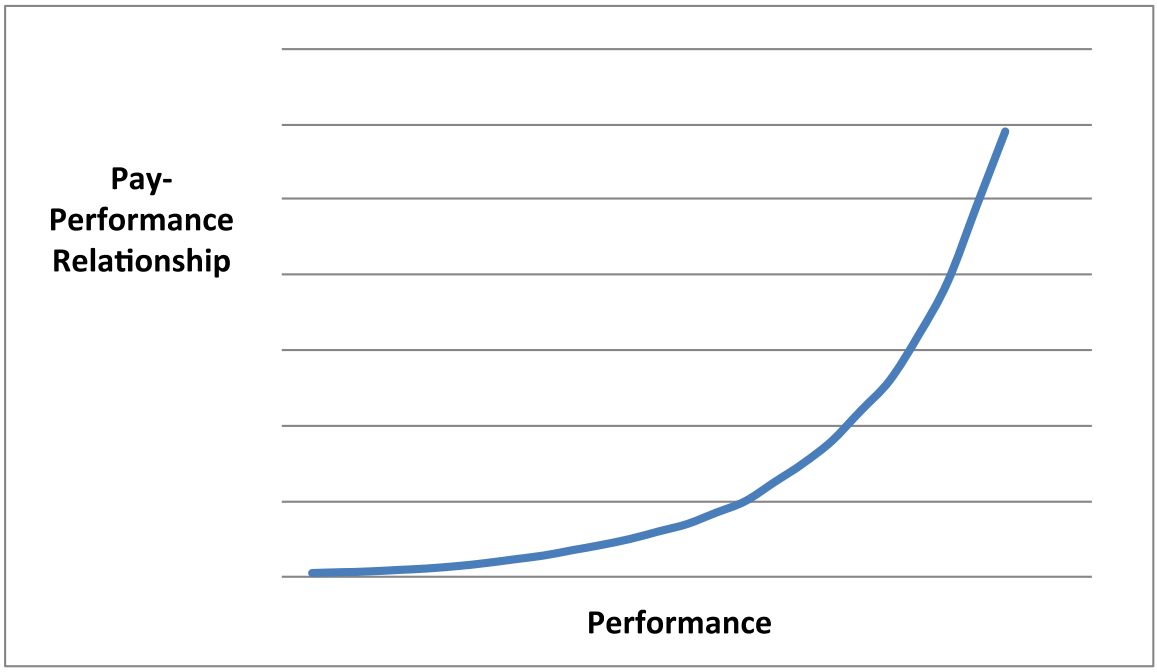

Table 1. Summary statistics. For-Profit CEOs.

	All	Male	Female
Compensation			
Salary	678004	678111	671624
	(359185)	(358431)	(402192)
	[624000]	[624457]	[606300]
Bonus	663954	668773	375666
	(1810312)	(1823037)	(654285)
	[269207]	[273016]	[107250]
Total pay	4825855	4835967	4220926
	(11074590)	(11139187)	(6044147)
	[2460836]	[2466454]	[2091677]
Financial			
Market value	7015422	7055606	4611545
(in thousands)	(22404164)	(22530135)	(12565055)
	[1498687]	[1513391]	[740065]
Total assets	12955784	13106085	3964430
(in thousands)	(65868299)	(66395737)	(9140736)
	[1633700]	[1650446]	[831164]
Return	17.160	17.270	10.597
	(62.986)	(62.850)	(70.404)
	[9.496]	[9.592]	[3.299]
Net income	293287	295871	138692
(in thousands)	(1597038)	(1606235)	(875180)
	[62689]	[63320]	[32418]
CEO characteristics			
Age	55.432	55.489	52.029
	(7.329)	(7.339)	(5.797)
	[56]	[56]	[51]
Seniority as a CEO	7.210	7.239	5.454
	7.332	(7.316)	(8.042)
	[5]	[5]	[3]
N	23295	22912	383

Source: Execucomp, years 1993-2009

[a] 2003 dollars

[b] Means, standard deviations in parantheses, and medians in brackets

Table 2. Summary statistics. Nonprofit CEOs.

	All
Compensation	
Salary	175170
	(199674)
	[128352]
Benefits	22406
	(86306)
	[8994]
Expenses	3887
	(38822]
	[0]
Total pay	191542
	(234814)
	[1348766]
Financial	
Total revenue	61949
(in thousands)	(228532)
	[12722]
Total assets	123632
(in thousands)	(704677)
	[30257]
N	50512

Source: IRS 990 Data, 1998-2003

[a] 2003 dollars

[b] Means, standard deviations in parantheses, and medians in brackets

Table 3. For-profit CEO pay and performance.

	Dependent variable: ln(total compensation)					
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(1 + return)	0.134***	0.170***	0.219***	0.209***	0.163***	0.145***
	(0.012)	(0.012)	(0.013)	(0.012)	(0.010)	(0.010)
$(\text{Ln}(1 + \text{return}))^2$		0.071***	0.059***	0.051***	0.022***	0.028***
		(0.008)	(0.008)	(0.008)	(0.007)	(0.007)
Ln(assets)	0.348***	0.351***	0.347***	0.438***	0.391***	0.393***
	(0.003)	(0.003)	(0.003)	(0.004)	(0.010)	(0.013)
Year effects	no	no	yes	yes	yes	yes
Industry effects	no	no	no	yes	no	no
Org effects	no	no	no	no	yes	no
Individual effects	no	no	no	no	no	yes
Constant	6.787***	6.632***	6.292***	4.045***	6.002***	6.618***
	(0.230)	(0.230)	(0.228)	(0.217)	(0.338)	(0.647)
Adj. R^2	0.332	0.334	0.357	0.455	0.662	0.719
N	23295	23295	23295	23295	23295	23295

[a] Execucomp data, 1993-2009; 2003 dollars

[b] Each regression includes demographic controls (quadratics in age and CEO tenure)

Table 4. For-profit CEO pay and performance.

	Dependent variable: ln(total compensation)					
	Dummy defined by two-digit sic code			Dummy defined by market		
	(1)	(2)	(3)	(4)	(5)	(6)
20 < Return <= 40 Dummy	0.044***	0.056***	0.050***	0.010	0.032**	0.032**
	(0.016)	(0.014)	(0.013)	(0.017)	(0.014)	(0.014)
40 < Return <= 60 Dummy	0.086***	0.092***	0.084***	0.077***	0.098***	0.079***
	(0.016)	(0.014)	(0.013)	(0.017)	(0.015)	(0.014)
60 < Return <= 80 Dummy	0.133***	0.117***	0.104***	0.145***	0.135***	0.113***
	(0.016)	(0.014)	(0.013)	(0.017)	(0.014)	(0.014)
80 < Return <= 100 Dummy	0.247***	0.194***	0.175***	0.265***	0.208***	0.179***
	(0.017)	(0.014)	(0.014)	(0.017)	(0.014)	(0.013)
Ln(assets)	0.438***	0.387***	0.388***	0.438***	0.391***	0.392***
	(0.004)	(0.010)	(0.014)	(0.004)	(0.010)	(0.013)
Year effects	yes	yes	yes	yes	yes	yes
Industry effects	yes	no	no	yes	no	no
Org effects	no	yes	no	no	yes	no
Individual effects	no	no	yes	no	no	yes
Constant	4.297***	5.861***	6.758***	4.308***	5.773***	6.654***
	(0.217)	(0.338)	(0.647)	(0.217)	(0.338)	(0.646)
Adj. R^2	0.453	0.662	0.719	0.456	0.663	0.719
N	23295	23295	23295	23295	23295	23295

[a] Execucomp data, 1993-2009; 2003 dollars

[b] Each regression includes demographic controls (quadratics in age and CEO tenure)

Table 5. For-profit CEO pay and lagged performance.
Panel A. Lagged performance.

	Dependent variable: ln(total compensation)				
	(1)	(2)	(4)	(5)	(6)
$(Ln(1 + return))_{t-1}$	0.255***	0.279***	0.269***	0.224***	0.203***
	(0.014)	(0.014)	(0.013)	(0.011)	(0.011)
$((Ln(1 + return))^2)_{t-1}$		0.084***	0.065***	0.028***	0.048***
		(0.011)	(0.010)	(0.009)	(0.009)
Ln(assets)	0.350***	0.353***	0.446***	0.373***	0.347***
	(0.004)	(0.004)	(0.004)	(0.012)	(0.015)
Year effects	yes	yes	yes	yes	yes
Industry effects	no	no	yes	no	no
Org effects	no	no	no	yes	no
Individual effects	no	no	no	no	yes
Constant	6.963***	6.775***	4.363***	5.757***	7.684***
	(0.252)	(0.253)	(0.239)	(0.372)	(0.707)
Adj. R^2	0.368	0.370	0.471	0.684	0.736
N	19602	19602	19602	19602	19602

Panel B. Lagged and current performance.

	Dependent variable: ln(total compensation)				
	(1)	(2)	(4)	(5)	(6)
$(Ln(1 + return))_{t}$	0.226***	0.277***	0.261***	0.223***	0.202***
	(0.014)	(0.015)	(0.014)	(0.011)	(0.011)
$((Ln(1 + return))^2)_{t}$		0.085***	0.077***	0.048***	0.052***
		(0.010)	(0.009)	(0.008)	(0.008)
$(Ln(1 + return))_{t-1}$	0.266***	0.304***	0.293***	0.261***	0.251***
	(0.014)	(0.014)	(0.013)	(0.011)	(0.011)
$((Ln(1 + return))^2)_{t-1}$		0.068***	0.050***	0.018**	0.038***
		(0.011)	(0.010)	(0.009)	(0.009)
Ln(assets)	0.346***	0.351***	0.444***	0.396***	0.368***
	(0.004)	(0.004)	(0.004)	(0.012)	(0.015)
Year effects	yes	yes	yes	yes	yes
Industry effects	no	no	yes	no	no
Org effects	no	no	no	yes	no
Individual effects	no	no	no	no	yes
Constant	7.053***	6.762***	4.373***	5.324***	7.107***
	(0.250)	(0.251)	(0.237)	(0.369)	(0.701)
Adj. R^2	0.376	0.381	0.481	0.692	0.742
N	19602	19602	19602	19602	19602

[a] Execucomp data, 1993-2009; 2003 dollars

[b] Each regression includes demographic controls (quadratics in age and CEO tenure)

Table 6. For-profit CEO pay and accounting performance.

	Dependent variable: total compensation					
	(1)	(2)	(3)	(4)	(5)	(6)
Net income	785.181***	1043.299***	1042.434***	1024.408***	575.947***	653.503***
	(46.719)	(53.641)	(53.452)	(54.704)	(68.697)	(89.780)
Net income^2		0.012***	0.012***	0.012***	0.007***	0.011***
		(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Year effects	no	no	yes	yes	yes	yes
Industry effects	no	no	no	yes	no	no
Org effects	no	no	no	no	yes	no
Individual effects	no	no	no	no	no	yes
Constant	7903069	8379438***	5495733**	3273965	10800000****	-2855114
	(2772502)	(2767373)	(2769232)	(2791194)	(4037499)	(9766011)
Adj. R^2	0.041	0.045	0.056	0.073	0.249	0.294
N	23295	23295	23295	23295	23295	23295

[a] Execucomp data, 1993-2009; 2003 dollars

[b] Each regression includes a control for firm size (assets) and demographic controls (quadratics in age and CEO tenure)

[c] Performance measured is in millions

Table 7. For-profit CEO pay and performance.

	DV: Δ(compensation)			DV: Δln(compensation)		
	(1)	(2)	(3)	(4)	(5)	(6)
Change in shareholder wealth (in millions)	122.8559***	125.0018***	121.0399***			
	(11.1700)	(11.1703)	(11.31480)			
[Change in shareholder wealth]^2 (in millions)		0.0004***	0.0004***			
		(0.0001)	(0.0001)			
Ln(1 + return)				0.2476***	0.2729***	0.3042***
				(0.0112)	(0.0122)	(0.0132)
(Ln(1 + return))^2					0.0438***	0.0505***
					(0.0083)	(0.0084)
Year effects	no	no	yes	no	no	yes
Constant	127994.6000	102181.8000	351933.0000	0.0430***	0.0313***	0.1385***
	(88933.5000)	(89012.9300)	(423453.6000)	(0.0056)	(0.0060)	(0.0266)
Adj. R^2	0.0057	0.0070	0.0095	0.0228	0.0241	0.0340
N	20926	20926	20926	20929	20929	20929

[a] Execucomp data, 1993-2009; 2003 dollars

Table 8. For-profit CEO pay and performance.
Dependent variable is ln(component of pay + 0.01).

	ln(salary + 0.01)		ln(bonus + 0.01)		ln(ltip + 0.01)		ln(options + 0.01)		ln(stock + 0.01)		ln(other + 0.01)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Ln(1 + return)	0.028	0.014	2.607***	2.525***	0.111	0.115*	0.112	0.128	0.357***	0.421***	-0.061	-0.035
	(0.018)	(0.015)	(0.098)	(0.097)	(0.071)	(0.067)	(0.102)	(0.103)	(0.093)	(0.093)	(0.049)	(0.046)
$(Ln(1 + return))^2$	-0.024*	-0.009	0.174***	0.141**	-0.033	0.013	-0.076	0.094	-0.026	0.069	-0.118***	-0.026
	(0.012)	(0.011)	(0.067)	(0.072)	(0.048)	(0.050)	(0.070)	(0.076)	(0.063)	(0.068)	(0.033)	(0.034)
Ln(assets)	0.188***	0.088***	0.276***	0.639***	0.253***	0.161*	0.796***	0.607***	0.435***	0.288**	0.472***	0.346***
	(0.019)	(0.020)	(0.101)	(0.130)	(0.072)	(0.090)	(0.105)	(0.137)	(0.095)	(0.124)	(0.050)	(0.061)
Year effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Org effects	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no
Individual effects	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes
Constant	8.772***	15.816***	-9.591***	16.789***	-15.102***	-14.570***	-24.672***	-1.783	-20.123***	-36.675***	-27.291***	-9.479***
	(0.604)	(0.965)	(3.272)	(6.407)	(2.357)	(4.430)	(3.414)	(6.766)	(3.095)	(6.110)	(1.628)	(3.007)
Adj. R^2	0.423	0.665	0.464	0.532	0.426	0.539	0.531	0.580	0.365	0.436	0.816	0.857
N	23295	23295	23295	23295	23295	23295	23295	23295	23295	23295	23295	23295

[a] Execucomp data, 1993-2009; 2003 dollars

[b] Each regression includes demographic controls (quadratics in age and CEO tenure)

Table 9. CEO pay and performance. For-profits and nonprofits.

	Dependent variable: ln(total compensation)			
	For-profit		Nonprofit	
	(1)	(2)	(3)	(4)
Ln(performance)	0.154***	0.163***	0.035***	0.046
	(0.010)	(0.010)	(0.007)	(0.054)
(Ln(performance))^2		0.022***		0.000
		(0.007)		(0.002)
Ln(assets)	0.387***	0.391***	0.058***	0.058***
	(0.010)	(0.010)	(0.012)	(0.012)
Year effects	yes	yes	yes	yes
Org effects	yes	yes	yes	yes
Constant	5.913***	6.002***	10.041***	9.961***
	(0.338)	(0.338)	(0.191)	(0.452)
Adj. R^2	0.6623	0.6624	0.7832	0.7832
N	23295	23295	50512	50512

[a] Columns (1) and (2): Execucomp data, 1993-2009; 2003 dollars

[b] Columns (3) and (4): IRS Form 990 data, 1998-2003; 2003 dollars

[c] Regression (1) and (2) includes demographic controls (quadratics in age and CEO tenure)

[d] For-profit performance is (1+ return)

[e] Nonprofit performance is revenue

Table 10. For-profit CEO compensation and performance by gender.

	Dependent variable: ln(compensation)					
	Male	Female	Male	Female	Male	Female
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(1 + return)	0.211***	0.112	0.164***	0.172***	0.145***	0.173***
	(0.012)	(0.074)	(0.010)	(0.065)	(0.010)	(0.066)
$(\text{Ln}(1 + \text{return}))^2$	0.056***	0.001	0.024***	0.026	0.029***	0.027
	(0.008)	(0.039)	(0.007)	(0.037)	(0.007)	(0.037)
Ln(assets)	0.437***	0.533***	0.388***	0.835***	0.387***	0.827***
	(0.004)	(0.029)	(0.010)	(0.113)	(0.013)	(0.114)
Year effects	yes	yes	yes	yes	yes	yes
Industry effects	yes	yes	no	no	no	no
Org effects	yes	no	yes	yes	no	no
Individual effects	no	no	no	no	yes	yes
Constant	4.986***	3.342***	6.609***	-3.320	6.085***	-3.182
	(0.083)	(0.643)	(0.228)	(2.328)	(0.274)	(2.351)
Adj. R^2	0.450	0.684	0.661	0.784	0.717	0.782
N	22912	383	22912	383	22912	383

[a] Execucomp data, 1993-2009; 2003 dollars

[b] Without demographic controls (age and tenure)

Appendix A. Nonprofit CEO pay and performance.
Dependent variable: ln(total compensation)

	Defined by Industry		Defined by NP Sector	
	(1)	(2)	(3)	(4)
20 < Revenue <= 40 Dummy	0.418***	0.027*	0.453***	0.011
	(0.012)	(0.015)	(0.012)	(0.015)
40 < Revenue <= 60 Dummy	0.609***	0.009	0.651***	0.028
	(0.013)	(0.019)	(0.014)	(0.020)
60 < Revenue <= 80 Dummy	0.736***	0.016	0.833***	0.027
	(0.014)	(0.022)	(0.015)	(0.024)
80 < Revenue <= 100 Dummy	0.951***	0.030	1.058***	0.041
	(0.017)	(0.027)	(0.018)	(0.030)
Ln(assets)	0.139***	0.074***	0.146***	0.074***
	(0.003)	(0.011)	(0.003)	(0.011)
Year effects	yes	yes	yes	yes
Industry effects	yes	no	yes	no
Org effects	no	yes	no	yes
Constant	8.724***	10.324***	8.563***	10.331***
	(0.045)	(0.186)	(0.043)	(0.185)
Adj. R^2	0.428	0.783	0.428	0.783
N	50512	50512	50512	50512

[a] IRS 990 data, 1993-2009; 2003 dollars

[b] Each regression includes demographic controls (quadratics in age and CEO tenure)

CHAPTER 2

CEO PAY AND INTEREST ALIGNMENT: A PANEL STUDY ON PAY-FOR-PERFORMANCE IN CHARITABLE ORGANIZATIONS

ABSTRACT

In this paper, I examine the relationship between CEO pay and organizational performance in nonprofit organizations. Two theories, agency theory and stewardship theory, offer opposing predictions on the pay-performance link in organizations. Whereas agency theory suggests a positive link between pay and performance, stewardship theory suggests that in some organizations there may be no link between pay and performance. It is unclear which theory provides a better explanation of nonprofit CEO pay. This is an interesting context in which to examine compensation, because, unlike for-profit executives, nonprofit executives are assumed to be less motivated by money, and their interests more aligned with those of organization owners. Nevertheless, there is significant variation in the strength of the relationship between pay and performance within this sector. Using compensation data on 13,200 unique nonprofit organizations from 1998 to 2003, on average I find as revenue increases, so does the pay of the nonprofit CEO. However, this only applies in a few nonprofit industries. Additionally, I find the relationship between pay and performance is stronger in smaller nonprofits, younger nonprofits, nonprofits with less diverse funding sources, nonprofits with stronger boards, and nonprofits with for-profit competitors, which suggests agency theory may be more applicable to these types of organizations.

