

EXECUTIVE COMPENSATION IN NONPROFITS, LABOR UNIONS,
AND FOR-PROFIT FIRMS

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ABSTRACT

This study examines the compensation of the top five managers of nonprofit, labor union, and for-profit organizations during the years of 2000-2005. Although there has been substantial work on the pay of executives in for-profit firms, less research has focused on the pay of managers in nonprofits and unions, and no study has compared pay across these three types of organizations. Specifically, this thesis compares several areas of executive compensation: the level of pay, the relationship between pay and performance (including firm size), and pay dispersion. In the end, although the level of pay in these sectors is different, there are a large number of similarities in how managers are compensated across sectors.

BIOGRAPHICAL SKETCH

Felice Klein is a grad student of Human Resource Studies with a minor in Labor Economics in the ILR School at Cornell University. Her current research interests include compensation (in the for-profit and nonprofit sector), human resource management, and labor economics. She earned her masters in ILR from Cornell University and her B.S.B.A. in Finance from the University of Florida.

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TABLE OF CONTENTS

Biographical sketch	iii
Acknowledgements	iv
Table of contents.....	v
List of figures	vi
List of tables	vii
Chapter 1: Introduction	1
Chapter 2: Data and Method	5
Chapter 3: “Determinants” of pay	19
Chapter 4: Compensation strategy and firm performance	32
Chapter 5: Concluding comments	47
Appendix	49
References	65

LIST OF FIGURES

Figure 1. Dispersion of pay within TMT.....	37
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LIST OF TABLES

Table 1a. Summary statistics, for-profit firms	6
Table 1b. Summary statistics, nonprofit organizations	11
Table 2. Executive compensation by organization size	13
Table 1c. Summary statistics, unions	17
Table 3a. “Determinants” of pay, for-profit firms	25
Table 3b. “Determinants” of pay, nonprofit organizations	28
Table 3c. “Determinants” of pay, unions	31
Table 4a. Compensation strategy and firm performance, for-profits	40
Table 4b. Compensation strategy and firm performance, nonprofits	43
Table 4c. Compensation strategy and firm performance, unions	45

CHAPTER 1

Introduction

A large literature exists on the pay of top managers in for-profit firms (Murphy, 1985; Murphy, 1999). However, with the exception of a few studies (i.e. Oster, 1998; Hallock, 2002; Hallock and Klein, 2009), little attention has been placed on the compensation of managers in nonprofits. This paper investigates and compares several areas commonly studied in the executive compensation literature in for-profits, nonprofits, and labor unions. It explores the level of pay, the relationship between pay and performance, and pay dispersion within top management teams. Panel data on for-profit organizations, nonprofit organizations, and unions over the years of 2000-2005 (with the exception of top officers in nonprofit organizations for which I have data from 2000 - 2003) is used to address these issues. Specifically, analysis is done on 291 union organization-years, 5850 for-profit organization-years, and 5765 nonprofit organization-years¹.

5.91% of all employees in the United States in 2007 were employed by nonprofits (Butler, 2009). This means that 1.64 million nonprofit organizations employed 8.7 million workers. Further, in 2007 the Bureau of Labor Statistics reported that 12.1% of workers in the United States were represented by a union. Clearly, both of these sectors cover a large number of employees in the U.S.; therefore these sectors represent a significant portion of the economy. This is the first study to compare compensation of top managers in nonprofit, for-profit, and union organizations.

¹ Part of the analysis on top paid nonprofit managers is done on “officers”. Another part done on employees is included in the appendix. The analysis of top employees in nonprofits uses data on 35,428 organization-years.

Although nonprofits are different from for-profits, it seems natural to study the compensation of executives in the nonprofit sector in much the same as has been done in the for-profit sector (Hallock, 2002). Hallock (2002) cites two reasons for this idea. First, in both types of organizations, managers are quite visible and are seen as the focal people. Second, scrutiny of nonprofits from the IRS and other groups is becoming increasingly similar to the scrutiny faced by for-profit firms. For these reasons, examining the pay of executives in nonprofit organizations, and the specific nonprofit organization of unions, in the same way as for-profit firms seems logical.

Compensating nonprofit employees competitively and appropriately is essential to attracting and retaining the most talented and qualified employees (Drucker, 1992; Pappas, 1995). Therefore, this paper seeks to address some of the fundamental compensation issues which are often examined in for-profit firms in nonprofit and union organizations, such as: the pay-performance relationship, the impact of pay dispersion and a high-wage policy (i.e. paying wages higher than the average wage of the relevant labor market) on firm performance, and the structure of pay within organizations. We know very little about managerial pay in nonprofits and unions, and how the pay of managers in these sectors compares to the pay of managers in for-profits.

To preview the results, I find that the level of managerial pay in these sectors is very different with managers in for-profits receiving the largest amount in compensation followed by officers of nonprofits. Pay of union officers appears to be the lowest. I also find that pay varies within and across organizations. Based on previous studies, I identify two performance variables in each sector to compare the pay-performance relationship across the three organizational forms. Even when controlling for firm size and organization fixed-effects, performance matters to the pay

of the top manager in both for-profits and unions. Specifically, market value and return of assets (ROA) have a positive and significant effect on the cash pay and total compensation of the CEO in for-profit firms. Membership and average member wage are positively and significantly correlated with the pay of the union president. For curious reasons, I find that program service expenses divided by total expenses has a negative effect on the pay of the top paid officer in nonprofits; however, I do find that organization size (measured as total assets) is positively related to the pay of the top officer of the nonprofit he / she leads.

In addition, I examine the dispersion of pay and level of pay of top management teams (TMTs) and its effect on firm performance. I find the level of pay dispersion in TMTs to be greatest when examining the total compensation then cash pay of managers in for-profit firms, followed by the total compensation then cash pay of officers in nonprofits. Dispersion of pay appears to be the lowest for officers of labor unions. Further, my results provide evidence that dispersion of pay in TMTs is related to organization performance differently in each sector. I find pay dispersion is not related to ROA but is negatively related to market value in for-profit firms. In nonprofits, dispersion in pay is negatively and significantly correlated with both measures performance (program service expense ratio and amount received in grants and support). Surprisingly, dispersion in TMT pay has a positive effect on membership in unions. On the other hand, I find that the level of pay of the TMT (defined as the total pay of the top five members of the TMT) generally has a positive and significant effect on the performance measures included in all three sectors which provides support for efficiency wage theories (discussed below). The only sector where I find increasing the overall pay of the TMT leads to lower performance is for the program service ratio (defined as program service expenses divided by total

expenses) for officers of nonprofits which I suspect is the result of total expenses increasing with the change in pay without a similar size increase in program service expenses. Although it is clear that each of these sectors are very different from one another and therefore the pay of managers varies, I find a number of similarities in how managers are compensated.

The rest of this paper is organized as follows. Section II provides a detailed description of the data for each organizational sector including summary statistics of the pay of the top five managers as well as performance variables used in the analysis. Section III examines the link between pay and performance using performance variables discussed in past studies. Studying the pay-performance relationship in nonprofits is particularly difficult because it isn't always clear what the goals of the organization are. Section IV examines how dispersion of pay within top management teams (TMT) and overall level of pay of managers in TMTs are related to firm performance. Section V offers concluding comments.

CHAPTER 2

Data and Method

The data for this paper come from three different sources. Below I describe each of these sources.

a. For-profit

The data on for-profit organizations come from Standard & Poor's EXECUCOMP database² for the years of 2000 to 2005. 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). In this analysis, I specifically focus on cash pay and total compensation of the top five managers, return on assets (ROA)³, market value⁴, and total assets. I delete any observations where cash pay, total compensation, or assets is negative, zero, or missing. Further, I delete all observations where market value or ROA are missing. Last I drop all observations where the number of managers reported is fewer than five. In the end, I am left with 5,850 observations of data for 1,838 unique firms.

The summary statistics of for-profit organizations over time are reported in table 1a. The average cash pay (salary plus bonus and "other" annual compensation) for this sample of CEOs is \$1,523,824 whereas the average total compensation (which

² Includes over 80 different compensation items on more than 12,500 executives in companies included in the S&P 500, S&P 400 MidCap and S&P SmallCap 600 indexes. Over 35 measures of company financial performance are taken from Compustat.

³ ROA is defined as net income divided by total net assets.

⁴ Market value is defined as the price per share of the specified security multiplied by the number of shares outstanding for the specified security.

Table 1a. For-profit. Top Five Highest Paid Employees. Summary Statistics

	All years	2000	2001	2002	2003	2004	2005
Cash pay ^a							
Top Manager	1523824 (1740011) [1040193]	1316263 (1667741) [875000]	1185788 (1312748) [816024]	1441730 (1272515) [1115157]	1421782 (1664196) [942300]	1707012 (1805323) [1212640]	1988133 (2217675) [1421326]
Second Manager	936535 (1127432) [638898]	873064 (1167807) [591667]	746359 (796602) [539175]	856509 (813200) [636964]	888670 (11111950) [591353]	1013708 (1087215) [720220]	1184760 (1468212) [811220]
Third Manager	747016 (844111) [531668]	688864 (917737) [465200]	613667 (716700) [437601]	670577 (613125) [520200]	709985 (808474) [498571]	819523 (844381) [595534]	928144 (993115) [680000]
Fourth Manager	644370 (722560) [476950]	597809 (848792) [419134]	523126 (507537) [388348]	562490 (440673) [456880]	617907 (708071) [444377]	712644 (685997) [536760]	796556 (896792) [586000]
Fifth Manager	557183 (598757) [413747]	516870 (685629) [360706]	451646 (414687) [338718]	481214 (368970) [395166]	528893 (545536) [387500]	623420 (633116) [462321]	691497 (738136) [521620]
Total Compensation							
Top Manager	4783676 (7548191) [2538690]	5684897 (11400000) [2234311]	4330607 (7134971) [2133814]	4103853 (5684201) [2331074]	4056530 (5401470) [2223052]	4823176 (6952387) [2868612]	5750205 (7522814) [3459924]
Second Manager	2499722 (3872497) [1385104]	3130787 (6310057) [1324007]	2211355 (3256832) [1181387]	2107225 (2780787) [1232777]	2204878 (2993842) [1255286]	2457258 (3101513) [1519336]	2870349 (3785469) [1746374]
Third Manager	1810395 (2528552) [1082861]	2143617 (3721031) [1015872]	1563281 (2157099) [929322]	1495091 (1780216) [970785]	1624285 (2132954) [971127]	1872446 (2272271) [1195312]	2091571 (2576886) [1360936]
Fourth Manager	1441201 (1968084) [875058]	1669208 (2941615) [810598]	1220963 (1644479) [752923]	1183456 (1288222) [807642]	1299778 (1600324) [790527]	1505230 (1721621) [986440]	1696778 (2121720) [1087218]
Fifth Manager	1107433 (1524098) [675946]	1195239 (2136938) [588018]	940646 (1393490) [552586]	918228 (961569) [612483]	1008103 (1260175) [612111]	1189217 (1408886) [774571]	1325378 (1653961) [876936]
ROA	4.816 (17.523) [4.42]	5.576 (8.176) [4.931]	3.110 (11.485) [3.409]	5.654 (7.972) [4.316]	3.803 (32.401) [3.596]	5.244 (6.375) [4.572]	6.063 (7.166) [5.598]
Market Value (in thousands)	7651000 (22900000) [1866000]	9158000 (28900000) [1836000]	5769000 (20000000) [1327000]	4407000 (10100000) [1407000]	7224000 (21600000) [1713000]	8556000 (25100000) [2198000]	9255000 (22500000) [2792000]
Assets (in thousands)	14200000 (69200000) [1900000]	11700000 (46800000) [1619000]	9668000 (49200000) [1468000]	9718000 (39900000) [1737000]	14500000 (66900000) [1885000]	16200000 (78800000) [2356000]	20300000 (98900000) [2457000]
N	5850	909	828	556	1417	1191	949