An extensive amount of research on executive pay is based on agency theory. Agency theory acknowledges that in most firms, there is a separation between the owners of the organization (known as the principals) and the managers who are delegated control over the organization (known as the agents). This type of arrangement creates agency costs, as situations may arise where the interests of the principal and the interests of the agent diverge. In these instances, it is likely the agent will pursue his / her own interests over the wishes of the principal, thereby evoking agency costs. Agency theorists argue that it is possible to reduce agency costs through pay incentives and monitoring (Jensen and Meckling, 1976).

Although agency theory is the dominant theory used by executive pay researchers (Murphy, 1999), in some organizations the interests of agents and the interests of principals may actually converge. Stewardship theory, as discussed by Donaldson and Davis (1991) and Davis, Schoorman, and Donaldson (1997), is used to explain these situations and suggests that the mechanisms recommended by agency theory may be redundant and even counterproductive in organizations where the interests of agents are aligned with the interests of principals (Lee and O'Neill, 2003). Echoing a number of authors, including Deci (1971) and Kohn (1993), Deci, Ryan, and Koestner (1999) claimed, "tangible rewards tend to have a substantially negative effect on intrinsic motivation", and Pink (2009) argued that these rewards do more harm than good when mixed with jobs that are interesting, imaginative, and moral.

Nonprofit executives are assumed to be less motivated by money and their interests are assumed to be more aligned with owners of the organization than the typical for-profit executive. Oster (1995) argued that nonprofit workers are committed ideologically to the organization they join, and Mirvis and Hackett (1983) found that individuals working for nonprofits report that their jobs are more important to them and that they have a stronger dedication to their jobs than

their counterparts in the for-profit sector. Further, Hansmann (1980) argued that people who go into the nonprofit sector are not motivated strictly by money; he characterized these individuals as "nongreedy". Yet, there is significant variation in the pay of top executives of nonprofits, and many nonprofits use pay incentives to motivate their employees (Rocco, 1991; Casteuble, 1997; Hallock, 2000; 2002). Therefore, nonprofits appear to be an ideal context to examine the pay-for-performance relationship, as some nonprofit organizations have adopted these systems to motivate their managers even though it is more likely that the interests of nonprofit managers are more aligned with the interests of owners than is discussed in the for-profit literature.

In this paper, I test whether agency theory or stewardship theory provides a better explanation of the nonprofit CEO pay. Further, I examine, in a setting that is more likely to be characterized by convergence of agents' and principals' interests, if certain situational factors may help to explain the use of control mechanisms discussed in agency theory. That is, given the diversity of the nonprofit sector, I seek to uncover what types of organizations are more likely to use pay-for-performance systems to reward their top executive. These characteristics may shed light on the applicability of agency theory and stewardship theory in organizations where interests are aligned. Therefore, I address: 1) what theory provides a better explanation of nonprofit CEO pay, 2) does the relationship between pay and performance differ across nonprofit industries, and 3) what types of organizations are more likely to use pay-for-performance practices in the nonprofit sector? I answer these questions using IRS 990 data on 13,200 unique nonprofit organizations from 1998 to 2003.

This paper contributes to the executive compensation literature in a number of ways. First, we know very little about how executives are paid in nonprofits (some exceptions are Preston, 1989; Oster, 1998; Hallock, 2002). Therefore, the results from this study should add to

our understanding of nonprofit managerial compensation. Second, as Gerhart and Rynes (2003) suggested, it seems likely that most firms exist on a continuum between divergence and convergence of agent and principal interests. Therefore, understanding what factors affect the adoption and use of control mechanisms, that is, pay incentive and monitoring, in nonprofit organizations should add to our understanding of what affects the adoption of these practices across organizational sectors, and should further add to our understanding of agency theory and stewardship theory. Wasserman (2006) examined what factors affect the applicability of agency theory or stewardship theory in new ventures by comparing CEO pay levels of founders and non-founders. Although this study provided us with insightful information regarding executive pay, Wasserman did not actually measure incentive schemes or monitoring in new ventures, and therefore he could not test the actual predictions of agency theory. In this paper, I add to Wasserman's (2006) study by addressing the strength of pay-for-performance relationship and by investigating which factors affect the use of this control mechanism, which is argued to align executives' and owners' interests, in a setting where one would expect to find these interests already aligned. Last, more and more people are looking for jobs that are meaningful, jobs in which they feel they are making a difference (Michaelson, 2010). Yet, we know very little about how to pay people in these organizations. This research should help add to our knowledge on meaningful work by addressing what types of pay practices are used to motivate individuals in these types of jobs.

THEORETICAL REVIEW

Both agency theory and stewardship theory are useful in explaining executive compensation; however, as Wasserman (2006) suggested, each theory may be more applicable to executives and situations to which the other theory is less applicable.

Agency Theory

The main argument underlying agency theory is that owners (principals) delegate control of the firm to managers (agents) who are expected to maximize the value of the firm. However, agents and principals are both motivated by opportunities to maximize their own utility. If the interests of both agents and principals match, then there are no agency costs. But the chance that the interests diverge is quite large, and, therefore, given the opportunity, agents may rationally pursue their own interests over the interests of the principal-- an act that results in agency costs for the principal (Davis et al., 1997). To reduce these agency costs, principals may implement a number of governance mechanisms (Jensen and Meckling, 1976). Although both monitoring and incentive schemes have been argued to reduce agency costs, here I focus strictly on pay schemes.

Stewardship Theory

The key argument of stewardship theory is that in some organizations the interests of managers may be more aligned with owners than agency theory proposes (Davis, Schoorman, and Donaldson, 1997; Lee and O'Neill, 2003). That is, a steward's interests and utility motivations are not directed toward personal gains, as is suggested by agency theory, but instead toward organizational goals. "Given a choice between self-serving behavior and pro-organizational behavior, a steward's behavior will not depart from the interests of his or her

organization" (Davis et al., 1997, pg. 24). Further, under stewardship theory, employees may even have the same motives as the owners of the organization (Davis et al., 1997) [1].

Because stewards can be trusted to behave in ways that are consistent with the interests of the owners, the control mechanisms of agency theory may be redundant and inefficient in stewardship situations (Barney and Hansen, 1994). Lee and O'Neill (2003) argued that what works well to motivate an agent may not work well to motivate a steward. Further, some researchers have even argued that control mechanisms offered by agency theory are counterproductive in steward situations, for the reason that they lower an individual's motivation, undermining pro-organizational behavior (Argyris, 1964; Davis et al., 1997).

A number of studies have investigated how external rewards affect intrinsic motivation. These studies generally found that pay incentives can have a negative effect especially when used in jobs that are interesting, creative, and noble (Pink, 2009). Deci (1971) examined this relationship by conducting two laboratory experiments and one field experiment. He found that when money is used as a reward, intrinsic motivation tends to decrease. Deci et al. (1999) conducted a meta-analysis of 128 studies on the effects of extrinsic rewards on intrinsic motivation. These authors found that rewards significantly undermine self-reported interest. They argued that while "rewards can control people's behavior", they can also "undermine people's taking responsibility for motivating or regulating themselves" (pg. 659). Last, Pink (2009) argued, based on a number of lab studies and the two studies discussed above, that these detrimental effects of rewards may be most problematic when "mixing rewards with inherently

[1] Compensating differentials is often used in nonprofit compensation studies to explain why nonprofit employees are paid less than employees in other sectors (see Hallock, 2000 for additional reasons for differences in pay). Whereas compensating differentials can help explain differences in pay levels in nonprofits, it does not help address the difference in the pay-for-performance relationship in the nonprofit sector.

interesting, creative, or noble tasks- deploying them without understanding the peculiar science of motivation- is a very dangerous game. When used in these situations, "if-then" rewards usually do more harm than good" (pg. 49).

The discussion to this point suggests agents in agency situations will receive pay based on performance, whereas stewards in stewardship situations will not be paid based on organization performance. Specifically, in situations where executives' and owners' interests are closely in common, organizations will not need to align interests. Additionally, providing extrinsic rewards to executives may even prove detrimental to motivation, therefore, no relationship between pay and performance is likely to exist in organizations described under stewardship theory. However, a positive and significant relationship is likely to exist in organizations described under agency theory.

Pay-for-Performance in Nonprofits

Nonprofits are distinct from for-profit corporations for a number of reasons. First, nonprofits have a different bottom line than for-profit organizations (Hallock, 2002). Second, nonprofit organizations are barred from distributing net earnings to individuals who exercise control over the organization, known as the "nondistribution" constraint. This constraint is meant to limit the extent to which nonprofits are inclined to cheat their customers and their workers (Hansmann, 1996), but it does not prevent nonprofit organizations from offering profit sharing or other incentive contracts to their employees (Steinberg, 1990). Third, nonprofits have

tax privileges. Therefore, nonprofits are free from many tax burdens and donations to them are tax deductible[2].

Although nonprofits are different from for-profits in a number of ways, nonprofit board of directors set the CEO's pay as well as evaluate the CEO's performance, a practice similar to for-profits. In addition, these directors must wrestle with many of the same compensation issues that face for-profit board directors (Bowen, 2008).

However, nonprofit organizations do not have owners in the same sense as for-profit organizations. Researchers of nonprofits typically discuss the governing board, which includes large donors, as the closest comparison to shareholders in the for-profit sector (Steinberg, 2006)[3]. But these nonprofit "owners" do not enjoy the usual rights of ownership. "Ownership of an asset consists of the right to control its use and to enjoy its return" (Ben-Ner and Jones, 1995, pg. 532). As Steinberg (2006) discussed, nonprofit owners are able to control the use of an asset and transfer that control, but are not able to enjoy any profits generated by the organization. Therefore, these owners have "attenuated property rights". Further, if a nonprofit organization is sold or changed to a for-profit firm, then the owners of the nonprofit must donate the fair market value of the organization's assets to another nonprofit. Essentially, any benefits nonprofit owners receive from control of the organization must be nonfinancial[4].

It seems quite clear that the interests of nonprofit executives are more aligned with the interests of owners than one would expect in the for-profit sector. Oster (1995) argued that

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[2] I am specifically referring to 501c(3) organizations.

[3] Some nonprofit researchers have also argued that members (in the case of membership organizations) and donors can be described as quasi-owners of a nonprofit organization (Bowen, 2008). Donors are an interesting case because under the law, donors do not have any claim over the use of the funds they donated, yet nonprofits are likely to pay a lot of attention to their donors' wishes since a nonprofits' survival is dependent on these funds (Bowen, 2008).

[4] For example nonprofit owners could enjoy opulent headquarters or board meetings in vacation resorts (Steinberg, 2006).

individuals are drawn to nonprofits for ideological reasons and therefore accept lower wages because they are committed to the organization. This suggests that money is not the main driver of behavior for executives[5], because if it were, executives would pursue opportunities outside the nonprofit sector. Further, Oster (1995) suggested that workers sort into different sectors based on their preferences for wages, working conditions, and interest in mission; these differences imply that different types of organizations may need to adopt different methods to motivate and manage employees. In addition, Mirvis and Hackett (1983) found that nonprofit employees report a stronger commitment to their jobs and also report that their jobs are more important to them than employees working in the for-profit sector.

This discussion suggests that nonprofits may be better described by stewardship theory; however, some researchers have found a positive and significant relationship between pay and performance in nonprofit organizations. Oster (1998) found revenue was a strong predictor of nonprofit executive compensation. Hallock (2002) found a link between total assets and CEO pay when examining the determinants of nonprofit CEO pay. Last, Frumkin and Keating (2010) found that nonprofit CEO pay is modestly affected by performance when measured as improved fund-raising results or better administrative efficiency. The results of these studies suggest that boards are using pay-for-performance systems to ensure executives are pursuing owners' interests.

[5] Or, at least, is not the sole driver.

Agency theory and stewardship theory offer opposing predictions on the relationship between pay and performance. And as the above discussion indicates it is unclear which theory offers a better description of nonprofit CEO pay[6].

Hypothesis 1a (H1a): Organizational performance is positively and significantly related to nonprofit CEO total pay.

Hypothesis 1b (H1b): Organizational performance is unrelated to nonprofit CEO total pay.

Organizational Factors

Certain nonprofit organizations may be more likely to use pay-for-performance systems to reward their executives. That is, there is significant variation in the use of the control mechanisms discussed by agency theorists in the nonprofit sector, and organizational characteristics may affect the applicability of agency or stewardship theory in these organizations where the interests of executives and owners are likely to be aligned[7].

Labor market competition. One factor that has led to more regularized methods for setting compensation of chief executives in the nonprofit sector is the spillover effect from developments in the for-profit sector (Bowen, 2008). Pay-for-performance is widely used by for-profit firms (Milkovich, Newman, and Gerhart, 2011). I believe nonprofit organizations' pay practices will more closely resemble those found in the for-profit sector when these

[6] It is important to note that both agency theory and stewardship theory may be useful to explaining nonprofit CEO pay as it may help explain why the relationship is weaker compared to for-profit organizations. However, these theories appear to offer opposing predictions on the relationship between pay and performance so in this study I compare these two theories rather than combine them.

[7] Wasserman (2006) examined the applicability of agency versus stewardship theory in new ventures and argued that certain situational factors may influence the degree of agency versus stewardship theory.

organizations must compete for talent with the for-profit sector. When executives are able to move between the for-profit and nonprofit sector, they will bring with them experiences and perspectives from the for-profit sector including expectations about how executives are paid. Moreover, nonprofit boards are more likely to adopt practices found in for-profit firms in organizations where executives move back and forth between sectors to convince talent to come work in the nonprofit sector and convince talent to continue working in their organization.

Sorenson (1999) argued that firms that hire managers from the same labor pool (or from each other) exercise very similar strategies. This happens, as stated by Sorenson (1999), because "… as managers move between organizations, they bring with them the knowledge and information acquired with their previous employer" (pg. 291). This facilitates the transfer of ideas and therefore creates change because it makes events more concrete and proximate to decision makers (Haunschild, 1993). Further, when decision makers are exposed to greater diversity of information, they will be more likely to deviate from the industry norms (Geletkanycz and Hambrick, 1997). All this suggests that the labor market in which an organization competes can affect the strategies and practices it pursues (Sorenson, 1999) and, more specifically, may affect how organizations reward their managers (Bertrand, Hallock, and Arnould, 2005).

Additionally, Gardner (2005) examined how firms respond to the loss of employees to other firms with a model of interfirm competition for human resources. He argued that one way organizations respond to rivals seeking to hire their employees is through defensive actions, which he defined as "… a defensive action is an attempt… to decrease the effectiveness of future hiring attempts… without negatively impacting the hiring firm" (pg. 238). Matching the pay

practices of rival firms could be considered a defensive action to ensure that employees do not leave the organization for more attractive pay packages in other firms.

The above information implies that performance, which is found to be an important predictor of for-profit CEO pay, is more likely to be an important predictor of CEO pay in nonprofit organizations that must compete for talent with for-profit organizations. Bertrand et al. (2005) found support that competition with for-profits increases the pay-performance relationship in hospitals. Specifically, these authors found that as HMO penetration increased, defined as the HMO market share by county / year-level, top executives were paid more for improving standard economic measures of hospital performance. Similar to this study on hospitals, I expect for-profit competition to increase the link between executive pay and organization performance across the nonprofit sector[8].

Hypothesis 2 (H2): The relationship between pay and performance will be stronger in nonprofit organizations with for-profit competitors.

Organizational size. Larger nonprofit organizations may be more likely to adopt pay-for-performance systems due to these organizations being more formalized, more visible, and having more resources. Smaller organizations are typically described as less complex (Pugh, Hickson, and Hinings, 1969) and less formal (Blau and Schoenherr, 1971) than larger organizations. However, as these smaller organizations grow, they are likely to become more formal and professional (Blau, 1970; Blau and Scott, 1962). Wasserman (2006) argued roles become more defined and controls are instituted as organizations grow in size in order to

[8] It is important to note that although I describe this as labor market competition, I test it using product market competition.

facilitate organizational activities. This suggests that the adoption of control mechanisms predicted by agency theory may be more applicable to larger nonprofit organizations. In addition, larger nonprofit organizations may be more likely to adopt formal HR workplace practices, one important component of which is pay incentives (Colvin, Batt, and Katz, 2001), because these organizations are more visible, which may suggest they are more susceptible to pressures of legitimacy (Baron, Davis-Blake, and Bielby, 1986; Jackson and Schuler, 1995). Last, larger nonprofit organizations have more resources, which may be necessary in order to adopt and implement more sophisticated organizational practices (Jackson and Schuler, 1995).