Source: Standard & Poor's EXECUCOMP database.

Note: Standard deviations in parantheses. Medians in brackets.

^aCash pay = base salary + bonus

includes salary, bonus, and other annual total compensation, in addition to total value of restricted stock granted, total value of stock options granted, and long-term incentive payouts) is \$4,783,676. The average compensation package for the second

manager is \$2,499,722, with average cash pay of \$936,535. The third manager earns on average \$1,810,395 in total compensation with \$747,016 strictly in base salary, bonus, and “other”. Whereas the average cash pay for the fourth and fifth manager is \$644,370 and \$557,183 respectively, with total compensation packages averaging \$1,441,201 and \$1,107,433 respectively. It is apparent by examining table 1a that cash pay represents a small part of the average total compensation received by for-profit executives each year. Clearly, a substantial portion of executive pay is represented by additional components to base cash pay⁵. Further, it is evident that the CEO makes substantially more in pay than managers below him / her. On average, as a manager moves from the second position in the hierarchy to the top position, the resulting increase in total compensation is 91.4%⁶. The average change in compensation from moving from the third to second position is 38.1%. Further, moving from the fourth to third position increases pay by 25.6%, and moving from the fifth to fourth position increases pay by 30.1%. Tournament theory argues that larger increases in wages should be expected as one ascends the organizational hierarchy as this leads to increased effort by employees at lower levels (Lazear and Rosen, 1981). Although the increase in average pay between the fifth and fourth level is slightly larger than the change between the fourth and third, the results seem to be consistent with tournament theory’s propositions⁷.

⁵ See Murphy (1985) and Barron and Waddell (2003) for further discussion on these additional components of total compensation in for-profit firms.

⁶ Main et al. (1993) using an earlier sample found for-profit managers moving from the second position to the top position enjoyed a pay increase of about 140%.

⁷ Similar results for the average pay increase are found when examining salary instead of total compensation.

The average for-profit firm in my data has assets of \$14.2 billion over this time. The median is much smaller (\$1.9 billion) since some for-profit firms are so large. The average ROA of for-profit firms included in this analysis is 4.816% and the average market value is \$7.651 billion.

b. Nonprofit

The data on nonprofit organizations comes from tax returns of 501c(3) tax-exempt organizations for the years of 2000 to 2005; specifically the sample included in this paper are organizations that file Form 990⁸. For an organization to be officially designated as a nonprofit, they 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, and 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). Contributions to 501c(3) nonprofits are tax deductible to the contributor.

The IRS data contain a common set of information for all charitable nonprofits. I focus on a subset of this information. For compensation measures, I focus on: 1) cash pay (defined as base salary plus bonus), and 2) total compensation (defined as the sum of base salary, bonus, contributions to employee benefits plans, expense account, and other allowances) for the top five officers, directors, trustees, and key employees⁹.

⁸ For more detailed discussion of the data and charitable nonprofits, see Hallock (2002).

⁹ A “key employee” is defined as any person having responsibilities or powers similar to those of officers, directors, or trustees. The term includes the chief management and administrative officials of

Compensation data are available on both the top paid officers of nonprofits and the top paid nonofficer / nondirector / nontrustee employees. Because officers are the natural comparison to top executives in for-profit firms, in this paper I specifically focus on the top officers of nonprofits. However I include the results of my investigation of the top paid employees of nonprofits in Appendix K - P. Based on Hallock (2002), I also include program expenses, total expenses, public direct support, public indirect support, and government grants to represent my performance measures of program expense ratio (calculated as program expenses divided by total expenses)¹⁰ and grants and support (which equals public direct support, public indirect support, and government grants)¹¹. Last, to control for firm size, I include total assets. I delete from my sample all observations where salary, assets, program expenses, or expenses are zero, negative, or missing. Further, I drop any observation where grants and support are less than zero or missing, and I delete any organizations with fewer than five salaries reported¹². This results in 5,765 observations of data which represents 2,727 unique organizations.

Table 1b considers the summary statistics for nonprofits¹³. Data are only available up to 2003 for officers; therefore analysis is conducted on officers' pay for

an organization but does not include the heads of separate departments or smaller units within an organization (IRS, 2004).

¹⁰ Program expense ratio represents the percentage of total expenses put towards programs for those in need (Hallock, 2004).

¹¹ Total in grants and support represents the total received in outside fundraising. See Hallock (2002) for discussion of program expense ratio and grants and support as appropriate measures of performance in nonprofits.

¹² Over ten percent of the nonprofits organizations have less than five officers. Therefore, by restricting my analysis to only organizations that have reported compensation for at least five officers, a large portion of observations are dropped from my sample.

¹³ Means, standard deviations (in parentheses), and medians (in brackets) for the top five employees are reported in Appendix K.

2000 - 2003. The average (nominal) cash pay of the top officer over time is \$293,198 (with a median of \$222,044). By including benefits and extra allowance, the average (nominal) total compensation for the top officer increases to \$340,855. It is clear by looking at table 1b, that cash pay and total compensation for each officer increases over time. Further, the increases in pay for each officer as they ascend the organizational hierarchy get larger with each promotion. For example, the average total compensation increase from moving from the third to second position is 21.0%, whereas moving from the second to top officer spot leads to an increase in pay of 54.8%. Ever-increasing pay is seen in all five levels of officers included in the data and within cash pay and total compensation measures. Therefore, this finding is consistent with a tournament scheme operating in nonprofits. However, note that the gradient seems to be much less steep in nonprofits than documented for for-profit above.

The average assets of nonprofits included in table 1b are \$322 million. The average amount of program expenses in nonprofits is \$143 million and the average total expenses are \$164 million; therefore the average ratio of program expense divided by total expenses is 0.872. Last, the average grants and support received by nonprofits in table 1c are \$26.9 million¹⁴.

It is clear by examining table 1b, in comparison to table 1a, that top officers of nonprofits make substantially less than top managers in for-profit organizations. Further, it is evident that nonprofits are much smaller, in terms of total assets, than for-profit firms. To examine why managers in for-profits make more than managers in

¹⁴ I focus on the total amount in grants and support, instead of grants and support (public and indirect) separately, because this is a more comprehensive measure of outside fundraising. Further, Hallock (2002) finds that even conditional on assets and controlling for organization, as outside fundraising increases, so does the pay of the top officer.

Table 1b. Nonprofit. Top Five Highest Paid Officers. Summary Statistics

	All years	2000	2001	2002	2003
Cash pay ^a					
Top Officer	293198 (271428) [222044]	266138 (262370) [201744]	279887 (242790) [215000]	292775 (251554) [223146]	327202 (318340) [245731]
Second Officer	194632 (151412) [151798]	175283 (131113) [137104]	188363 (146194) [148081]	195357 (145892) [153644]	214679 (172903) [166333]
Third Officer	160019 (120547) [128444]	144767 (104536) [117708]	154249 (115822) [123462]	160319 (119538) [127000]	176901 (134736) [140343]
Fourth Officer	138299 (105792) [113466]	125504 (91889) [103250]	133113 (99493) [109273]	138682 (104924) [113673]	152658 (120021) [122500]
Fifth Officer	120097 (94312) [98800]	108480 (80178) [91840]	116042 (87977) [95204]	120658 (95467) [98917]	132259 (106801) [107910]
Total Compensation					
Top Officer	340855 (344939) [253438]	310198 (380424) [230147]	322189 (296664) [244535]	339935 (317570) [257156]	383373 (383366) [279935]
Second Officer	220189 (176276) [171991]	195464 (148106) [153674]	211463 (164622) [167265]	221203 (172054) [171433]	246366 (205727) [189450]
Third Officer	181940 (154099) [144908]	161743 (118239) [133670]	173601 (133334) [139281]	183691 (175907) [144420]	203507 (168425) [159926]
Fourth Officer	157420 (124490) [127171]	141556 (107089) [114948]	150590 (114578) [121558]	158282 (124710) [128035]	175191 (142442) [138620]
Fifth Officer	137081 (115544) [111475]	121507 (91689) [101715]	131814 (103977) [107169]	138524 (124573) [111051]	152467 (129620) [122397]
Program expenses (in thousands)	143000 (470000) [45200]	119000 (235000) [41300]	141000 (458000) [43600]	138000 (484000) [44500]	169000 (584000) [52800]
Expenses (in thousands)	164000 (502000) [54900]	138000 (261000) [50100]	161000 (507000) [53200]	159000 (511000) [53000]	193000 (612000) [63200]
Grants and support (in thousands)	26900 (97500) [4193]	25300 (84500) [4437]	26100 (94700) [3885]	26000 (97800) [4000]	29900 (1080000) [4494]
Assets (in thousands)	322000 (1370000) [95400]	291000 (999000) [90100]	309000 (1030000) [90900]	303000 (1340000) [85900]	377000 (1840000) [115000]
N	5765	1141	1478	1639	1507

Source: Internal Revenue Service, Form 990.