Consistent with the above discussion, many authors have found a positive and significant relationship between the use of sophisticated workplace practices and organization size. Hwang and Powell (2009) found nonprofit organizational size is positively related to formal organizational practices. McNabb and Whitfield (1999) found that human resource management practices that involve employee participation, including profit-related pay or bonuses and share-ownership schemes, are more likely to be found in larger organizations. Last, Lawler, Mohrman, and Ledford (1992) found that larger organizations are more likely to adopt employee involvement practices.

Further, some authors have found a greater use of pay incentives in larger for-profit organizations. Gerhart and Milkovich (1990) found that larger organizations (in terms of number of employees) are more likely to put more pay at risk with bonuses and long-term incentives. McClurg (2001) found that larger firms are more likely to use team rewards than smaller firms.

Many nonprofit organizations are small compared to for-profit corporations (Stone and Brush, 1996; Hallock, 2004). However, similar to the HR literature and the compensation

literature on for-profit firms, I expect larger nonprofit organizations will be more likely to adopt pay-for-performance systems and, therefore, a stronger link between pay and performance will exist in larger nonprofits.

Hypothesis 3 (H3): The relationship between pay and performance will be stronger in larger nonprofit organizations.

Funding diversity. Funding diversity is another factor that is likely to affect incentive schemes in nonprofits. Nonprofits receive funding from a number of different sources. Specifically, Hwang and Powell (2009) argued that a lot variation exists in the degree that organizations rely on different types of revenue to fund their missions. The more funding sources, the more constituencies served by a nonprofit. Also, some revenue sources (such as noncommercial sources) may specify particular requirements for the funding they provide. Stone and Brush (1996) stated, "multiple and often conflicting constituencies strongly influence nonprofit organizations" (pg. 634). They argued that many different groups try to define nonprofit goals, and funders are particularly intrusive in these organizations. Consequently, due to these multiple and conflicting goals, nonprofits' objectives can be difficult to measure (Oster, 1995; Stone and Brush, 1996). Therefore, I believe when revenue sources are more evenly distributed, there will be more groups that believe they should have a say on how the nonprofit operates. When this happens, performance is likely to become more and more unclear. When organizations do not have a clear idea of what performance is it is hard to tie pay directly to performance increases. Therefore, I expect less pay-for-performance as the distribution of funding sources becomes more even, and more pay-for-performance as the distribution of funding becomes less even.

Hypothesis 4 (H4): The relationship between pay and performance will be stronger in nonprofit organizations where funding is more concentrated (or less even).

Age. Young nonprofit organizations may be more likely to adopt innovative human resource (HR) practices including pay incentive schemes. I believe this is more likely to occur in newer nonprofit organizations because it may be harder for older organizations to change their management practices or change their organizational culture once these things are established and have been in existence for a long period of time. Additionally, younger organizations may be more likely to hire professionals with business experience. Last, younger organizations may be more likely to adopt variable pay systems in particular because these organizations are less likely to have the excess resources needed to afford the fixed costs of salaries.

As discussed above, contingent pay is typically discussed as an essential component of an innovative human resources system in the general HR literature. Researchers in this literature have argued that older organizations are less likely to adopt innovative and sophisticated workplace practices, including pay-for-performance systems, for a number of reasons (Ichniowski, Kochan, Levine, Olson, and Strauss, 1996). First, managers and employees in older organizations who may not fare any better under the new system may be resistant to the change in practices. This may be particularly true for pay incentives as it is possible that some employees, that is, those that perform poorly, will receive less pay under this new system[9]. Baron, Hannan, and Burton (2001) found evidence that employees may not respond well to changes in HR systems by finding turnover increased when organizations changed their employment model, and this was found to negatively affect subsequent organizational

[9] It is important to note though that past research in the for-profit sector has found that, on average, the percentage of pay that is variable is actually positively associated with manager pay level (Colvin et al., 2001).

performance. Second, performance has been found to be highest when organizations adopt entire systems of HR practices rather than a single practice (Combs, Hall, and Ketchen, 2006). Therefore, there will be a need to change an entire system of HR practices if an organization chooses to adopt any innovative HR practice, and these practices are likely to be already aligned in older organizations. To change a whole system will require significant time and costs, and may even entail switching additional business practices such as technologies, marketing strategies, etc. For these reasons, it is less likely that older organizations will adopt and use innovative HR practices.

Additionally, some authors have argued that younger organizations are more likely to hire professional managers and this should affect their use of more sophisticated HR systems. Hwang and Powell (2009) found support for the argument that organizational age and formal organizational practices[10] are negatively related, and suggested this occurred because younger nonprofits are more likely to employ professional managers which tend to have previous experiences in firms outside the nonprofit sector. Therefore, these professional managers may bring with them to the nonprofit organization business practices that were used by their previous employers.

Last, some researchers have specifically argued that younger organizations will be more likely to adopt pay-for-performance systems. Ellig (1981) and Balkin and Gomez-Mejia (1987) suggested that incentive schemes will play more of a role in growth firms[11] as this will allow these firms to move some of their compensation expenses to a variable expense, essentially

[10] Hwang and Powell (2009) specifically looked at organizational rationalization, which they defined as the presence of strategic planning, the conduct of an independent financial audit, collection of quantitative data for program evaluation, and the use of consultants.

[11] I am assuming growth stage and age are correlated.

transferring some of the risk to the employee. Because newer organizations may not have a lot of excess funding built up, the organization will only have to pay employees when they are in the financial position to do so. Balkin and Gomez-Mejia (1987) found support that incentive pay is greater in firms in the growth stage.

Following the discussion above, I expect that younger nonprofit organizations will be more likely to adopt pay-for-performance systems.

Hypothesis 5 (H5): The relationship between pay and performance will be stronger in younger nonprofit organizations.

Governance strength. "It is in exactly the poorly governed firms where we expect CEOs to gain control over the pay process" (Bertrand and Mullainathan, 2001, pg. 918). One way boards ensure managers are pursuing owners' interests is through pay-for-performance systems. That is, boards tie executive pay to organizational performance to increase the incentive of CEOs to maximize the value of the firm. Similar to for-profits, I expect well-governed nonprofits will be more likely to tie CEO pay to organizational performance.

Stronger boards are believed to have more control over the pay process. Researchers have investigated and found support for this argument by finding that stronger boards tie more of their executives' pay to measures of performance shareholders care about (Gerhart, Rynes, and Fulmer, 2009). Conyon and Peck (1998) examined whether corporate governance positively affects the relationship between pay and performance by testing if the relationship between pay and performance is larger in organizations with a higher proportion of outside directors on the board. These authors found that management pay and organizational performance are more aligned in firms with outsider-dominated boards. Further, some authors have found a positive

relationship between the concentration of institutional investor ownership[12] and pay-for-performance (e.g. Hartzell and Starks, 2003), and others have found that the presence of larger outside blockholders[13] is associated with greater pay-for-performance and compensation risk (e.g. Gomez-Mejia et al., 1987; Tosi and Gomez-Mejia, 1989).

Prior research in the for-profit sector has found that size of the board affects governance strength, more specifically, larger boards are found to be less effective at governing firms (Yermack, 1996). Lipton and Lorsch (1992) argued that although larger boards have the increased capacity to monitor the CEO, smaller boards are actually more effective. This is because coordination and process problems increase as groups increase in size, and these problems can overwhelm the benefits of having additional people to draw on (Hackman, 1990). Jensen (1993) argued that when boards get too large, they are less likely to function effectively and are easier for the CEO to control, stating that this occurs because there is "great emphasis on politeness and courtesy at the expense of truth and frankness in boardrooms" (pg. 863). Therefore, boards with the more members are more likely to have powerful CEOs who are able to use their power to affect the pay process (Bertrand and Mullainathan, 2001).

Although nonprofit boards are larger than for-profit boards, large nonprofit boards can also have drawbacks and can be too big to carry out governance functions (Ostrower and Stone, 2006). Similar to for-profit boards, I believe smaller nonprofit boards will be more effective at governing nonprofit organizations and therefore will be more likely to adopt pay practices that

[12] "Institutional investors are equity holders who file 13F SEC filings and include bank trusts, insurance companies, investment companies (mutual funds), investment advisors (brokerage firms), pension funds, and endowments with at least $100 million in equity" (Dalton, Hitt, Certo, and Dalton, 2007, pg. 20).

[13] The baseline for the determination of a blockholder is the 5% equity rule used by the SEC. However, who is included as a blockholder is not consistent across studies (Dalton, Hitt, Certo, and Dalton, 2007).

ensure the interests of managers are tied with the interests of owners, that is, pay-for-performance systems.

Hypothesis 6 (H6): The relationship between pay and performance will be stronger in nonprofit organizations with smaller boards.

EMPIRICAL SPECIFICATION

Based on the previous discussion, my basic empirical model is:

$$\ln P_{it} = \beta_0 + \beta_1 \ln R_{it} + \beta_2 \ln A_{it} + \alpha_i + \varepsilon_{it} \qquad (1)$$

where P is total pay of the CEO, R is total revenue, A is total assets, *i* indexes organizations, *t* indexes time, and $(\alpha + \varepsilon)$ is the composite error term containing temporary and permanent effects. Because I am not able to control for all observable and unobservable organizational characteristics that may affect the relationship between pay and performance, I included organizational fixed-effects in my models. This allows me to look within organizations, controlling for all time-invariant organizational characteristics, to determine how variation in my independent variables affects variation in my dependent variable.

DATA AND METHODS

Data

The data on nonprofit organizations come from tax returns of 501c(3) tax-exempt organizations that are required to file Form 990 with the IRS for the years of 1998 to 2003. I defined the CEO as the highest paid officer, director, trustee, and key employee in the organization. I dropped all observations where assets, revenue, and pay are missing or less than $1,000 per year and where pay was greater than $10 million per year. I also deleted organizations where number of board members was missing, and I dropped organizations with negative values, missing values, or values over one for revenue diversity. Last, I dropped all observations where organization age was missing or less than zero or where industry was missing. This resulted in 49,604 organization-years for 13,200 unique nonprofit organizations. Due to the selection criteria, the results are more generalizable to larger nonprofits.

Dependent Measure

Total compensation. Total compensation consisted of base compensation (which includes salary, fees, bonuses, and severance payments paid), contributions to employee benefit plans and deferred compensation, and expense account and other allowances.

Independent Measure

Performance. Performance is defined as current total revenue, as Galaskiewicz, Bielefeld, and Dowell (2006) stated, "organizational research has shown that nonprofits are driven by resource enhancement" (pg. 340). Lagged total revenue did not affect the sign and

significance of the results, and contemporaneous performance had a stronger relationship with CEO pay, therefore I used the current revenue rather than the lagged revenue for each of my regressions.

Controls

Size. Size can be measured in a number of different ways in nonprofits. Following Hallock (2002), I measured size as total assets.

Moderators

Labor market competition. In this study, I defined labor market competition based on whether there are both taxable and tax-exempt firms in the same industry. An industry was coded 1 if taxable and tax-exempt firms coexist, and coded 0 if no taxable competitors exist. I measured this variable in two ways. First, I used previous studies[14] (including Rose-Ackerman, 1996; Leete, 2001; Ruhm and Borkoski, 2003; etc.) and contact with many associations representing organizations in the nonprofit sector to identify nonprofit industries where for-profit organizations compete. All industries in the nonprofit sector were included in this first definition of labor market competition, and therefore I categorized each industry as either having taxable competitors (= 1) or as not having taxable competitors (= 0). Second, I used IPUMS CPS data[15] for January 2003 to identify which industries have both taxable and tax-exempt employers. To do this I found the number of organizations that were listed as "private, for-profit" and "private, nonprofit" in each of the 263 industry codes in the data. I identified which types of organizations

[14] Previous studies that have looked at nonprofit industries with for-profit competitors have focused on explaining the nonprofit pay differential, that is, the difference in pay level between for-profit and nonprofit organizations.
[15] Each record in the IPUMS CPS data is a person who reports on the characteristics of their employer.

are included in each industry code, e.g. the IPUMS CPS industry code "scientific research and development services" includes all establishments engaged in research in the physical sciences, engineering sciences, life sciences, biotechnology field, social sciences, and humanities field, and then matched each of these industries to similar industries in the IRS 990 data, that is, using the NTEE code. All nonprofits with any number of for-profits were listed as having for-profit competitors[16]. I dropped any nonprofit industry that did not match an industry in the IPUMS CPS data. See Appendix B for a list of all the industries included in both definitions of this variable.

It is important to note that the second definition of labor market competition, that is, the definition based on the IPUMS CPS data, may be problematic because the IPUMS CPS categories are fairly broad, and therefore each category includes a variety of different industries. That is, a number of different IRS 990 industries are sometimes combined into one broad IPUMS CPS category and not all IRS 990 industries listed in this broad category may actually have for-profit competitors. For example, zoos and aquariums are grouped together with wildlife sanctuaries and bird sanctuaries, and food banks are included with community housing and other emergency and relief services. Because I wanted to base this measure specifically on the IPUMS CPS data and not attach any judgment to the categorization of this variable, I included all industries grouped into these broad categories under the same coding of this variable. This meant that some nonprofit industries where I don't believe for-profit competitors exist are

[16] An additional concern with this for-profit competitors variable is that this measure is based strictly on whether any for-profit organizations exist rather than the percentage of for-profits in each industry. For example, only 5% of orchestras are for-profit, so it may not make sense to categorize this industry as having for-profit competitors. I was unsure what the cutoff should be to define an industry as having both taxable and tax-exempt organizations (that is, what portion of an industry that is for-profit would mean nonprofits must compete for talent with for-profits) so at this time I decided to define this variable strictly by whether any for-profits exist.

categorized as having for-profit competitors (e.g. sanctuaries and food banks are included under the industries with for-profit competitors in this second measure)[17].

Organizational size. Again, I defined this variable by total assets.

Funding diversity. Hwang and Powell (2009) defined diversity of funding sources as how evenly or skewed the distribution of revenue is. These authors discussed how nonprofits have three sources of revenue: 1) donations (private), 2) government grants and contracts (public), and 3) earned income (market). I based my measure of revenue diversity on this study. This measure is defined as:

Funding diversity index = [1- ((donations/revenue)^2 + (govt. grants /revenue)^2 + (earned income/revenue)^2] x (3/2)

An organization that draws its revenues evenly from all three sources would score 1. In contrast, an organization that relies exclusively on one source would score 0. Organizations that fall in the middle of this would score between 0 and 1.

Organizational age. This was measured as the year of the IRS return minus the year the organization was created as a nonprofit.

Governance strength. I used number of board members to represent governance strength. The larger the board, the less effective they are at governing the firm (Yermack, 1996).

[17] To address this, I ran an additional analysis dropping industries where I don't believe for-profit organizations exist. See footnote 19 below for the results.

Analysis

The data included cross-sectional and panel components. Although I ran both cross-sectional and fixed-effects regressions, I focus on the fixed-effects regressions. To make use of the diversity of the nonprofit sector and relax the idea that the relationship between pay and performance is consistent across the nonprofit sector, I ran separate fixed-effects regressions based on broad industry categories (9 categories[18]). To examine the effect of labor market competition, I calculated separate fixed-effects regressions for nonprofit organizations that compete with for-profits and nonprofits that do not compete with for-profits using both definitions of the labor market competition variable. To test the effect of organizational size, funding diversity, organization age, and governance on the pay-performance relationship, I first interacted each of the continuous contextual variables by performance. This allows me to examine the direct effect of each factor on the correlation between pay and performance. I then created dummy variables defining high and low groups based on the 33rd and 66th percentile, i.e. small versus large, non-diverse versus diverse funding, young versus old, and small board versus large board, and I ran separate fixed-effects regressions for each group[19]. When testing the dummy moderators, I dropped any organization that changed between low and high (or vice versa) across the years[20], and excluded organizations that fell between the 34th and 66th percentile. Previous studies, including Malmendier and Tate (2009), have used this method to examine whether a different relationship exists between two variables depending on a third variable as it

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18 There is a tenth category of unknown, but no observations were listed in this category.

19 I also used the median to define high and low groups and the results were very similar. I present these results in appendix C. Further, I tested the moderators by defining high and low based on initial conditions (first year of data), late conditions (last year of data), and without dropping organizations that changed between high and low. The results are very similar.

20 Due this this, I dropped 29 organization-years for organization size, 1401 organization-years for funding diversity, 0 organization-years for age, and 5282 organization-years for board size.

ensures that "high" category organizations are only matched to other "high" category organizations (and vice versa for "low" organizations). For example, Malmednier and Tate (2009) examined the effect of winning a business award on CEO pay and organizational performance based on a firm's governance structure, where they defined good and bad governance using the 33rd and 66th percentile of a governance index. Using this method allows me to examine whether the effect of revenue on CEO pay within firms is different for organizations classified as "high" compared to organizations classified as "low" for each of my contextual variables. Further, I tested the significance of the difference between the high and low groups by interacting the "high" group dummy with each variable included in my model. I looked at the significance of the interaction of the "high" dummy with log revenue to determine whether the relationship between CEO pay and organizational performance is significantly different between the high and low group.

RESULTS

Table 1 presents the summary statistics for the main variables of my analysis. All monetary values are converted to 2003 dollars[21]. On average, nonprofit CEOs make $193,080 in total compensation. The organizations in this study bring in about $63 million dollars in revenue and have about $125 million in total assets. These organizations have a fairly low concentration of funding sources, as this averaged about 0.292 on a range of zero to one. These organizations are about 49 years old and have about 23 members on their board of directors.

[21] Based on the Consumer Price Index for all urban consumers (CPI-U).

There are so many different industries within the nonprofit sector, so I also report the summary statistics by the broad nonprofit category in table 2. It is clear that nonprofit CEOs are paid very differently across the sector. Head officers of health organizations are paid the most, averaging $291,642, whereas the head officers of religious organizations are paid the least, averaging $90,512. As seen in table 2, both performance and size varies significantly across the sector. Further, all the moderators I examine in this paper vary across the different industry categories. It is clear that there are substantial differences regarding how much nonprofit CEOs are paid within the nonprofit sector, and this may suggest that the relationship between pay and performance differs depending on the nonprofit industry.