Note: Standard deviation in parantheses. Median in brackets.

^aCash pay = base salary + bonus

nonprofits, Hallock (2004) sorted both for-profit and nonprofit organizations by their assets and broke them into ten groups (each group containing an equal number of organizations). By comparing nonprofit organizations with for-profit organizations of similar size¹⁵, he found the salary and bonus of managers in both sectors to be similar (this does not account for non-salary compensation such as stock options). Therefore, he suggested that one reason managers in for-profits are paid more than nonprofits is due to differences in firm size.

Table 2 reports the results of a similar investigation to the one described above. Following Hallock (2004), I sorted for-profit, nonprofit, and union organizations in 2003 into ten deciles by their assets (i.e. median assets). This allowed me to compare the pay of the top five managers in organizations of similar size. The smallest sized organizations are summarized in the top row (decile 1), whereas the largest sized organizations are summarized in the bottom row (decile 10). Median base salary, cash pay, and total compensation are reported for for-profit managers, whereas total compensation is reported for nonprofit officers and base salary is reported for union officers.

By examining table 2, one can see that the median assets in for-profit organizations are much larger than nonprofit and union organizations. However, it seems reasonable to compare the pay of managers in organizations of similar size (Hallock, 2004). The closest comparison of for-profit and nonprofit organizations seems to be decile 2 of for-profit with decile 9 of nonprofit. By looking at these two deciles, the total compensation of nonprofit managers is fairly close to the base salary of for-profit managers; however, once bonus and nonsalary compensation are added to

¹⁵ Hallock (2004) used the same dataset, although for different years, that I use here.

the pay of for-profit managers, the difference continues to be substantial. By comparing decile 9 in unions¹⁶ to decile 4 in nonprofits, within similar sized organizations, unions officers appear to make more than nonprofit officers. However, by comparing decile 10 of unions to decile 1 of for-profits, the base salary of for-profit manager is over double the base salary of union officers. Although similar to Hallock (2004), I find that the differential between the pay of managers of for-profits and nonprofits / unions lessens by examining managers within similar sized organizations, once bonus and nonsalary compensation (such as stock options) are added to the pay of managers in for-profits, the differential is nearly double to quadruple the pay of managers of the other two sectors. Compared to Hallock (2004) who examined data from 1998, this may suggest that the bonus and nonsalary compensation of for-profit managers has increased over the years and further these additional components of pay may have increased more for for-profit managers than they have for nonprofit officers.

Table 2. Median executive compensation by median organization size.

Decile	For-profit			Nonprofit		Union		
	Assets	Base salary	Cash pay	Total compensation	Assets	Total compensation	Assets	Salary
1	167000000	320000	467751	859662	7287602	73115	244419	30860
2	360000000	393654	575828	1294429	26000000	107882	871728	66879
3	593000000	459302	648558	1727068	52600000	124830	2203790	98874
4	901000000	474169	742373	1854276	72000000	138012	3908545	82731
5	1510000000	561738	971809	1972331	97700000	136399	7533892	111345
6	2330000000	625208	989039	2648125	137000000	173311	12400000	110558
7	3730000000	674608	1298191	3032388	191000000	205596	22900000	150772
8	6900000000	690577	1322054	3067186	281000000	231016	45900000	117561
9	14700000000	761340	1656256	4541345	481000000	296042	72500000	209421
10	44200000000	914943	2355561	7509676	1210000000	390585	244000000	148937

Sources: Internal Revenue Service, Form 990, 2003; Standard & Poor's EXECUCOMP database, 2003; Department of Labor. LM-2, 2003.

Other theoretical reasons offered for the differences in pay between for-profit and nonprofit employees are: labor donations hypothesis, “screening”, compensating

¹⁶ Below I provide further description on the pay of officers of unions.

differentials, and ability (Hallock, 2004)¹⁷. The labor donations hypothesis argues that workers of nonprofits give part of their wages to the cause they are working for, therefore they may be willing to trade lower wages for higher social benefits (Preston, 1989). “Screening”, first discussed by Hansmann (1980), assumes that there are two types of workers, one type is greedy and the other values quality of service they provide in addition to money. For nonprofits to survive they must pay people less; therefore only those workers that want to provide quality service and are willing to restrain their desires for more pay will want to work for a nonprofit. Compensating differentials suggest that there may be amenities associated with nonprofit jobs, such as flexible hours, job security, more pleasant work environments, etc., that are not present in for-profit jobs (Burbridge, 1994). Last, Hallock (2000) suggests that the difference in wages between sectors may be related to “ability”. Perhaps nonprofit employees’ skills are more useful elsewhere or they are less able than for-profit employees. When estimating the relationship between wages and nonprofit status if the variable of ability is omitted, the estimated effect will be biased and researchers will assign too much of the wage difference to the nonprofit variable. For all these reasons, nonprofit employees are expected to earn lower wages than similar workers in the for-profit sector.

Further, due to differences in how nonprofit organizations operate, nonprofits operate under the non-distribution constraint which limits them from distributing excess earnings to those in control of the organization, some nonprofits have avoided paying their top managers based on financial performance of the organization¹⁸

¹⁷ See Hallock (2000, 2002) for further discussion of the conceptual reasons for differences in pay between employees of for-profit and nonprofits organizations.