Table 3 displays the results of testing hypothesis 1a and 1b. Specifically, in these models, I examine whether agency theory or stewardship theory provides a better explanation of nonprofit CEO pay. Agency theory would suggest a positive and significant relationship between pay and performance (hypothesis 1a), whereas stewardship theory would suggest no relationship (hypothesis 1b). In model 1, I regressed log total compensation on log revenue and controlled for log assets and for year effects. The coefficient on revenue suggests that pay and performance are related. In model 2, I controlled for broad industry category, in model 3 for each of the 26 industries, and in model 4 for the narrowest industry grouping which consists of 657 industry codes. In each of these models, it is clear that CEO pay and organizational performance are positively and significantly related. Last, in model 5, I controlled for organizational fixed-effects. Looking at the estimate on revenue, as performance increases by 10%, the pay of the CEO rises by 0.4%. This seems small, yet it is still positive and significant[22].

[22] These results do not change when using lagged log revenue instead as organizational performance.

Therefore, the results suggest that there is a relationship between pay and performance in nonprofits, which lends support for agency theory[23].

Because there are a wide variety of organizations within the nonprofit sector, I tested whether the relationship between pay and performance differs depending on nonprofit industry; table 4 shows these results. In each regression, I controlled for year effects and organization effects. As can be seen in table 4, it appears that a relationship between pay and performance only exists in health and human services organizations. Specifically, as revenue increases by 10% in health organizations, the pay of the CEO increases by 0.6%. Further, as the revenue of a human services organization increases by 10%, the pay of the CEO rises by 0.7%. No relationship between pay and revenue exists in any of the other nonprofit industries. Health and human service organizations make up a large number of organizations in the nonprofit sector and therefore appear to be driving the positive and significant results in table 3. Therefore, the results in table 4 suggest that stewardship theory may actually provide a better explanation of how nonprofit CEOs are paid in most organizations in the nonprofit sector, excluding organizations in the health and human services industry[24].

In tables 5, 6, and 7, I investigate a number of situational factors that may affect the strength of the relationship between pay and performance. All models included both year effects and organization fixed-effects. In table 5, I investigate hypothesis 2, that is, whether nonprofit organizations with taxable competitors have a higher pay-for-performance relationship than

[23] It is important to note that even though a positive and significant relationship exists across nonprofit organizations, the estimate is much smaller than what is found in the for-profit sector (Hallock, 2002).

[24] In separate analysis, I examined the pay-for-performance relationship of organizations in the health and human services category based on finer industry groups. Again, I find significant variation in the strength of the relationship across the industry categories. See appendix A for results.

nonprofit organizations without taxable competitors. The definition of labor market competition in panel A includes all nonprofit industries, whereas the definition in panel B is based on IPUMS CPS data and only includes nonprofit organizations whose industry was similar to an industry listed in the IPUMS CPS data. In panel A, I find for organizations with for-profit competitors, as revenue increases by 10%, the pay of the CEO increases by about 0.6%. In organizations without for-profit competitors, I find no relationship exists between pay and performance. In panel B, I find similar results. Results from both panel A and panel B suggest that the strength of the relationship between pay and performance is larger in organizations that compete for talent with for-profit firms[25], and further I find these differences are significant. These results support hypothesis 2.

In table 6, I examine how organization size, funding diversity, organization age, and board size directly affect the relationship between CEO pay and performance. That is, the models in table 6 allow me to examine how changes in the moderators affect the pay-performance link in nonprofits. I controlled for year effects and organization effects in each model. Column (1) presents the results for hypothesis 3, which predicted the relationship between pay and performance would be stronger in larger organizations. A positive value on the interaction between size and revenue would imply that larger nonprofits have greater pay for performance. The results in table 6 however suggest that as organizations get larger, the relationship between pay and performance decreases; these results counter hypothesis 3[26].

[25] In an additional analysis using the definition from panel B, I dropped all the industries that I don't believe belong in the "industries with taxable competitors" and found stronger support for my hypothesis. Specifically, the estimate on log revenue for organizations with for-profit competitors increases when I dropped nonprofits that don't fit into the category of having for-profit competitors but are listed in an IPUMS CPS category that has for-profits. This suggests the relationship may even be stronger for organizations with for-profit competitors than is shown in the table.

[26] The size of this effect however appears to be very small.

Column (2) displays the impact of diversity of funding sources on the pay-performance relationship. The estimate on the interaction between diversity and log revenue is also negative and suggests that as an organization draws its revenue more evenly from all three sources the relationship between pay and performance decreases. These results support hypothesis 4. Column (3) investigates age[27] and column (4) investigates board size on the pay-performance link. Both of these moderators appear to have no effect on the strength of the pay-performance relationship[28].

In table 7, I broke down each contextual factor into high and low based on the 33rd and 66th percentile[29]. I excluded any organizations that switched between high and low groups (or vice versa) across the years. The models in table 7 allow me to examine whether a different pay-performance relationship exists for organizations categorized as "high" versus organizations categorized as "low" based on each organizational level variable. Similar to table 6, it appears that size and funding source affect the relationship between pay and performance as the estimates for smaller organizations is stronger than for larger organizations (0.064 compared to 0.044), and the estimate for organizations with less diverse funding is stronger than for organizations with more diverse funding (0.066 to 0.052). However, the difference between the pay-performance relationship for small and large organizations and organizations with less diverse and more diverse funding sources are not significant. These results seem to suggest that it is the actual

[27] The significance and strength of the estimates do not change when the year effects are left out of the model investigating age.

[28] Sign and significance of results in table 6 do not change when combining all the moderators into one regression. Similar to Wasserman (2006), I compared a baseline model (which included only revenue, assets, and year effects) to a model with all the moderators (but again without organizational fixed-effects), and found that the inclusion of the moderators increased the R-squared over the baseline model (although the increase was small).

[29] The results are very similar using the median instead of the 33rd and 66th percentile. Therefore, I do not present these results in table 7; however, I include them in appendix C. Additionally, the results are very similar using initial conditions (that is, the first year's value) and last year's conditions to define high and low.

change within organizations, that is, as nonprofit organizations get larger or smaller and as nonprofit organizations increase or decrease their funding diversity, which directly affects the strength of the relationship between pay and performance.

Looking at the results in table 7 for age and board size, younger nonprofits (compared to older nonprofits) and organizations with smaller boards (compared to organizations with larger boards) have stronger pay-for-performance systems for their CEOs. Specifically, as revenue increases by 10%, the pay of the CEO increases by 0.53% in younger nonprofits; whereas there appears to be no relationship between pay and performance in older nonprofits. Additionally, as revenue increases by 10%, the pay of the CEO increases by 0.75% in nonprofits with smaller boards; whereas CEO pay increases by 0.35% for a 10% change in revenue in nonprofits with larger boards. Further, I find these differences are highly significant. These results support hypothesis 5 and 6. Finding significant effects with the dummy variables instead of the continuous moderators suggests that younger nonprofit organizations and nonprofit organizations with smaller boards are more likely to have stronger pay-for-performance systems, rather than the relationship between pay and performance changing as nonprofits get older or as nonprofits increase or decrease their number of board members.

The results discussed above support hypothesis 2, 4, 5, and 6. However, I do not find support for hypothesis 3. Although I expected to find a stronger relationship between CEO pay and organizational performance in larger nonprofit organizations, I find the relationship is stronger in smaller nonprofit organizations.

DISCUSSION AND CONCLUSION

Across the nonprofit sector, I find as performance increases, so does the pay of the nonprofit CEO. However, when I examine pay-for-performance by industry, I find pay increases with performance in only a few industries-- the health organizations and human services organizations. This suggests that the results found in previous studies when looking across the entire nonprofit sector may have been driven by a few large nonprofit industries. Therefore, stewardship theory appears to provide a better explanation for pay incentives in most organizations in the nonprofit sector. Further, in this study, I find certain situational factors affect the strength of the pay-for-performance relationship in nonprofit organizations. Specifically, smaller nonprofit organizations, younger nonprofit organizations, nonprofit organizations with less diverse funding, nonprofit organizations with stronger boards, and nonprofits with for-profit competitors have stronger pay-for-performance systems for their top executive.

Agency theory is widely used to explain executive compensation contracts yet some researchers have acknowledged that this theory may not apply to all organizations. Organizations where employees are motivated by the organizational goals or missions may actually be better explained by stewardship theory. The results of this study suggest that nonprofits are one context where stewardship theory may offer a better description.

Yet, even in this context, there is variation in the adoption and implementation of control mechanisms. That is, some nonprofit organizations, including organizations outside the health and human services industries, are using pay incentives and bonuses to reward their top

executives. For example, I found by examining 2009 IRS 990 forms[30], that organizations such as the National Collegiate Athletic Association, the Greater Los Angeles Zoo Association, the YMCA of San Diego, NPR Inc., the Museum of Modern Art, and the Children's Hospital Medical Center all awarded their CEO / Executive Director a bonus or incentive compensation in 2009. I name just a few nonprofits here to illustrate the variety of nonprofit organizations offering incentive pay. In addition, the amounts of these payouts vary significantly, and this can also be seen in the few examples I listed above. Whereas NPR Inc. offered their executive director $50,000 as a bonus in 2009, the Children's Hospital offered their CEO $687,209. The other nonprofits fell in the middle: Museum of Modern Art paid $159,000, the Greater Los Angeles Zoo paid $75,000, and the YMCA of San Diego paid $377,044 as a bonus. Further, I found that a number of nonprofits in 2009 did not provide a bonus payout but discussed how their organization offered pay-for-performance to their executives. For example, the World Wildlife Fund Inc. noted that their board reviews the performance of individuals and relevant market data prior to any increases in salary or bonus[31], and Guide Dog Foundation for the Blind Inc. stated, "Annual goals such as increasing organizational revenues are established for the CEO. Compensation for the CEO is partially determined by the successful completion of the established goals" (IRS 990, 2009, Schedule J, pg. 3). It is clear from these examples that although my results suggest that the relationship between pay and performance is weak or nonexistent in many nonprofit organizations, there are some nonprofits that are using these pay

[30] IRS 990 forms can be on the National Center for Charitable Statistics website: http://nccsdataweb.urban.org/PubApps/search.php.

[31] I found this on pg. 85 of their 2009 IRS 990 form.

practices to reward their top executive and the amounts and types of practices vary significantly across these organizations[32].

Although in this study I find evidence that CEO pay is tied to organizational performance in the health and human services industry, there is also variation across these organizations. In a separate analysis, results are displayed in appendix A, I tested the pay-for-performance relationship based on finer industry groupings for the health and human services category. I find in the health category, health care (E), mental health and crisis intervention (F), and voluntary health associations and medical disciplines (G) have a positive and significant relationship between pay and performance. Medical research (H) is the only industry in the health care category that does not appear to link executive pay to total revenue. In the human services category, crime and legal-related (I), recreation and sports (N), and human services organizations (P) appear to account for the positive relationship that I find between pay and performance across the human services category. I find no relationship between pay and performance for the other organizations grouped into the human services category. These results suggest that even across organizations within the same nonprofit category, there is significant variation in the relationship between pay and performance.

It is interesting to find that age and board size do not directly affect the relationship between pay and performance[33] but, instead, that younger organizations are distinct from older organizations and that organizations with smaller boards are distinct from organizations with

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[32] In many of the IRS 990 forms I looked at, I could not find any evidence of a pay-for-performance system. However, it is more difficult to conclude that a nonprofit does not offer pay incentives based on their IRS 990 form due to the possibility that an organization offers it but did not pay it out in a given year. In addition, not every organization commented on their pay practices and may have chosen not to discuss their system it in their 990 form even if they did had a pay-for-performance system in place.

[33] This may, in part, be due to a functional form issue and in fact suggests that performance should not be specified linearly.

larger boards. Moreover, I find that younger nonprofits and nonprofits with smaller boards are more likely to have stronger pay-for-performance systems. It may be less likely to expect that changes to the pay-for-performance relationship would occur as nonprofits age a year or as nonprofits add an additional board member to their board of directors. So it makes sense to find significant results only when using the dummy variables to represent these moderators. Specifically, it may be easier for younger, rather than older, organizations to adopt pay-for-performance practices (and other innovative HR practices) due to the difficulty of changing workplace practices and organizational cultures once they have been established. Further, organizations with smaller boards may be more likely to have adopted pay incentives for their executives, rather than incentive practices changing as a board grows or decreases in size.

The results regarding the size of the organization are inconsistent with what I expected; however, this may be due to a number of reasons. First, perhaps larger firms have more powerful CEOs, and because CEOs are known to be risk averse (Gerhart and Rynes, 2003), CEOs with power may be able to influence their boards to tie less of their pay to performance. Using this explanation, the results may suggest that as nonprofit organizations get larger, the CEO gains more power and is able to influence the board to tie less of his / her pay to performance. Second, smaller firms may have more pay-for-performance because they do not have the resources to provide a guaranteed salary to their managers. Balkin and Gomez-Mejia (1987) stated, "Financially, smaller firms are less able to afford fixed cost expenditures. By providing a lower base compensation (which is a significant fixed cost in the short run) in exchange for an array of incentive pay programs, smaller companies can buffer themselves against short-term financial pressures" (pg. 172). These authors found that scale is negatively related to incentive mix. Using this explanation, the results on size may suggest that as

organizations shrink, they are less able to pay their CEO a fixed salary and therefore increase the amount of CEO pay that is tied to organizational goals (and vice versa). Although I did not expect to find a larger relationship between CEO pay and organizational performance in smaller organizations, it seems reasonable based on the two explanations offered above.

Contributions, Limitations, and Future Research

This study contributes to the compensation literature by enhancing our understanding of how organizations compensate their leaders when these leaders may have entered their organization for reasons beyond pay. Specifically nonprofit leaders are described as caring about the organizational mission and wanting to help it achieve it's goals (Rose-Ackerman, 1987), and, further, these leaders are thought to care less about money than the traditional compensation literature discusses (Hansmann, 1980). The broader literature on executive compensation tends to focus on large publicly traded for-profit organizations, where the interests of managers and interests of owners are expected to diverge. This research ignores that there is likely to be convergence of interests in some organizations; and, all organizations likely exist somewhere on a continuum between convergence and divergence (Gerhart and Rynes, 2003). The results from my study help to address how organizations pay their executives when executives' and owners' interests do not diverge as agency theory predicts, and provides reasons why organizations may adopt pay incentives even when interests converge. Future research should examine whether certain contextual factors affect the convergence of interests of owners and executives, possibly influencing executives' interests to become less aligned with those of owners. This would provide additional reasons beyond the ones discussed here for the use of pay incentives in organizations where it is expected that interests converge.

Additionally, this compensation study focuses on a context we know very little about, that is, nonprofits. Approximately 10% of workers are employed in nonprofits (Hallock, 2002), hence they are clearly an important part of the economy. Yet, although thousands of studies have been done on executive pay (Gomez-Mejia et al., 2010), few researchers (exceptions include Preston, 1989; Oster, 1995; Hallock, 2000; 2002; Frumkin and Keating, 2010) have focused on executive pay practices in nonprofits. The results from this study suggest that executives in nonprofits are paid differently from executives in for-profit organizations. However, incentive practices, which are very common in the for-profit sector (Milkovich et al., 2011), are also used in some nonprofit organizations. I find certain organizational factors help to explain the increased use of these incentives in nonprofits.

Last, individuals are becoming more concerned about finding jobs that are meaningful and rewarding (Michaelson, 2010). However, it is not clear what role compensation practices play in motivating these individuals, as some studies have found that extrinsic rewards can have negative effects on individuals' intrinsic motivations especially when these individuals are already motivated. Future research should examine specifically what happens to employee motivation, performance, and turnover when employees are motivated by the organizational mission and their organizations adopt pay incentives.

Like all research, this study has some limitations. First, labor market competition was defined by the industry. Future research should address additional ways to examine labor market competition. Specifically, researchers could better define this variable by asking each nonprofit organization whether they compete for talent with for-profit firms. Additionally, researchers could use geographic variation (similar to Davis, Freedman, Lane, McCall, Nestoriak, and Park, 2009) to investigate how the pay-for-performance relationship changes when a for-profit firm

starts a new business near a nonprofit organization (or vice versa). Second, this study focuses on nonprofit organizations so it is unclear whether the results will generalize across organizations. Future research should test the moderators proposed here in other organizational sectors. Third, I defined the CEO of each nonprofit by the highest paid officer. Over 8,700 unique job titles exist in the data; therefore, I was unable to use the job titles to define each CEO. Research on the for-profit sector have found that only about 81% of CEOs are the highest paid executive in their organization (Hallock and Torok, 2010). Therefore, future studies should sort through and use the job titles to examine the CEO pay-for-performance relationship in nonprofits. Fourth, the definition of performance may vary across nonprofit industries, so research should examine whether results hold using other measures of performance[34].

In addition to what is discussed above, there are a number of directions for future research. Future research should explore how compensation practices differ in nonprofits beyond just examining pay-for-performance. Nonprofits clearly pay less than for-profits (Hallock, 2004), and the results from this study suggest that nonprofits are less likely to use pay-for-performance to reward their executives. However, in what other ways does compensation differ in the nonprofit sector? Nonprofits are exposed to different environmental factors, which suggests that nonprofits may have different constraints and opportunities, compete in different labor markets, use different technology, etc. from for-profit firms. Therefore, nonprofits may adopt very different compensation practices from for-profits firms, and further, certain compensation practices may be more successful in different organizational sectors. Future research should help reveal how the configuration of compensation practices differs across

[34] This is specifically true for the funding diversity moderator as I hypothesized that the mechanism by which diversity affects the pay-for-performance relationship is through the addition of other performance metrics in the organization.

sectors; for example, nonprofits are typically discussed as providing employees with more nonfinancial workplace benefits such as work-life balance instead of financial benefits (Hallock, 2000). Future research should also help us address which compensation practices are most effective in each sector. Although this study addresses what types of organizations are more likely to adopt pay-for-performance practices, it does not address the effect of these systems on performance. We know from previous research in for-profit firms that HR practices in general (Batt, 2002) and pay-for-performance systems in particular (Lazear, 2000) have significant effects on both organizational-level and individual-level outcomes. Therefore, additional work should be conducted on the effects of pay-for-performance in nonprofits on organizational outcomes such as organizational performance or organizational survival, and individual outcomes such as attraction, retention, and motivation of nonprofit CEOs and other nonprofit executives.

Conclusion

Many nonprofits today struggle with attracting and retaining executive talent. The number one reason cited by executives for leaving their nonprofit job is low pay (Bell, Moyers, and Wolfred, 2006; Nonprofit HR Solutions, 2012). Pay-for-performance systems, which are highly used in the for-profit sector, appear to be a tool that some nonprofits are using to reward their executives when these leaders help the organization achieve its goals.

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Table 1. Summary statistics. Nonprofit CEOs.

	1998-2003
Total compensation	193080
	(235701)
	[136213]
Revenue	62888683
	(230310551)
	[13115179]
Assets	124743196
	(710692987)
	[30686581]
Financing diversity	0.292
	(0.301)
	[0.171]
Organization age	48.831
	(179.334)
	[30]
Size of board	23.413
	(26.312)
	[18]
N	49604

Source: IRS 990 data

[a] 2003 dollars

[b] Means, standard deviations in paratheses, and medians in brackets

Table 2. Summary statistics. Nonprofit CEOs by broad industry category.

	Arts	Education	Environ/Anim	Health	Human Serv	Internat.	Mutual	Pub/soc benef.	Religion
Total compensation	154763	184740	125360	291642	111795	182032	168092	162545	90512
	(153836)	(206374)	(99186)	(320114)	(97634)	(342899)	(232330)	(157766)	(102457)
	[119788]	[156310]	[102037]	[215330]	[92602]	[156799]	[65827]	[119140]	[66114]
Revenue	16911333	69386495	15819835	122906817	14584597	62941175	34344038	31633209	10439762
	42040149	(252018118)	(41654033)	(331724752)	(73965963)	(138468702)	(94521085)	(99835134)	(27784529)
	[5453756]	[20204196]	[4818382]	[45003120]	[5525594]	[12843881]	[5353441]	[7934348]	[1845802]
Assets	62215299	237462424	47636277	159606979	27833063	78894418	217880016	117156687	32754054
	151268144	(1352319151)	(99370981)	(453011464)	(90975255)	(305726777)	(805169726)	(800727990)	(107718487)
	[16752621]	[51266342]	[15711627]	[57720344]	[9115433]	[28423096]	[34419852]	[29037966]	[4171395]
Financing diversity	0.560	0.408	0.452	0.137	0.339	0.295	0.110	0.217	0.235
	(0.286)	(0.262)	(0.307)	(0.233)	(0.306)	(0.295)	(0.232)	(0.278)	(0.274)
	[0.651]	[0.423]	[0.500]	[0.021]	[0.258]	[0.204]	[0]	[0.070]	[0.088]
Organization age	42.980	53.563	46.081	46.965	47.104	24.710	62.355	57.400	56.512
	(142.930)	(161.263)	(167.899)	(166.359)	(187.917)	(18.223)	(253.544)	(247.474)	(253.894)
	[31]	[43]	[30]	[31]	[26]	[20]	[24]	[21]	[20]
Size of the board	31.542	27.817	24.885	21.078	20.327	26.554	14.124	26.054	11.817
	(26.515)	(24.798)	(19.882)	(26.605)	(22.506)	(45.904)	(15.115)	(33.317)	(13.097)
	[26]	[24]	[21]	[18]	[16]	[17]	[12]	[18]	[8]
N	3466	9986	1385	15941	12558	772	121	4475	900

Source: IRS 990 data

[a] 2003 dollars

[b] Means, standard deviations in paratheses, and medians in brackets

Table 3. Results of pay-for-performance regression analysis.

	Dependent variable: ln(total compensation)				
	(1)	(2)	(3)	(4)	(5)
Ln(revenue)	0.274***	0.259***	0.255***	0.250***	0.040***
	(0.003)	(0.003)	(0.004)	(0.004)	(0.007)
Ln(assets)	0.069***	0.073***	0.079***	0.091***	0.054***
	(0.003)	(0.003)	(0.003)	(0.004)	(0.012)
Year effects	yes	yes	yes	yes	yes
Major category effects (10)	no	yes	no	no	no
Industry effects (26)	no	no	yes	no	no
Narrow industry effects (657)	no	no	no	yes	no
Organization effects	no	no	no	no	yes
Constant	5.979***	6.195***	6.143***	5.999***	10.356***
	(0.031)	(0.034)	(0.035)	(0.040)	(0.195)
Adj. R^2	0.437	0.443	0.451	0.490	0.776
N	49604	49604	49604	49604	49604

[a] IRS 990 data, 1998-2003

[b] 2003 dollars

Table 4. Results of pay-for-performance regression by category. All regressions include organization fixed-effects.

	Dependent variable: ln(total compensation)								
	Arts	Education	Environ/Anim	Health	Human Serv	Internat.	Mutual	Pub/soc benef.	Religion
Ln(revenue)	0.022	0.017	0.019	0.060***	0.073***	-0.064	0.045	0.029	-0.021
	(0.021)	(0.018)	(0.021)	(0.018)	(0.014)	(0.039)	(0.074)	(0.018)	(0.041)
Ln(assets)	0.055*	0.103***	0.084*	0.067**	0.028	0.159**	0.126	-0.011	0.058
	(0.032)	(0.029)	(0.046)	(0.028)	(0.017)	(0.068)	(0.136)	(0.034)	(0.049)
Year effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Organization effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	10.134***	9.604***	9.630***	9.815***	9.928***	9.948***	8.127***	11.203***	10.555***
	(0.515)	(0.504)	(0.726)	(0.477)	(0.291)	(1.055)	(1.797)	(0.540)	(0.758)
Adj. R^2	0.836	0.762	0.854	0.670	0.791	0.847	0.954	0.781	0.843
N	3466	9986	1385	15941	12558	772	121	4475	900

[a] IRS 990 data, 1998-2003

[b] 2003 dollars

Table 5. Results of fixed-effects analysis by taxable competitors.
Panel A. All nonprofit organizations.

	DV: ln(total compensation)	
	Taxble competitors	No taxable competitors
Ln(revenue)	0.063***	0.012[c]
	(0.011)	(0.010)
Ln(assets)	0.045***	0.066***
	(0.015)	(0.017)
Year effects	yes	yes
Organization effects	yes	yes
Constant	9.918***	10.080***
	(0.266)	(0.265)
Adj. R^2	0.752	0.806
N	33477	16127

Panel B. Only includes organizations with similar industries to IPUMS-CPS.

	DV: ln(total compensation)	
	Taxble competitors	No taxable competitors
Ln(revenue)	0.065***	0.017[c]
	(0.011)	(0.014)
Ln(assets)	0.036**	0.025
	(0.015)	(0.026)
Year effects	yes	yes
Organization effects	yes	yes
Constant	10.037***	10.633***
	(0.266)	(0.415)
Adj. R^2	0.750	0.806
N	33317	6869

[a] IRS 990 data, 1998-2003

[b] 2003 dollars

[c] Difference is significant

Table 6. Results of fixed-effects analysis with continuous moderators.

	Dependent variable: ln(total compensation)			
	(1)	(2)	(3)	(4)
Ln(revenue)	0.154***	0.049***	0.042***	0.038***
	(0.045)	(0.008)	(0.008)	(0.008)
Ln(assets)	0.151***	0.053***	0.054***	0.054***
	(0.040)	(0.012)	(0.012)	(0.012)
Funding diversity		0.497***		
		(0.173)		
Age			0.063***	
			(0.002)	
Number of board members				-0.002
				(0.002)
Ln(assets)*Ln(revenue)	-0.007**			
	(0.003)			
Funding diversity*Ln(revenue)		-0.030***		
		(0.011)		
Age*Ln(revenue)			0.000	
			(0.000)	
Number of board members* Ln(revenue)				0.000
				(0.000)
Year effects	yes	yes	yes	yes
Organization effects	yes	yes	yes	yes
Constant	8.692***	10.216***	7.134***	10.389***
	(0.686)	(0.200)	(0.197)	(0.198)
Adj. R^2	0.776	0.776	0.776	0.776
N	49604	49604	49604	49604

[a] IRS 990 data, 1998-2003

[b] 2003 dollars

Table 7. Results of fixed-effects analysis with dummy moderators.
Moderator created with 33rd and 66th percentile.

	DV: ln(total compensation)							
	Small orgs	Large orgs	Nondiverse	Diverse	Young	Old	Small board	Large board
Ln(revenue)	0.064***	0.044***[d]	0.066***	0.052***[d]	0.053***	0.004[e]	0.075***	0.035*[e]
	(0.010)	(0.016)	(0.015)	(0.015)	(0.012)	(0.015)	(0.012)	(0.018)
Ln(assets)	0.065***	0.062*	0.036	0.035**	0.044**	0.084***	0.058***	0.067**
	(0.012)	(0.036)	(0.024)	(0.019)	(0.017)	(0.026)	(0.017)	(0.031)
Year effects	yes	yes	yes	yes	yes	yes	yes	yes
Organization effects	yes	yes	yes	yes	yes	yes	yes	yes
Constant	9.054***	10.243***	9.963***	10.423***	10.159***	10.354***	9.052***	10.483***
	(0.189)	(0.645)	(0.407)	(0.323)	(0.285)	(0.456)	(0.271)	(0.537)
Adj. R^2	0.838	0.580	0.777	0.784	0.788	0.713	0.831	0.670
N	16323	16841	15613	16220	16520	16550	14877	13303

[a] IRS 990 data, 1998-2003

[b] 2003 dollars

[c] All organizations that switched from the low to high moderator group (or vice versa) were dropped

[d] Difference is not significant

[e] Difference is significant

Appendix A. Results of fixed-effects analysis by NTEE industry.

	Dependent variable: ln(total compensation)											
	E	F	G	H	I	J	K	L	M	N	O	P
Ln(revenue)	0.067***	0.155***	0.147**	-0.143***	0.201**	0.077	0.130	0.023	0.031	0.211***	0.003	0.067***
	(0.020)	(0.052)	(0.058)	(0.044)	(0.087)	(0.058)	(0.088)	(0.033)	(0.252)	(0.062)	(0.044)	(0.019)
Ln(assets)	0.062*	0.029	-0.121*	0.267***	0.349***	-0.029	-0.114	-0.058	0.465**	-0.093	0.047	0.025
	(0.032)	(0.066)	(0.072)	(0.082)	(0.077)	(0.075)	(0.114)	(0.051)	(0.230)	(0.076)	(0.053)	(0.022)
Year effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Organization effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	9.850***	8.555***	11.572***	9.978***	2.968**	10.774***	10.511***	11.529***	3.718	9.477***	10.725***	10.090***
	(0.554)	(1.092)	(1.149)	(1.411)	(1.278)	(1.151)	(2.004)	(0.810)	(3.307)	(1.286)	(0.865)	(0.388)
Adj. R^2	0.645	0.706	0.878	0.849	0.822	0.831	0.907	0.779	0.757	0.770	0.815	0.776
N	13586	1332	556	467	367	738	218	1499	95	637	850	8154

[a] IRS 990 data, 1998-2003

[b] 2003 dollars

[c] E: Health Care
F: Mental Health and Crisis Intervention
G: Voluntary Health Associations and Medical Disciplines
H: Medical Research
I: Crime and Legal-Related
J: Employment
K: Food, Agriculture and Nutrition
L: Housing and Shelter
M: Public Safety, Disaster Preparedness and Relief
N: Recreation and Sports
O: Youth Development
P: Human Services

Appendix B. Labor market competition moderator.

Panel A. All nonprofit industries.

Industries with taxable competitors	Industries without taxable competitors
Arts, culture, and humanities (A[a])	For each industry:
Education (B[a])	Alliance and advocacy (01)
Veterinary services (D40)	Management and technical assistance (02)
Zoos and acquariums (D50)	Professional societies and associations (03)
Health care (E[a])	Research institutes and public policy analysis (05)
Mental health and crisis intervention (F[a])	Single organization support (11)
Medical research (H[a])	Fund raising and fund distribution (12)
Legal services (I80)	Support N.E.C. (19)
Employment prep and procurement (J20)	
Vocational counseling (J21)	All other industries not coded as having
Job training (J22)	taxable competitors
Housing and shelters (L[a])	
Recreation and sports (N[a])	
Thrift shops (P29)	
Child day care (P33)	
Family services (P40)	
Family services for adolescent parents (P45)	
Family counseling (P46)	
Pregnancy centers (P47)	
Personal social services (P50)	
Financial counseling (P51)	
Residential care and adult day programs (P70)	
Adult day care (P71)	
Group homes (P73)	
Hospices (P74)	
Supportive housing for older adults (P75)	
Homes for children and adolescents (P76)	
Senior centers (P81)	
Developmentally disabled centers (P82)	
Blind and visually impaired centers (P86)	
Deaf and hearing impaired centers (P87)	
Human services not else classified, N.E.C. (P99)	
Science and technology (U[a])	
Social science (V[a])	
Telecommunications (W50)	
Financial institutions (W60)	
Credit unions (W61)	
Public utilities (W80)	
Insurance providers (Y20)	
Local benevolent life insurance associations (Y22)	
Mutual insurance companies and associations (Y23)	

Panel B. Based on IPUMS CPS data.

Industries with taxable competitors	Industries without taxable competitors
Arts education (A25)	Environment (C[a])
Film and video (A31)	Animal-related (D[a])
Printing and publishing (A33)	Voluntary health associations and medical disciplines (G[a])
Radio (A34)	Labor unions (J40)
Museums (A50)	Scouting (O40)
Art museums (A51)	Boy Scouts of America (O41)
Children's museums (A52)	Girl Scouts of the U.S.A. (O42)
Folk arts museums (A53)	Civil rights, social action, and advocacy (R[a])
History museums (A54)	Real estate associations (S47)
Natural history and natural science museums (A56)	Philanthropy, voluntarism, and grantmaking foundations (T[a])
Science and technology museums (A57)	Religion-related (X[a])
Performing arts (A60)	Alliances and advocacy for each industry (A01-Y01)
Performing arts centers (A61)	Professional societies and associations (A03-Y03)
Dance (A62)	Fund raising and fund distribution for each industry (A12-Y12)
Ballet (A63)	
Theater (A65)	
Music (A68)	
Symphony orchestras (A69)	
Singing and choral groups (A6B)	
Bands and ensembles (A6C)	
Performing arts schools (A6E)	
Elementary and secondary schools (B20)	
Preschools (B21)	
Primary and elementary schools (B24)	
Secondary and high schools (B25)	
Special education (B28)	
Charter schools (B29)	
Vocational and technical schools (B30)	
Higher education (B40)	
Two-year colleges (B41)	
Undergraduate colleges (B42)	
Universities (B43)	
Graduate and professional schools (B50)	
Adult education (B60)	
Libraries (B70)	
Educational services (B90)	
Botanical gardens and arboreta (C41)	
Bird sanctuaries (D32)	
Wildlife sanctuaries (D34)	
Zoos and acquariums (D50)	
Health care (E[a])	
Mental health and crisis intervention (F[a])	
Medical research (H[a])	
Half-way houses for offenders and ex-offenders (I31)	
Legal services (I80)	
Employment prep and procurement (J20)	
Vocational counseling (J21)	
Job training (J22)	
Vocational rehabilitation (J30)	
Food, agriculture, and nutrition support (K19)	
Agricultural programs (K20)	
Food programs (K30)	
Food banks and pantries (K31)	
Congregate meals (K34)	
Soup kitchens (K35)	
Meals on wheels (K36)	

Housing and shelter (L[a])	
Disaster preparedness and relief services (M20)	
Search and rescue squads (M23)	
Recreation and sports (N[a,b])	
Youth centers and clubs (O20)	
Adult and child matching programs (O30)	
Big brothers and big sisters (O31)	
Youth development programs (O50, O51, O52, O53, O54, O55)	
Thrift shops (P29)	
Children and youth services (P30)	
Child day care (P33)	
Family services (P40)	
Family violence shelters (P43)	
Family services for adolescent parents (P45)	
Family counseling (P46)	
Personal social services (P50)	
Financial counseling (P51)	
Residential care and adult day programs (P70)	
Adult day care (P71)	
Group homes (P73)	
Hospices (P74)	
Supportive housing for older adults (P75)	
Homes for children and adolescents (P76)	
Center to support the independence of specific populations (P80)	
Senior centers (P81)	
Developmentally disabled centers (P82)	
Blind and visually impaired centers (P86)	
Deaf and hearing impaired centers (P87)	
Science and technology (U[a])	
Social science (V[a])	
Telecommunications (W50)	
Financial institutions (W60)	
Credit unions (W61)	
Public utilities (W80)	
Insurance providers (Y20)	
Local benevolent life insurance associations (Y22)	
Mutual insurance companies and associations (Y23)	

[a] Excludes alliances and advocacy (01), management and technical assistance (02), professional societies and associations (03), research institutes and public policy analysis (05), single organization support (A11), fund raising and fund distribution (A12), support N.E.C. (A19)

[b] Excludes sports associations, special olympics, and professional athletic leagues

Appendix C. Results of fixed-effects analysis with dummy moderators.
Moderator created with median.

	DV: ln(total compensation)							
	Small orgs	Large orgs	Nondiverse	Diverse	Young	Old	Small board	Large board
Ln(revenue)	0.058***	0.032**[d]	0.063***	0.040***[e]	0.057***	0.010[f]	0.065***	0.028*[f]
	(0.009)	(0.013)	(0.013)	(0.013)	(0.010)	(0.012)	(0.011)	(0.015)
Ln(assets)	0.064***	0.048*	0.066***	0.045***	0.046***	0.081***	0.053***	0.087***
	(0.012)	(0.027)	(0.022)	(0.017)	(0.015)	(0.021)	(0.015)	(0.026)
Year effects	yes	yes	yes	yes	yes	yes	yes	yes
Organization effects	yes	yes	yes	yes	yes	yes	yes	yes
Constant	9.275***	10.637***	9.527***	10.153***	9.718***	10.257***	9.672***	9.911***
	(0.180)	(0.473)	(0.364)	(0.286)	(0.240)	(0.361)	(0.247)	(0.438)
Adj. R^2	0.824	0.619	0.764	0.781	0.788	0.727	0.823	0.680
N	23705	23600	19859	20270	23451	23384	18927	17098

[a] IRS 990 data, 1998-2003

[b] 2003 dollars

[c] All organizations that switched from the low to high moderator group (or vice versa) were dropped

[d] P-value test of the difference = 0.097 which is essentially not significant

[e] Difference is not significant

[f] Difference is significant

CHAPTER 3

CEO PAY: TESTING AGENCY THEORY AND TOURNAMENT THEORY IN LABOR UNIONS

ABSTRACT

In this paper, I examine the extent to which two commonly used compensation theories, that is, agency theory and tournament theory, help explain the pay of union presidents. Based on 14,510 unique international, intermediate, and local labor unions from 2000 to 2007, I find a number of characteristics define union presidents' pay: pay is tied to performance, pay spreads increase with level, and pay increases with the management of larger executive teams. Although these results support both theories, unexpectedly the evidence suggests that tournament theory provides a stronger fit. This finding, including additional reasons I will discuss, helps to explain the mixed results in the executive compensation literature.