¹⁸ But this does not mean that nonprofits are barred from paying based on performance.

(Hallock, 2002). In addition, nonprofits have avoided pay for performance because paying executives in nonprofits excessively can threaten public trust (Frumkin & Keating, 2001). As expected from the reasons discussed above, and similar to past studies (e.g. Preston, 1989; Hallock, 2002), I find a compensation differential between managers of for-profit and nonprofit organizations.

c. Union

The data for international unions come from LM-2, LM-3, and LM-4 reports for the years 2000 – 2005. These reports are filed by all labor organizations subject to the Labor-Management Reporting and Disclosure Act (LMRDA), the Civil Service Reform Act (CSRA), and the Foreign Service Act (FSA); 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. These forms contain a host of interesting information for each union, including data such as liabilities, loans, mortgages, dividends, rents, gifts and grants, investments, members of the unions, total dues paid, and compensation of officers; however in this paper, I focus on the following: gross salary of officers, total assets, total dues, and membership. I delete all observations that are missing, negative, or zero for the above included measures. Further, I drop all organizations that have fewer than five officers reported. Due to this selection criterion, I am left with a sample of larger union organizations since some small unions have fewer than five officers. Based on the United States Department of Labor Office of Labor-Management Standards' classification, I categorize labor unions as “International”, “Intermediate” or “Local”, and focus this analysis strictly on

international unions since these are union organizations closest in size and may also be closest in structure to for-profit organizations. In all, I study 291 observations of data for 65 unique organizations¹⁹.

Means, standard deviations (in parentheses), and medians (in brackets) for all the variables included in my analysis are reported in table 1c. It is clear from the table that the average (nominal) compensation for the top officer over time in these data is \$161,777, with a median of \$128,651. The average compensation for the second officer is \$128,648, with a median of \$110,360, and the average compensation for the third officer is \$112,811, with a median of \$101,979. The average compensation for the fourth and fifth officer are \$101,431 (with median of \$94,627) and \$94,890 (with median of \$89,867) respectively. By considering at table 1c, it is clear that in general the salary of each officer increases from 2000 to 2005. Further, the increase in pay with each promotion gets larger as one moves up the organization. The increase in pay from moving from the fifth to the fourth position is 6.9%, from moving from the fourth to third position is 11.2%, from moving from the third to second position is 14%, and from moving from the second to top position is 25.8%. The ever-increasing pay with level in unions is consistent with tournament theory. However, these increases in pay from moving up the hierarchy are smaller than the pay increases I find for managers in for-profit firms and for officers of nonprofit organizations.

¹⁹ In related work, Kevin Hallock and I study (Hallock and Klein, 2009) 15,942 international, intermediate, and local unions for a total of 75,717 observations.

Table 1c. International Unions. Top Five Highest Paid Officers. Summary Statistics

	All years	2000	2001	2002	2003	2004	2005
Salary							
Top Officer	161777 (113201) [128651]	141341 (94343) [111774]	154324 (111661) [122010]	156887 (106902) [128173]	169980 (113993) [135613]	170497 (124095) [129830]	212277 (144889) [142717]
Second Officer	128648 (89313) [110360]	112567 (72297) [94805]	120955 (86382) [105155]	129852 (91459) [110277]	133443 (90671) [111345]	137665 (99823) [120013]	157892 (101946) [125480]
Third Officer	112811 (75840) [101979]	99464 (64351) [91018]	105754 (75967) [97107]	113575 (74766) [103845]	119638 (79315) [105685]	120139 (85338) [103000]	131982 (71417) [118899]
Fourth Officer	101431 (68059) [94627]	89120 (60231) [80713]	95687 (64908) [88990]	104346 (69728) [101043]	105504 (70252) [97500]	105344 (74763) [99196]	125548 (67912) [114252]
Fifth Officer	94890 (64387) [89867]	82900 (55931) [78066]	88568 (61493) [86642]	97804 (66320) [94461]	101172 (68341) [95517]	98830 (69981) [98095]	113261 (62789) [106185]
Members	123609 (366664) [32214]	121460 (357435) [22921]	137335 (381589) [31345]	133223 (385073) [36513]	77773 (137989) [34093]	116981 (376250) [16368]	214278 (625966) [34684]
Estimated Average Member Wage ^a	41255 (141065) [14584]	38388 (139368) [12143]	41777 (155780) [13540]	44357 (154027) [14637]	44115 (144780) [15917]	42770 (132407) [17295]	26509 (35713) [16942]
Assets (in thousands)	40500 (77900) [10300]	35500 (67100) [9230]	38500 (69700) [10500]	41900 (75600) [10600]	40300 (79100) [9108]	42600 (84200) [8183]	53000 (11100) [12100]
Total Annual Dues (in thousands)	19800 (45800) [4162]	17400 (41200) [2795]	20300 (45500) [3973]	21200 (47700) [5149]	16200 (33200) [4548]	20400 (47900) [3919]	30600 (72100) [8473]
N	291	56	57	52	53	55	18

Source: Department of Labor, LM-2.

Note: Standard deviation in parantheses. Median in brackets.

^aEstimated average member wage is defined as $W = (D/0.015) / M$

The average international union in this study has 123,609 members with a median of 32,214. This large difference between the mean and median number of members is due to the fact that some of the international unions are so large. Average assets are \$40.5 million and average total dues are \$19.8 million. Average union members wage is an estimate created by membership and total dues²⁰. Specifically, this estimate is created as follows:

²⁰ This estimate of average member wage is based on Hallock and Klein (2009).

$$W = (D / 0.015) / M, \quad (1)$$

where D = total annual dues of the union, M is the total union membership, and I assume that 1.5% of the union member's pay is contributed to the labor union as dues (Raisian, 1983). Using equation (1), the average member of an international labor union during this time earned \$41,255.

By comparing international unions (table 1c) with nonprofit organizations (table 1b) and for-profit firms (table 1a), it is clear that union officers are paid the least of the organizations examined in this paper. Further, assets are substantially smaller in unions than the other two sectors. It seems likely that many of the same reasons discussed above for differences between pay of for-profit and nonprofit workers pertains to the specific nonprofit sector of labor unions. Specifically, the conceptual reasons discussed above seem likely to apply to the nature of work of officers in unions (i.e. labor donations, "screening", compensating wage differentials, and "ability"). As well, unions are much smaller in terms of assets than for-profits and nonprofits. Therefore, firm size may be another reason that officers of international unions make less than managers in the other sectors. Future research should further explore these ideas.

CHAPTER 3

“Determinants” of pay

i. Theory and past research

The structure of pay within organizations is typically described by agency theory (see Holmstrom, 1979). Principals (owners) try to motivate agents (workers / executives) to act in the interest of the organization by designing compensation systems to link the agent’s pay to measures of performance the principal can observe. The argument for the link between executive and organizational performance is clear: because executives are in charge of the success of the organization, part of their pay should be contingent on how well organization performs (Jensen and Murphy, 1990).

Most of the work aimed at the alignment of principals and agents has been conducted in for-profit organizations. However, researchers have begun to investigate pay in nonprofit organizations (Hallock, 2002), and in unions (French, 1992; Hallock and Klein, 2009).

A substantial literature exists on the determinants of pay for executives in the for-profit sector and research on the relationship between performance and pay is extensive (Murphy, 1999). Lambert et al. (1993) examined the pay-performance link in for-profit organizations using the measures of ROA and shareholder return to represent firm performance. They found both measures were positively associated with the compensation level of the top executive team. Jensen and Murphy (1990) also investigated CEO pay and measures of corporate performance and found that pay for performance for executives was what they viewed as small (\$3.25 per \$1,000 change in shareholder wealth). Although many studies on the “determinants” of executive pay use absolute measures like the ones described above, it has been

suggested that relative measures of performance provide better incentives because they insulate the worker from common uncertainty²¹. Antle and Smith (1986) and Gibbons and Murphy (1990) examined the compensation of CEOs by examining a firm's rate of return on common stock compared to their industry and/or market and found that relative performance evaluation is used in compensation decisions affecting CEOs. Last, Murphy (1985) studied executive compensation data obtained from the corporate proxy statements of publicly held corporations for the years 1964-1981 to examine the pay-performance relationship. He found corporate performance, as measured by rate of return realized by shareholders, was strongly and positively related to managerial pay; further, growth of firm sales was also found to be strongly related to executive compensation. The above studies appear to suggest that there is a relationship between pay and performance in the for-profit sector.

Performance in the nonprofit sector is much more difficult to measure; however, researchers have begun to examine compensation of top managers in nonprofits. Hallock (2002) examined the link between measures of performance and managerial pay in nonprofits. He found that firm size, defined as the log of total assets, was strongly related to pay. In addition, organizations that spent higher fractions of their total expenses on actual program service and organizations with higher levels of grants paid their top managers more, although this was not true when looking within each organization by controlling for organization fixed-effects. Last, he found a positive relationship between the combination of government grants and direct and indirect support from the public and the total compensation of the top officer, even conditional on assets and with controls for industry and organization.

²¹ For a variety of reasons, such as the costs of obtaining performance data for peers and the incentive it creates to collude with other companies (Murphy, 1999), practitioners seem opposed to this form of compensation.

Finally, a number of studies have investigated the link between union officer pay and union characteristics at the international level. All of these (except the study done by Hallock and Klein, 2009) strictly used cross-sectional data. French, Hayashi and Gray (1983) demonstrated that there is a relationship between union head’s compensation in 1978 and measures of union financial strength, job complexity (measured with the variables: number of locals, functional specialization of administration, industrial diversity of membership, and geographical dispersion of membership), and tenure in the job. Sandver and Heneman (1980) studied the top three highest paid officers in the 100 largest national unions during the years of 1962, 1967 and 1973 and found “ability to pay” (e.g. dues and total assets) and job complexities variables accounted for significant portions of the variance in compensation. Last, Hallock and Klein (2009) examined the determinants of pay for presidents in international, intermediate, and local unions 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 presidents of all three levels of unions, even after controlling for organization fixed-effects and organization size. Further, the elasticity of pay with respect to membership in unions was found to be very similar to the elasticity of pay with respect to employees in for-profit firms.

ii. Empirical specifications and results

Empirical specifications for the determinants of pay in for-profit, nonprofit, and union organizations are presented below. Results are reported in tables 2a – 2d.