Executive compensation continues to be a controversial issue. There are at least two reasons for this. First, income inequality is at historic levels (Piketty and Saez 2003). Second, many people believe executive compensation levels are too high. The central question at the heart of the controversy is: do executives deserve their high paychecks? There are generally two sides to the debate. Some critics (e.g. Bebchuk and Fried 2004; Kerr and Bettis 1987) argue that executive pay is irrational and excessive, whereas defenders of executive pay (e.g. Murphy 1985) argue that executives are worth every nickel they make. Similar to for-profit executive pay, the pay of union officers is also a contentious practice, under public scrutiny (French 1992). Yet, although a large literature exists on executive pay in for-profit firms, few researchers have focused on the pay of union leaders. Therefore, it remains unclear how unions compensate their leaders and whether union leaders deserve the paychecks they receive.

In this study, I ask: what explains union president pay? Further, are the predictions of compensation theories developed to explain for-profit CEO pay applicable to the union setting? Last, why are the findings in the compensation literature so mixed? Substantial research on for-profit executive pay is based on two theories, that is, agency theory and tournament theory. Researchers have generally found that these two theories partially explain the pay of corporate executives. Investigations of agency theory focus on whether pay is based on performance, specifically on how executive compensation relates to firm size, profitability, and growth (Murphy 1999; O'Reilly et al. 1988). Economists developed tournament theory to explain the structure of pay. These researchers argue that executive pay can be characterized as competing in a tournament in which the CEO wins the top prize (Lazear and Rosen 1981). Although agency theory and tournament theory were initially developed to explain the pay of executives in for-profit organizations, people respond to economic incentives regardless of the institution in

which they work. Therefore, the predictions of these two theories can be applied to other groups. They have, in fact, already been tested in a variety of different institutions (e.g. see Eisenhardt 1988 who studied agency theory for retail sales clerks and Ehrenberg and Bognanno 1990 who tested tournament theory in the 1984 Professional Golf Association tour).

I will examine these questions by analyzing compensation data in 14,510 unique international, intermediate, and local unions across eight years. I contribute to the literature in a number of ways. First, I address how leaders are paid in unions. This is a unique context where we know very little regarding executive pay. Second, I use sophisticated methodological techniques, and show that different findings may be obtained when using less rigorous approaches. I believe the discrepancy in results when using different methodological techniques helps to explain the mixed findings in the past compensation literature.

LITERATURE REVIEW

This paper focuses on two different compensation models: agency theory and tournament theory. These models are rooted in the executive compensation literature and used extensively by researchers to address the variation in managerial pay.

Agency Theory

Agency theory is the dominant theory used to explain executive pay. In the most basic example of agency theory, a firm is composed of two parties, the principal and the agent (Holmstrom 1979). The owner of the organization is the principal whereas the agent is an individual who provides the labor. The problem with agency relationships is that agents do not

always act in the best interest of the principal. To motivate the agent to pursue goals that are aligned with the principals, the principal designs a compensation system that links the agent's pay to measures of performance the owner can observe such as return on assets or earnings per share (Lambert et al. 1993). A core hypothesis of agency theory is that CEO compensation policies will depend on changes to the principal's wealth in the company she / he leads (Jensen and Murphy 1990).

A large literature exists on the determinants of pay for executives with most of this work focusing on the for-profit sector (Murphy 1999). O'Reilly et al. (1988), using cross-sectional data from 105 Fortune 500 firms, found weak support for agency theory. Specifically, they found performance (measured as return on equity (ROE)) was positively but weakly related to CEO compensation. Finkelstein and Boyd (1998) reported a correlation between ROE and CEO cash compensation of 0.13 and ROE and CEO total compensation of -0.03.

Although the results of many past cross-sectional studies suggest that the link between executives' pay and firm performance is weak, by using panel data, some researchers have found a substantial relationship between corporate performance and managerial pay (e.g. Murphy 1985). This is because panel data allows researchers studying the pay-performance relationship to control for the organization with fixed-effects, that is, control for all factors likely to affect pay such as industry and "unmeasurables" at the organization-level that do not change over time, and therefore specifically examine how changes in performance of an organization affects changes in pay of the executive of that organization. Another way to say this is that this method allows researchers to investigate the link between firm performance and CEO pay *within* organizations over time. Murphy (1985), using panel data from 1964 to 1981, examined executive compensation data from the corporate proxy statements of publicly held corporations. He found

corporate performance was strongly and positively related to managerial pay. Therefore, according to this study, by looking within for-profit organizations with panel data, it appears that executives are rewarded (or punished) based on firm performance.

Some recent research has addressed the compensation of top managers in charitable nonprofits. Hallock (2002) examined the link between performance and managerial pay in charitable and religious organizations and found that even controlling for the organization, firm size was strongly related to pay[1]. He also found similar results when looking at the link between total revenue and managerial pay.

It seems reasonable to expect agency theory will apply to union president pay. First, union members can be thought of as shareholders, where similar to for-profit firms, there is a separation of ownership from control. In unions, members elect officers, thereby delegating control of the organization to these officers. To motivate officers to act in the interest of members, members can design compensation systems to link the pay of union officers with measures of performance they care about (e.g. members' wages). Second, comparable to those at the top of for-profit organizations, the top union officers are very visible and typically can be characterized as focal people within the organization. This suggests that union members see top officers as having the most influence on things they care about such as wages and benefits and that union officials are the easiest people to observe in unions.

A number of studies have investigated the pay-performance link of union presidents (e.g. Bressler 1972; Ehrenberg and Goldberg 1977; French 1992; French et al. 1983; Sandver 1987;

[1] It has been suggested by some researchers (e.g. Tosi, Werner, Katz, and Gomez-Mejia, 2000) that finding firm size as a determinant of executive compensation supports the existence of agency problems. However, Gerhart and Rynes (2003) argued, "growth is a desired objective of most owners, not just CEOs" (pg. 143); therefore, it is important to note that firm size may actually be considered an appropriate performance measure.

Sandver and Heneman 1980); however, all of the studies on union compensation (except one study described below) used cross-sectional data and focused exclusively on one union level (local or international[2]). Further, only one study, that is, Sandver and Heneman (1980), addressed the pay of officers below the president. These cross-sectional studies indicate that pay and performance (including firm size) are positively related in unions.

One study investigated the pay-performance relationship at all union levels using panel data. Based on performance measures discussed in the past literature, Hallock and Klein (2009) examined the determinants of union presidents' pay over the years 2000 - 2007. They found that both measures of performance (level of membership and wages of union members) were strongly related to the pay of local, intermediate, and international presidents, even after controlling for organization fixed-effects and organization size. Although these authors found a positive and significant relationship between firm size and president pay in the cross-section, they did not find it was an important determinant when including organization fixed-effects. In addition, they found the elasticity of pay with respect to membership in unions is very similar to the elasticity of pay with respect to employees in for-profit organizations. I base my performance measures specifically on the Hallock and Klein (2009) study, but expand on this previous analysis by examining the pay systems of the top three officers.

To summarize, the literature supports the predictions of agency theory; specifically, as stated by Bressler (1972), "Union officials are not unaffected by the agreements they negotiate" (pg. 49). The above studies and the basics of agency theory suggest the following hypotheses:

[2] Local unions are defined as the lowest branches of international unions, which typically represent workers in a particular plant or geographic area. International unions are the highest branches of unions with a scope representing workers in all states of the United States and Canada. I also include intermediate unions in my analysis. These unions are the administrative structures situated between locals and internationals and can represent workers in a number of geographic districts and a number of industries (Chaison, 2006).

Hypothesis 1 (H1): Union officers' compensation will increase with increasing membership size.

Hypothesis 2 (H2): Union officers' compensation will increase with increasing average member wage.

Hypothesis 3 (H3): Union officers' compensation will increase with increasing assets.

Tournament Theory

Lazear and Rosen (1981) proposed tournament theory to explain executive pay differentials and to explain the extraordinarily high pay levels of CEOs. This theory suggests that the compensation of the top executive in a corporation may exceed his / her marginal product yet be economically efficient. Lazear and Rosen stated, "On the day that a given individual is promoted from vice-president to president, his salary may triple. It is difficult to argue that his skills tripled in that one-day period, presenting difficulties for standard theory… It is not a puzzle, however, when interpreted in the context of a prize" (Lazear and Rosen 1981: 847). Organizations consider the tournament scheme efficient because the extraordinary top prize acts as an incentive to those lower down the corporate hierarchy (Main et al. 1993). In essence, Lazear and Rosen (1981) argued that organizations do not pay CEOs so much because the CEO is worth that much, but rather the CEO wage is higher than his / her marginal product in order to induce all other employees in the organization to work harder in competition for the top prize (Gerhart and Rynes 2003; Gomez-Mejia et al. 2010).

Several important features characterize tournament structures (Gerhart and Rynes 2003). First, organizations set prizes before the tournament begins and organizations award prizes based

on rank-order; therefore pay is tied to the job rather than the individual. Second, the absolute spread between the payoffs for each rank should affect the motivation and effort of those participating in the tournament; therefore larger gaps between levels motivate lower-ranked employees, and as one moves up the organizational hierarchy, the gaps between levels get larger. Also, due to the decline in promotion possibilities as one moves up the organization, the pay growth is larger to preserve the expected value of promotion. Last, at the senior management level, those competing to become CEO can be thought of as competing in a tournament; as the number of vice presidents (that is, one level below the top) increase, so should CEO pay and the gap between the CEO and the next level because more individuals are in competition for the top spot (Lazear and Rosen 1981). This is because as the number of vice presidents increase, the chance of winning the one top spot decreases. The extra pay is therefore used to as an incentive to persuade VPs to compete although their chances of winning have decreased.

While the predictions of tournament theory are clear, the empirical evidence in support of these predictions is quite mixed. Some studies have found support for tournament theory. For example, Leonard (1990) studied large U.S. corporations between 1981 to 1985 and found that pay differentials were greater as one moved up the hierarchical ladder and also when the promotion rate was lower. Both findings are consistent with the propositions of tournament theory. It is important to note that this test of tournament theory, that is, testing the differentials between levels, can be examined with cross-sectional data. This is because this test does not require any change in organizational variables such as the number of vice presidents (VPs) or performance. However, as I argue below, the second test of tournament theory (that is, how number of VPs affects the CEO pay) should be tested with longitudinal data. Main et al. (1993) examined executive compensation over a 5-year period and also found support for tournament

theory. Specifically, they found that size of the prize received at promotion was positively related to the number of contestants and that rewards increased with promotions to the highest levels of the corporation. Bognanno (2001) tracked individual executives at more than 600 for-profit firms for up to 8 years and, controlling for executive and firm-level variables, found that CEO pay and the difference in pay between the CEO and average VP rose as the number of competitors increased.

Although some studies provide support for the tournament model, a number of researchers have found results that are inconsistent with tournament theory. O'Reilly et al. (1988) examined pay data in a cross-section of 105 Fortune 500 firms and failed to find a positive relationship between CEO pay and number of VPs. Hallock (2002) examined tournament theory in nonprofits by suggesting that board members may be contestants competing for the top position. He examined how the number of board members affects the pay of the top executive and found that the larger the board, the less the top officer, director, or trustee was paid. This was true even when controlling for industry and organization fixed-effects. Last, Henderson and Fredrickson (2001) examined how the number of VPs affected the pay gap between the CEO and the average pay of the other top management team members. Using cross-sectional data, these authors found a negative relationship between number of vice presidents and the CEO pay gap.

It is clear that the results regarding whether tournaments exist in organizations is inconsistent. These mixed findings may be due to the way in which different researchers have tested tournament theory. Specifically, I focus on whether researchers use a cross-sectional or longitudinal dataset, as this may lead to different conclusions. Further, researchers have

operationalized the CEO prize in a number of different ways, which is also likely to lead to different results.

Similar to for-profit organizations, leaders of labor unions generally move up to the top of the organization by moving through the ranks (Dunlop 1990). Dunlop (1990) argued that in business organizations, promotion is the most common route to the executive ranks. Further, he contended that union leaders come almost exclusively from their members and have a well-defined ladder that leads to the president position. This suggests that there is a clear path that must be followed to reach the top executive position in both the for-profit and union sector, a structure consistent with a tournament pay scheme. Therefore, although tournament theory was developed to explain executive pay in the for-profit sector, tournament theory may also apply in the union sector.

The above discussion suggests two hypotheses concerning tournaments in labor unions:

Hypothesis 4 (H4): The pay difference between levels will increase as one moves up the organizational hierarchy at the executive level.

Hypothesis 5a (H5a): After controlling for standard economic determinants, as the number of officers increases so will the prize of moving from the second to top officer.

Agency and Tournament Theory

Although agency and tournament theory are similar in that both theories provide arguments that more pay reduces the need for supervision and provides stronger incentives that better align principal-agent interests (Henderson and Frederickson 2001), these two theories differ in a number of important ways. First, tournament theory assumes that the pay of an

executive can exceed his / her marginal product whereas agency theory assumes that the pay of an executive is equal to his / her marginal product. Second, pay in tournament theory is based on one's rank in a hierarchy, where rank is determined by relative performance (that is, organizations evaluate employees' performance relative to their peers). However, agency theory provides the argument that higher performance should lead to higher pay; therefore absolute performance is what is important in this theoretical perspective. Last, as described above, in tournament theory, organizations with more VPs offer higher CEO pay because with additional VPs there is more competition for the top spot, and higher pay will provide incentives for individuals to want to compete. However, agency theory suggests that after controlling for changes in performance or changes in firm size, more VPs will be associated with either lower CEO pay or should have no effect on CEO pay. A negative effect on CEO pay can be expected under agency theory for two reasons. First, more VPs may be additional monitors within organizations; therefore, with more people watching the CEO, the possibility of whistle blowing increases. Since monitoring and incentives are substitutes under agency theory (Zajac and Westphal 1994), with more monitoring, there is less of a need for a highly paid CEO (Hallock 2002). Second, once any changes in performance and size are controlled for (that is, the size and complexity of a firm is given), a larger number of VPs means that more people share the work, which reduces the job demand of the CEO. Therefore, this would suggest a reduction in the CEO's pay. However, at the very least, we should expect under agency theory that increasing the number of VPs should not affect the CEO's pay. Gerhart and Rynes (2003) stated "…if agency theory is correct, executives should be rewarded primarily for performance, as indicated by measures such as profitability and shareholder returns (Hallock and Murphy 1999)" (pg. 142). In agency theory, extra VPs affect CEO pay only via firm performance. Thus an estimation

model including firm performance should reveal no additional contribution from the number of VPs in explaining the variance of CEO pay. Although tournament theory provides the argument that more VPs is correlated with higher CEO pay, agency theory suggests that more VPs is correlated with lower CEO pay or is not correlated with CEO pay at all.

The above discussion indicates a number of competing hypotheses between the two theories. However, in my data I am specifically able to address the hypotheses of how the number of VPs affects CEO pay (that is, in the union context, how the number of officers affects union president pay). Therefore, agency theory offers a competing prediction to H5a:

Hypothesis 5b (H5b): After controlling for standard economic determinants, increasing the number of officers should have no effect or should be negatively related to the prize of moving from second to top officer.

Executive Pay in the Union Sector

Although both agency theory and tournament theory are likely to be applicable to the union setting, it may be the case that it is more likely when comparing these explanations simultaneously to expect that agency theory will provide a better explanation for the pay of the top officer. As seen in past studies (see Hallock and Klein 2009), the performance measures focused on in union studies may have a more direct link to members than would be expected from the traditional performance measures studied in for-profit organizations (such as profits, return on assets, etc.). Specifically, the variation of union presidents' pay explained by performance is around 55% to 65% in the cross-section (Hallock and Klein 2009), while the variation of pay explained by performance in for-profit firms is often substantially smaller rarely exceeding 15% (Gomez-Mejia et al. 2010). In addition, tournament theory appears less likely as

an explanation for the pay of the top union officer due to both the consensus ideology (Kochan et al. 1994) of these organizations and the expectation by union members that everyone should be paid about the same. Main et al. (1993) found in for-profit firms that the difference in pay increased by 83% when moving from level 3 to level 2, and 142% when moving from level 2 to level 1. These are large differentials between levels as one moves up the organizational hierarchy, and are likely to be much smaller in the union setting due to more of an emphasis placed on internal equity (Dunlop 1990). For these reasons, although I expect both theories to help explain the pay of union top officers, when I compare both theories simultaneously, agency theory should provide a better explanation for how the top officer is paid.

EMPIRICAL SPECIFICATION

Based on the discussion to this point including previous studies on the determinants of union officers' pay, my basic empirical model is:

$$\ln P_{it} = \beta_1 \ln M_{it} + \beta_2 \ln W_{it} + \beta_3 \ln A_{it} + \beta_4 O_{it} + \alpha_i + \varepsilon_{it} \qquad (1)$$

where P is the gross salary of the top officer of the labor union[3], M is the total membership in the labor union, W is the average wage of union members, A is the total assets of the labor unions, O is the number of officers, and $(\alpha_i + \varepsilon_{it})$ is the composite error term containing possible permanent effects. The subscripts *i* and *t* represent organizations and time, respectively.

In my analysis, I use organizational fixed-effects to control for all observable and unobservable organizational characteristics that are time-invariant. Organizational fixed-effects

[3] I am operating under the assumption that union leaders are primarily paid in cash, with a set of common benefits that are correlated with cash compensation.

estimation uses information strictly on changes within the organization in estimating the effects of my independent variables on my dependent variable. Including organization fixed-effects allows me to look within an organization to determine how the variation of the independent variables (e.g. performance or number of officers) affects the variation of the dependent variable (that is, base salary). If I assume that the source of endogeneity arises only through the permanent component of the error term, α_i, and not the transitory component, ε_{it}, then the standard fixed-effects estimation of equation (1) will yield consistent estimates of the parameters (Hallock and Klein 2009).

In the past, researchers testing tournament theory have operationalized the dependent variable for the CEO prize in a number of ways. To help address and explain the inconsistent findings in this literature, I test my hypotheses with a variety of different dependent variables used in past research.

DATA AND METHODS

For this analysis, I use data from LM-2, LM-3, and LM-4 reports. These reports are filed by each labor organization subject to the Labor-Management Reporting and Disclosure Act (LMRDA), the Civil Service Reform Act (CSRA), and the Foreign Service Act (FSA) from 2000 – 2007. These laws cover labor organizations that represent employees who work in the private sector, employees who work for the U.S. Postal Service, and most employees who work for the Federal government. Union organizations that represent workers who only work for the state, the county, or the municipal government are excluded from these laws and therefore are not required to file these forms. The forms contain a common set of information for all labor unions;

however, in this analysis I focus on a subset of this information. I categorize labor unions as "International," "Intermediate" or "Local" based on the United States Department of Labor Office of Labor-Management Standards' classification, and define the top three officers as the three highest paid officers in each union. In all, I study 207,897 observations (person-years) of data for 14,510 unique organizations. This represents 73 unique international unions, 742 unique intermediate unions, and 13,695 unique local unions.

Table 1 displays the summary statistics for each level of union. By looking at international unions, it is clear that the average compensation for the top officer is $155,937, with a median of $121,883. The average compensation for the second officer is $120,215, with a median of $104,964. And the average compensation for the third officer is $104,815, with a median of $97,719. The average international union has 115,882 members. The median number of members is much smaller (14,646) due to the fact that some of the international unions are so large. The average level of assets for the international unions is $39 million and the annual dues are $18.6 million.

Based on Hallock and Klein (2009), I also created an estimate of the average union member wage:

$$W = (D/0.015)/M, \qquad (2)$$

where D = annual dues of the union, M is union membership, and I assume that 1.5% of the union member's pay is contributed to the labor union as dues[4]. Using the formula in equation (2), I estimated that the average member of an international labor union during this time earned

[4] Raisian (1983) suggests that between 1.13% and 1.6% of union member's wage are paid in dues. Results do not substantially differ when using the min (1.13%) or max (1.6%) instead of 1.5% to calculate the average member wage.

$44,034. Table 1 also reports summary statistics for intermediate and local labor unions. Clearly, there are substantially more union-years of data in my intermediate sample (9,651) than international sample (1,065). There are still more observations in my local sample (197,181). The tables clearly show that local unions pay their top three officers significantly less than and are smaller than intermediate unions, which are substantially smaller than international unions. However, the estimate for the average wage of intermediate union members is substantially higher than the average member wage of locals and internationals. This may be due to the fact that this number is an estimate, and that there are small numbers for members in the intermediate unions. One other issue evident in this study is that this analysis is based on the top three highest-paid officers, so only unions with three or more officers were included in the sample. Because some small unions have fewer than three officers, my sample is somewhat distinctive as it is comprised only of larger unions[5].

RESULTS

Is There Evidence in Support of Agency Theory? (H1-H3)

Tables 2a – 2c present the regression results of the determinants of pay for the top three officers in international, intermediate, and local unions. For each model (columns 1-3), I regress the natural logarithm of salary of each one of the top three union officers (column 1 is top officer, column 2 is second officer, and column 3 is the third officer) on performance (which is

[5] When including observations for all unions (that is, not imposing the restriction of having at least three officers), I find smaller means and medians for all variables included in our analyses. So, I reran each regression including all observations. I generally do not find a difference in significance or sign from the results presented in this paper; however, in some cases the strength of the coefficients change. I present the results of only unions with three or more officers because I believe this is a more conservative test of my hypotheses.

measured as the number of members and estimated average member wage) and firm size (which is measured by total assets), controlling for year (to control for differences over time) and for the union with organization fixed-effects.

Because different unions could have unmeasured characteristics that I may want to consider, including organization fixed-effects allows me to examine the relationship between variation in each performance measure and variation in the salary of union officer within each union. I only present the models for the longitudinal analyses for each of these tests as I found, following numerous other researchers (e.g. Liu and Batt 2007; Murphy 1985), specifications that exclude organization fixed-effects may be misleading.

Looking specifically by type of union, Table 2a displays the results of an examination of H1-H3 for only international unions. In column 1, I regress the salary of the top union officer on membership, average member wage, assets, and controls for the year and the organization. The coefficient on membership and average member wage are both positive and significant. This suggests that international unions link pay and performance, that is, as membership size and average member wage increase, so does the pay of the international union president.

It is important to note, similar to Hallock and Klein (2009), I found different results for what affects top officer's pay in the cross-section (see Appendices 1-4 for results from the cross-sectional and longitudinal analyses). In the cross-section, when looking across organizations, it appears that average member wage and total assets are what matters to top officer's pay which would suggest that larger unions and unions with higher average member wages pay their presidents more. However, once I control for the organization, and specifically look within unions, I see that membership size and average member wage are important determinants of

president pay. This means that as membership size and as average member wage increase, the pay of the top union officer also increases. Whereas the cross-sectional results reveal total assets as an important determinant, the panel data results do not reveal this as an important determinant but instead indicate that membership size is important. I find similar differences between the cross-sectional results and longitudinal results across my analysis. Previous work on executive compensation has shown that due to the omission of important variables, cross-sectional results may be biased and misleading. Murphy (1985) states, "Economic theories of efficient compensation suggest that, in addition to current performance, contracts will depend on other factors such as entrepreneurial ability, managerial responsibility, firm size, and past performance. Absent a theory indicating the relevant variables and data on these variables, these cross-sectional models are inherently subject to serious omitted variables problems" (pg. 12). If I assume that these omitted variables are unchanging over time, then including firm fixed-effects allows me to assess correctly the relationship between pay and performance. I believe the estimates from the specification with firm fixed-effects are the least biased and therefore only discuss the findings from analyses including fixed-effects and further, base my main conclusions on these specifications.

I do the same analysis for the second officer and third officer of international unions. I report these results in column 2 (second officer) and column 3 (third officer) of Table 2a. By looking at the panel data results, it appears that average member wage matters for both officers, but membership only matters for the second officer. In general, the results discussed above indicate that in international unions as membership and average member wage increases, so does the pay of the top three officers.

Table 2b displays the analysis for the compensation of the top three officers of intermediate unions, and Table 2c displays the results for local unions officers. As seen in both tables in columns 1 - 3, both increasing membership and increasing average member wage are correlated with increasing pay for all three officers.

Therefore, in this analysis I find in almost all specifications, ln(membership) and ln(average member wage) are positive and significant. These results suggest that within international, intermediate, and local unions, as performance increases, the pay of union officers also increases. These results provide support for H1 and H2, the associations that agency theory predicts. Therefore it appears that agency theory provides a useful explanation of executive pay in unions.

Is There Evidence in Support of Tournament Theory?

As discussed above, there are inconsistent results regarding whether tournaments exist in organizations. Some researchers have found support for tournament theory, whereas other researchers have not found support for tournament theory. Part of this discrepancy in findings could be due to the variety of methods that researchers have used to test tournament theory's propositions. Therefore, in this analysis, I employ multiple methods used in previous studies to test the predictions of tournament theory. Further, I explain below which method I believe is most appropriate and show why empirically.

(a) Pay difference between levels (H4). Table 3 displays the results of the differences in pay as one moves up the organizational hierarchy for each union type (H4). I performed this test of tournament theory by computing the ratio of the difference in pay between levels over the pay of the lower level by each union. The ratios are thereby calculated within each organization.

Specifically, I use the medians to test this hypothesis since the mean can be highly influenced by a few unions offering extremely large pay increases. This analysis is similar to analyses done in the for-profit sector (e.g. Conyon et al. 2001; Leonard 1990). Generally, researchers examining the pay difference in the for-profit sector have found that pay spreads increased with level, therefore providing support for tournament theory. I find the difference between the first and second level is generally larger than the difference between the second and third level. The results from Table 3 are consistent with the idea that tournaments are operating in unions.

(b) Agency theory or tournament theory? Number of officers and union president pay (H5a and H5b). Because I find support for both agency theory and tournament theory, I am able to test the conflicting prediction of how the number of officers affects CEO pay. Table 4 displays the results for H5 for local, intermediate, and international unions. Specifically, I test whether the number of officers has a positive, negative, or no effect on the pay of the top officer and the gap between the first and second officer. Similar to Hallock (2002), panel A displays the results of the regression of the log of top officer pay on number of officers, log of membership, log of average member wage, and log of assets. Panel B displays the results of the regression of the log of the salary of the top officer minus the log of the salary of the second officer on number of officers and the performance and firm size variables, as Conyon et al. (2001) discussed that this is the general procedure used by many authors including Main et al. (1993). Last, similar to O'Reilly et al. (1988), panel C displays the results of the log of top officer pay on number of officers, log of the salary for second officer, log of membership, log of average member wage, and log of assets. In each of these tests of tournament theory, I control for year effects and control for organization effects.

It is important to note in Table 4, that the coefficient on number of officers in the cross-section is often negative; however, in most cases once I control for organization fixed-effects, the coefficient becomes positive (see Appendix 4). These results suggest that past analyses of tournament theory using cross-sectional data may be misleading and biased, and further suggest why there are inconsistent findings when examining this second test of tournament theory in the literature. Therefore, I again only discuss results based on specifications with organization fixed-effects.

From the regression of salary of top officer on number of officers, panel A, columns 1 - 3, I find that once I control for performance and size, that the coefficient on number of officers is both positive and significant which suggests that as the number of union officers increase, unions increase the pay of their top officer. Panel B displays the results when regressing the log of the gross salary of the first officer minus the log of the gross salary of the second officer. Once I control for performance and size, I find the coefficient on number of officers is negative but not significant for internationals, positive and not significant for intermediates, and negative and significant for locals. Using this test, it does not appear that tournaments are operating in unions. Panel C displays the results of the regression of top officers' salary on number of officers and salary of second officer. As can be seen, when looking strictly at how the number of officers within each union affects pay of their top officer, I find the coefficient is positive in all union types and also significant for intermediate and local unions. This appears to indicate that at least in intermediate and local unions, even when controlling for other determinants of top officer pay, as the number of officers increases, so does the pay of the top officer.

Considering the different results found by each test, what can we make of these findings? Examining the organization fixed-effects regressions of panels A and C of Table 4, I generally

find similar results. Both indicate that when looking within a firm, adding an extra officer increases the pay of the top officer. Both of these tests provide support for tournament theory. However, the models of panel B appear to indicate that the number of officers does not affect pay, except in local unions (in which case it is negatively affected). This test of tournament theory, although used in previous analyses, may be misspecified as explained below. The specification for Table 4 panel B is equation (3), and the specification for Table 4 panel C is equation (4):

$$\ln P1_{it} - \ln P2_{it} = \beta_1 \ln M_{it} + \beta_2 \ln W_{it} + \beta_3 \ln A_{it} + \beta_4 O_{it} + \alpha_i + \varepsilon_{it} \quad (3)$$

$$\ln P1_{it} = \beta_5 \ln M_{it} + \beta_6 \ln W_{it} + \beta_7 \ln A_{it} + \beta_8 O_{it} + \beta_9 \ln P2_{it} + \alpha_i + \varepsilon_{it} \quad (4)$$

where, similar to equation (1) above, P is the gross salary of the top officer of the labor union, M is the total membership in the labor unions, W is the average wage of union members, A is the total assets of the labor unions, O is the number of officers, and $(\alpha_i + \varepsilon_{it})$ is the composite error term containing possible permanent effects. However, in equation (3) and equation (4), I add $\ln P2_{it}$; P2 is the gross salary of the second officer of the labor union. Again, the subscripts *i* and *t* represent organizations and time, respectively.

Equation (3) is equation (4) under the assumption that B_9 equals one. To test whether this assumption is correct, I ran t-tests for $B_9 = 1$ in equation (4). In all union types, I reject the hypothesis that $B_9 = 1$; therefore equation (3), panel B, is misspecified. Therefore, I base my conclusions on whether tournaments exist in unions on the findings from the tests displayed in panel A and panel C. These findings suggest that as a union increases its number of officers, the pay of the top officer and pay gap between the first and second officer increases. Therefore,

when testing the competing prediction of agency theory and tournament theory, my results provide support for tournament theory.

DISCUSSION AND CONCLUSION

Although there is a considerable body of research examining the compensation of executives in for-profit firms (Murphy 1999), there are relatively few studies that address the pay of union leaders. Further, the findings in the for-profit executive pay literature are mixed and inconsistent (Gomez-Mejia et al. 2010). I address these issues in this paper.

My results support the importance of both agency theory and tournament theory for explaining the pay of leaders in American labor unions. I find evidence that pay and performance are linked in unions, supporting agency theory. Further, I find evidence that as officers move up within a union, the pay difference between levels increases supporting tournament theory. Both tournament theory and agency theory appear to be useful explanations for explaining union president pay.

Finding support for both theories in unions, I am able to test these theories simultaneously and address the competing prediction. By including propositions from both models, I examine the effect of changes in the number of officers on union president pay once I control for changes in performance. By only focusing on models that include organization fixed-effects, I generally find that the coefficients on number of officers are positive and significant. This test of both theories supports tournament theory and therefore tournament theory appears to offer a better account of the pay of the top officer.

Although I use data from American labor unions to test my hypotheses, I believe the results pertain to the larger literature on executive pay and provide insight into the mixed findings in past studies. I believe the stronger evidence for tournament theory may suggest that the current conceptualization of agency theory fails to address the importance of managing more vice presidents, that is, the increase in coordination and integration costs that comes with having a larger team. If CEOs have to manage the relationships among VPs, then the number of relationships increase as the number of VPs increase.

Larger groups are more difficult to coordinate and integrate (Gooding and Wagner 1985; Haleblian and Finkelstein 1993), therefore by adding more VPs to an executive team, the job of a CEO may become more complex (Henderson and Fredrickson 2001). Levine and Moreland (1990) stated, "as groups get larger, it also changes in other ways, generally for the worse" (pg. 593). They argued that individuals belonging to larger groups are less satisfied, participate less in group activities, are less likely to cooperate with one another, and are more likely to misbehave than individuals in smaller groups. Further, they contended that the larger groups suffer coordination problems and motivation losses, which prevent them from achieving their potential. In addition, Gooding and Wagner (1985) suggested that as groups grow in size, group members have an increasing inclination to free-ride. Finally, it is clear that larger groups take longer to make decisions and reach agreements (Thomas and Fink 1963). Therefore, due to all these reasons, CEOs may have to work harder as executive teams grow in order to integrate members and coordinate interests within the group.

The increase in coordination and integration costs that comes from managing larger teams may help to explain why I find adding additional members to an executive team has a positive effect on the pay of the top officer, even when controlling for changes in firm size and

performance. It appears that organizations recognize this increase in complexity and provide their CEOs with additional pay to compensate their top manager. To be clear, though I am not saying that either theory is wrong, my findings may suggest that agency theory's prediction about the effects of additional executive team members, that is, that extra vice presidents should only affect CEO pay via firm performance or should have a negative effect on CEO pay, is not supported.

Finding stronger support for tournament theory in unions is surprising, as it appears reasonable to expect agency theory to have a stronger effect in this setting. I expected to find stronger support for agency theory when testing the contradicting propositions of agency and tournament theory simultaneously in the union setting; however, my results support tournament theory. These findings therefore provide stronger evidence for the importance of number of vice presidents as a determinant of CEO pay in other settings.

My results are most in line with Bognanno (2001) who found, even after controlling for executive and firm variables, that increasing the number of competitors increased the CEO prize in for-profit firms. It is important to note that Bognanno (2001) included in his models a number of variables that could be considered performance variables, e.g. net sales and total employment. Therefore, even controlling for performance, he still found a positive and significant relationship between number of vice presidents and CEO pay. Further, this relationship remained positive and significant even when including individual and firm fixed-effects. Although my study was conducted in the unique setting of unions, it is clear that my results are similar to those found in for-profit organizations.

Limitations

First, I use the pay data to define the level of the officer. Although the titles related to president and general chairman were listed more frequently than any other job title listed for the top officer, over 4,779 unique job titles exist in the data. Therefore, I was unable to use the job titles to define each officer. Second, it is possible that the number of officers included in this study is not large enough. Chaison (2006) discussed how unions (even locals) generally have at least a president, secretary-treasurer, and a vice president, although this may not be true of some very small unions. Because I expected unions to have at least these top three officers and all of my hypotheses required at least three to be conducted, I chose to focus my analysis on the top three officers versus the top four or five officers. Third, although these theories are embedded in the executive compensation literature, it is possible that the theories included are wrong or that other theories used in the compensation literature may provide better explanations for the pay of union officers. Future research should evaluate the ability of other theories, for example human capital theory (Becker 1975; Mincer 1974), to explain union officer pay. Last, although Hallock and Klein (2009) found evidence that the performance variables included in this analysis matter to the pay of union officers, it is possible that other performance measures also matter. For example, average total compensation for members (including pensions, benefits, etc.) might be a better measure of union member compensation than base salary. In addition, other factors such as number of strikes, policy outcomes, industry membership, etc., are clearly important to union members and may affect the pay of union officers. Unfortunately, I was unable to obtain such data. Researchers should explore additional measures of performance in models of union officers' pay in future studies.

Implications

First, it appears that a number of characteristics define how union presidents are paid: 1) pay is tied to performance, 2) pay spreads increase with level, and 3) pay increases with the management of larger executive teams. It is unclear however whether this pattern is good for organizations. Future studies should explore this further. Second, it is important for researchers to incorporate the number of vice presidents in studies on the determinants of CEO pay, as this is not typically a variable included in agency theory studies. As I explained, tournament theory appears to be a less likely explanation for top officer's pay in the union setting, therefore I believe the results found in this study are likely to be more pronounced in studies focused on other settings including for-profit organizations. Third, my findings illustrate the significance of methodology. Specifically, my analyses point to the significance of longitudinal studies since the coefficients from cross-sectional analyses can be misleading and biased. My results also suggest that the choice of the dependent variable is important, as I have shown that some regressions used in past studies may be misspecified.

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TABLE 1
Summary Statistics for Unions

	International	*Intermediate*	*Local*
Top Officer	155937	70350	28485
	(137386)	(175041)	(52458)
	[121883]	[63281]	[6532]
Second Officer	120215	45497	19933
	(91824)	(43791)	(32254)
	[104964]	[39074]	[3600]
Third Officer	104815	37353	15123
	(78166)	(39648)	(26998)
	[97719]	[24996]	[2230]
Members	115882	8401	960
	(365418)	(31374)	(4309)
	[14646]	[2420]	[265]
Estimated	44034	165743	34749
Average	(156160)	(1305609)	(330425)
Member Wage[a]	[14855]	[11667]	[21218]
Assets	39000	2588	626
(in thousands)	(82100)	(8837)	(3339)
	[7496]	[228]	[73]
Total Annual	18600	1795	422
Dues	(45500)	(5896)	(1790)
(in thousands)	[3387]	[323]	[82]
Number of officers	117	18	10
	(200)	(38)	(14)
	[48]	[9]	[7]
N	1065	9651	197181

Note: Standard deviation in parantheses. Median in brackets.
[a]Estimated average member wage is defined as W = (D/0.015) / M

TABLE 2A

Fixed-Effects Regression of the Pay-Performance Relationship,
Deprendent Variable: Ln(Gross Salary)

International Unions			
Variable	*Top Officer*	*Second Officer*	*Third Officer*
	(1)	(2)	(3)
Ln(membership)	.279***	.275***	.110
	(.087)	(.082)	(.136)
Ln(avg. member wage)	.066**	.113***	.074*
	(.026)	(.025)	(.041)
Ln(assets)	-.068	-.123**	-.059
	(.050)	(.047)	(.078)
Constant	9.168***	9.547***	10.319***
	(1.085)	(1.020)	(1.683)
Adj. R^2	.950	.959	.917
N	355	355	355

TABLE 2B

Intermediate Unions			
Variable	*Top Officer*	*Second Officer*	*Third Officer*
	(1)	(2)	(3)
Ln(membership)	.148***	.216***	.200***
	(.023)	(.024)	(.029)
Ln(avg. member wage)	.134***	.175***	.168***
	(.019)	(.019)	(.023)
Ln(assets)	-.004	-.008	-.043*
	(.018)	(.019)	(.022)
Constant	8.165***	6.737***	6.916***
	(.380)	(.397)	(.471)
Adj. R^2	.940	.949	.944
N	3217	3217	3217

TABLE 2C

Local Unions			
Variable	*Top Officer*	*Second Officer*	*Third Officer*
	(1)	(2)	(3)
Ln(membership)	.350***	.387***	.445***
	(.007)	(.008)	(.010)
Ln(avg. member wage)	.270***	.288***	.308***
	(.006)	(.006)	(.008)
Ln(assets)	-.034***	-.027***	-.022***
	(.004)	(.005)	(.006)
Constant	4.826***	3.817***	2.738***
	(.087)	(.098)	(.118)
Adj. R^2	.948	.939	.921
N	65727	65727	65727

Note: Standard errors are in parentheses
* p-value < .10
** p-value < .05
*** p-value < .01

TABLE 3
Test of Tournaments with Medians

International

	All years	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*
Top official	121883	108898	120156	114707	118970	127541	134096	125119	241336
Second official	104964	90133	102080	106578	102741	115920	125387	116296	169840
Third official	97719	81341	93535	96827	96959	102565	116972	110268	150430
Median of diff: 1st & 2nd	12987	11102	16864	11037	15970	11207	13450	12815	35594
	16%	14%	17%	12%	18%	16%	10%	15%	19%
Median of diff: 2nd & 3rd	7007	6753	7184	6992	6708	7827	9785	4389	16139
	9%	11%	10%	9%	8%	9%	8%	6%	9%
N	355	62	60	58	62	59	19	29	6

Intermediate

	All years	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*
Top official	63281	59443	60821	64491	65867	66649	61790	63574	55972
Second official	39074	34681	40988	42370	42890	43234	29519	31800	27305
Third official	24996	26071	27330	27804	29144	27576	15652	14210	10371
Median of diff: 1st & 2nd	8749	8073	7740	9597	10284	10431	7237	8306	6125
	33%	31%	33%	33%	34%	38%	33%	38%	24%
Median of diff: 2nd & 3rd	2336	2071	1938	2797	2569	2239	2164	2588	2735
	18%	17%	16%	19%	16%	18%	23%	22%	26%
N	3217	496	529	525	523	541	184	317	102

Local

	All years	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*
Top official	6532	6051	6625	6886	7183	7039	4820	6560	8048
Second official	3600	3343	3575	3716	3832	3891	2810	3618	3720
Third official	2230	2108	2192	2304	2400	2400	1737	2317	2183
Median of diff: 1st & 2nd	1840	1684	1817	1918	1937	1991	1362	1965	2064
	35%	34%	35%	35%	34%	33%	38%	37%	41%
Median of diff: 2nd & 3rd	767	731	736	778	806	805	631	820	806
	29%	29%	29%	28%	27%	28%	33%	30%	30%
N	65727	11141	11197	11081	10814	10477	3857	5950	1210

TABLE 4

Agency Theory or Tournament Theory: CEO Pay and Number of Officers

Panel A	*Dependent variable: Ln(Top Officer Gross Salary)*		
	International	*Intermediate*	*Local*
	(1)	(2)	(3)
Number of officers	.001*	.005***	.003***
	(.0007)	(.001)	(.0003)
ln(assets)	-.080	-.006	-.035***
	(.051)	(.018)	(.004)
ln(membership)	.255***	.135***	.345***
	(.088)	(.023)	(.007)
ln(avg. member wage)	.061**	.128***	.267***
	(.026)	(.019)	(.006)
Constant	9.486***	8.244***	4.860***
	(1.092)	(.379)	(.087)
Adj. R-squared	.951	.940	.948
N	355	3217	65727

Panel B	*Dependent variable: Ln(first officer gross salary) minus Ln(second officer gross salary)*		
	International	*Intermediate*	*Local*
	(1)	(2)	(3)
Number of officers	-.0001	.001	-.001***
	(.001)	(.001)	(.0003)
ln(assets)	.056	.004	-.006
	(.038)	(.019)	(.004)
ln(membership)	.006	-.070***	-.035***
	(.066)	(.024)	(.007)
ln(avg. member wage)	-.047**	-.042**	-.016***
	(.020)	(.019)	(.006)
Constant	-.404	1.446***	.993***
	(.821)	(.395)	(.086)
Adj. R-squared	.599	.753	.681
N	355	3217	65727

Panel C	*Dependent variable: Ln(Top Officer Gross Salary)*		
	International	*Intermediate*	*Local*
	(1)	(2)	(3)
Number of officers	.0003	.003***	.001***
	(.0005)	(.0009)	(.0003)
ln(gross salary second officer)	.747***	.461***	.509***
	(.046)	(.017)	(.003)
ln(assets)	.021	-.002	-.020***
	(.037)	(.016)	(.004)
ln(membership)	.069	.040***	.152***
	(.064)	(.021)	(.006)
ln(avg. member wage)	-.020	.049**	.123***
	(.019)	(.017)	(.005)
Year effects	yes	yes	yes
Org effects	yes	yes	yes
Constant	2.101***	5.107***	2.893***
	(.905)	(.351)	(.072)
Adj. R-squared	.975	.954	.965
N	355	3217	65727

Note: Standard errors are in parentheses
* p-value < .10
** p-value < .05
*** p-value < .01

APPENDIX 1
International Unions: Pay-for-Performance

	Dependent Variable is Ln(Gross Salary)								
	Top Officer			*Second Officer*			*Third Officer*		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Ln(membership)	.046	.049	.279***	.087***	.089***	.275***	.114***	.115***	.110
	(.030)	(.030)	(.087)	(.030)	(.030)	(.082)	(.036)	(.036)	(.136)
Ln(avg. member wage)	.104***	.108***	.066**	.108***	.111***	.113***	.096***	.098***	.074*
	(.021)	(.022)	(.026)	(.022)	(.022)	(.025)	(.025)	(.026)	(.041)
Ln(assets)	.338***	.337***	-.068	.329***	.329***	-.123**	.368***	.369***	-.059
	(.027)	(.028)	(.050)	(.027)	(.028)	(.047)	(.032)	(.033)	(.078)
Year effects	no	yes	yes	no	yes	yes	no	yes	yes
Org effects	no	no	yes	no	no	yes	no	no	yes
Constant	4.875***	4.865***	9.168***	4.329***	4.301***	9.547***	3.354***	3.282***	10.319***
	(.311)	(.360)	(1.085)	(.312)	(.361)	(1.020)	(.370)	(.429)	(1.683)
Adj. R^2	.605	.602	.950	.628	.625	.959	.610	.606	.917
N	355	355	355	355	355	355	355	355	355

Note: Standard errors are in parentheses
* p-value < .10
** p-value < .05
*** p-value < .01

APPENDIX 2
Intermediate Unions: Pay-for-Performance

	Dependent Variable is Ln(Gross Salary)								
	Top Officer			*Second Officer*			*Third Officer*		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Ln(membership)	.354***	.351***	.148***	.375***	.373***	.216***	.402***	.400***	.200***
	(.018)	(.018)	(.023)	(.018)	(.018)	(.024)	(.020)	(.020)	(.029)
Ln(avg. member wage)	.431***	.429***	.134***	.406***	.405***	.175***	.391***	.390***	.168***
	(.015)	(.015)	(.019)	(.016)	(.016)	(.019)	(.017)	(.017)	(.023)
Ln(assets)	.202***	.204***	-.004	.327***	.327***	-.008	.414***	.416***	-.043*
	(.014)	(.014)	(.018)	(.014)	(.014)	(.019)	(.016)	(.016)	(.022)
Year effects	no	yes	yes	no	yes	yes	no	yes	yes
Org effects	no	no	yes	no	no	yes	no	no	yes
Constant	1.222***	1.098***	8.165***	-.844***	-.998***	6.737***	-2.448***	-2.561***	6.916***
	(.154)	(.167)	(.380)	(.157)	(.171)	(.397)	(.174)	(.190)	(.471)
Adj. R^2	.594	.596	.940	.672	.673	.949	.684	.684	.944
N	3217	3217	3217	3217	3217	3217	3217	3217	3217

Note: Standard errors are in parentheses
* p-value < .10
** p-value < .05
*** p-value < .01

APPENDIX 3
Local Unions: Pay-for-Performance

	Dependent Variable is Ln(Gross Salary)								
	Top Officer			*Second Officer*			*Third Officer*		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Ln(membership)	.681***	.682***	.350***	.709***	.708***	.387***	.761***	.761***	.445***
	(.004)	(.004)	(.007)	(.004)	(.004)	(.008)	(.005)	(.005)	(.010)
Ln(avg. member wage)	.575***	.574***	.270***	.550***	.549***	.288***	.526***	.525***	.308***
	(.005)	(.005)	(.006)	(.005)	(.005)	(.006)	(.006)	(.006)	(.008)
Ln(assets)	.225***	.224***	-.034***	.249***	.249***	-.027***	.249***	.249***	-.022***
	(.003)	(.003)	(.004)	(.003)	(.003)	(.005)	(.004)	(.004)	(.006)
Year effects	no	yes	yes	no	yes	yes	no	yes	yes
Org effects	no	no	yes	no	no	yes	no	no	yes
Constant	-3.116***	-3.130***	4.826***	-3.820***	-3.862***	3.817***	-4.360***	-4.400***	2.738***
	(.047)	(.049)	(.087)	(.049)	(.051)	(.098)	(.053)	(.055)	(.118)
Adj. R^2	.698	.698	.948	.698	.698	.939	.683	.683	.921
N	65727	65727	65727	65727	65727	65727	65727	65727	65727

Note: Standard errors are in parentheses
* p-value < .10
** p-value < .05
*** p-value < .01

APPENDIX 4

Agency Theory or Tournament Theory: CEO Pay and Number of Officers

Panel A — *Dependent variable: Ln(Top Officer Gross Salary)*

	International			*Intermediate*				*Local*			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Number of officers	.002***	-.002***	-.002***	.001*	.011***	-.005***	-.005***	.005***	.029***	-.001***	-.010***	.003***
	(.0003)	(.0003)	(.0003)	(.0007)	(.001)	(.001)	(.0005)	(.001)	(.0004)	(.0003)	(.0003)	(.0003)
ln(assets)		.375***	.374***	-.080		.222***	.223***	-.006		.226***	.225***	-.035***
		(.027)	(.027)	(.051)		(.014)	(.014)	(.018)		(.003)	(.003)	(.004)
ln(membership)		.102***	.105***	.255***		.401***	.399***	.135***		.723***	.724***	.345***
		(.030)	(.030)	(.088)		(.018)	(.018)	(.023)		(.004)	(.004)	(.007)
ln(avg. member wage)		.126***	.129***	.061**		.453***	.451***	.128***		.586***	.585***	.267***
		(.021)	(.021)	(.026)		(.015)	(.015)	(.019)		(.005)	(.005)	(.006)
Year effects	no	no	yes	yes	no	no	yes	yes	no	no	yes	yes
Org effects	no	no	no	yes	no	no	no	yes	no	no	no	yes
Constant	11.274***	3.752***	3.717***	9.486***	10.195***	.504***	.417**	8.244***	8.805***	-3.374***	-3.383	4.860***
	(.070)	(.348)	(.388)	(1.092)	(.029)	(.166)	(.178)	(.379)	(.008)	(.047)	(.049)	(.087)
Adj. R-squared	.108	.642	.641	.951	.077	.607	.608	.940	.061	.704	.705	.948
N	355	355	355	355	3217	3217	3217	3217	65727	65727	65727	65727

Panel B — *Dependent variable: Ln(first officer gross salary) minus Ln(second officer gross salary)*

	International			*Intermediate*				*Local*			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Number of officers	-0.0002**	.0001	.0001	-.0001	-.003***	.002***	.002***	.001	-.004***	-.002***	-.002***	-.001***
	(.0001)	(.0001)	(.0001)	(.001)	(.0004)	(.0004)	(.0004)	(.001)	(.0002)	(.0002)	(.0002)	(.0003)
ln(assets)		.007	.007	.056		-.130***	-.129***	.004		-.023***	-.024***	-.006
		(.011)	(.012)	(.038)		(.010)	(.010)	(.019)		(.002)	(.002)	(.004)
ln(membership)		-.043***	-.042***	.006		-.034**	-.036***	-.070***		-.018***	-.017***	-.035***
		(.013)	(.013)	(.066)		(.014)	(.014)	(.024)		(0.003)	(.003)	(.007)
ln(avg. member wage)		-.004	-.004	-.047**		.018	.017	-.042**		.027***	.028***	-.016***
		(.009)	(.009)	(.020)		(.011)	(.011)	(.019)		(.004)	(.004)	(.006)
Year effects	no	no	yes	yes	no	no	yes	yes	no	no	yes	yes
Org effects	no	no	no	yes	no	no	no	yes	no	no	no	yes
Constant	.281***	.587***	.587***	-.404	.627***	2.269***	2.291***	1.446***	.568***	.649***	.679***	.993***
	(.019)	(.149)	(.168)	(.821)	(.015)	(.126)	(.135)	(.395)	(.003)	(.034)	(.036)	(.086)
Adj. R-squared	.011	.051	.037	.599	.018	.137	.138	.753	.006	.015	.015	.681
N	355	355	355	355	3217	3217	3217	3217	65727	65727	65727	65727

Panel C — *Dependent variable: Ln(Top Officer Gross Salary)*

	International			*Intermediate*				*Local*			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Number of officers	-.00005	-.0001	-.00009	.0003	.0002	-.0005	-.0005	.003***	.00005	-.004***	-.004***	.001***
	(.00009)	(.0001)	(.0001)	(.0005)	(.0003)	(.0004)	(.0004)	(.0009)	(.0002)	(.0002)	(.0002)	(.0003)
ln(gross salary second o	.9377***	.907***	.908***	.747***	.785***	.709***	.708***	.461***	.884***	.713***	.713***	.509***
	(.014)	(.021)	(.023)	(.046)	(.007)	(.012)	(.012)	(.017)	(.001)	(.002)	(.002)	(.003)
ln(assets)		.041***	.041***	.021		-.027***	-.026**	-.002		.048***	.047***	-.020***
		(.014)	(.014)	(.037)		(.010)	(.010)	(.016)		(.002)	(.002)	(.004)
ln(membership)		-.030**	-.029**	.069		.093***	.091***	.040***		.194***	.196***	.152***
		(.013)	(.013)	(.064)		(.014)	(.014)	(.021)		(.003)	(.003)	(.006)
ln(avg. member wage)		.008	.008	-.020		.145***	.144***	.049**		.188***	.188***	.123***
		(.009)	(.009)	(.019)		(.012)	(.012)	(.017)		(.004)	(.004)	(.005)
Year effects	no	no	yes	yes	no	no	yes	yes	no	no	yes	yes
Org effects	no	no	no	yes	no	no	no	yes	no	no	no	yes
Constant	.965***	.877***	.877***	2.101***	2.688***	1.755***	1.744***	5.107***	1.522***	-.505***	-.487***	2.893***
	(.155)	(.162)	(.178)	(.905)	(.071)	(.118)	(.126)	(.351)	(.012)	(.033)	(.034)	(.072)
Adj. R-squared	.935	.937	.936	.975	.798	.809	.809	.954	.856	.870	.870	.965
N	355	355	355	355	3217	3217	3217	3217	65727	65727	65727	65727

Note: Standard errors are in parentheses
* p-value < .10
** p-value < .05
*** p-value < .01