a. For-profit

The empirical model for the determinants of CEO pay is:

$$\ln P_{it} = \beta_1 R_{it} + \beta_2 \ln M_{it} + \beta_3 \ln A_{it} + \alpha_i + \varepsilon_{it} \quad (2)$$

where P is the pay (cash pay or total compensation) of the CEO of the for-profit firm, R is the ROA of the for-profit firm, M is the market value of the for-profit firm, A is the total assets of the for-profit firm, and $(\alpha_i + \varepsilon_{it})$ is the composite error term containing possible permanent effects. The subscripts i and t represent organizations and time, respectively. By looking at the R^2 in the OLS specifications below, it is apparent that variation in measured organization characteristics do not fully explain the variation in pay of the CEO. Therefore in some models I include organization-fixed effects. If one assumes that sources of endogeneity arise through the permanent component of the error term, α_i , and not the transitory component, ε_{it} , then models with organization fixed-effects will yield consistent estimates for the parameters. This is because fixed effects represent all factors affecting the variable of interest that do not change over time and allows me to specifically address how changes in performance affect changes in pay within organizations. For these reasons, it is important to include organization-fixed effects in models of executive compensation.

Table 2a examines the basic pay-performance relationships in for-profit firms. Two measures of economic performance used in other studies are considered²²: ROA and market value. In addition, due to the overwhelming evidence that the size of firm matters to managerial pay (Rosen, 1992), total assets are also considered²³. Panel A examines the determinants of cash pay; whereas panel B focuses on total compensation.

Consider table 3a, panel A. Column (1) reports the results of the regression of the log of cash pay for the CEO on ROA. The point estimate on ROA is 0.005 and is

²² Tosi et al. (2000) conducted a meta-analysis on CEO pay studies and found 30 different performance measures have been used to predict CEO compensation. ROA and market value are two of these performance variables.

²³ Assets are highly correlated with market value (see Appendix B). Therefore, this could be used as alternative but it does not have a material effect on the results.

significant. This means increasing ROA by 10% is correlated with an increase in cash pay of \$2,535.95, evaluated at the mean (i.e. moving ROA from 4.8% to 5.3%). In column (2), I report the results of the regression of the log of salary on the log of firm market value and find the coefficient is 0.315 and significant; therefore a 10% increase in market value is related to a 3.15% increase in CEO cash pay. Column (3) examines the log of assets and again I find the estimate is positive and significant, with the estimated effect of 0.275. Cash pay of for-profit CEOs increases by 2.75% for a 10% increase in assets. Column (4) regresses the log of cash pay on ROA, the log of market value, and the log of assets and estimates significant parameters for all variables with effects of 0.004, 0.168, and 0.156 respectively. Column (5) controls for year and I find that all three independent variables are still positive and significant. The $R^2 = 0.360$ which suggests that a large portion of the variation in CEO salary is not explained by variation in the included independent variables. Therefore, in column (6), I include organization fixed-effects to control for the permanent components of the error term that may be confounding the results and find that ROA and the log of market value are still positive and significant. These results suggest that when a firm's ROA and market value increase, so does the salary of the CEO of the firm. Specifically, within a firm, as ROA increases by 10 percentage points, the cash pay of the CEO increases by 0.08%, and within a firm as the market value increases by 10%, the cash pay of the CEO increases by 2.62%.

Panel B provides a similar analysis as above; however, examines the determinants of CEO's total compensation. Similar to above, columns (1) – (3) report the results of the regression of the log of CEO total compensation on each independent variable: ROA, the log of market value, and the log of assets. I find positive and significant coefficients for each covariate. It is interesting to note that all the coefficients are larger (some extraordinarily larger) in panel B than panel A. These

extra components to cash pay are specifically designed to motivate executives to act in the interest of the organization by linking their pay to performance measures that owners can observe (Murphy, 1999), therefore it makes sense to find performance makes a larger impact on CEO's total compensation compared to its effect on a CEO's cash pay. In column (4), panel B, when regressing the $\ln(\text{total compensation})$ for CEOs on ROA, $\ln(\text{market value})$, and $\ln(\text{assets})$, I find ROA and market value are significant with estimated effects of 0.002 and 0.461. The coefficient for assets is not significant in this model. I speculate that this is due to assets and market value being highly correlated (correlation = 0.5526) and may suggest that market value matters more to the compensation of CEOs in the cross-section. Column (5) controls for year, and again I find ROA and log of market value are positive and significant. The $R^2 = 0.445$ which suggests that a larger portion of the variation in total compensation is explained by the included independent variables compared to the variation explained in CEO salary ($R^2 = 0.204$). This is expected since market value and non-salary forms of compensation are so highly linked. Last, in column (6), I control for firm fixed-effects and find that ROA and the log of market value are positive and significant with estimated coefficient of 0.004 for ROA and 0.518 for log of market value. Therefore, as ROA and market value increase within a firm, so does the total compensation of the CEO.

To summarize, it appears that changes in ROA make more of an impact to CEO's cash pay, whereas changes in market value clearly matter more to a CEO's total compensation (as seen by comparing coefficients in column (6)). In general, I find that as the ROA and market value of a for-profit firm increases, so does the pay (cash pay and total compensation) of the CEO; both performance variables matter to increasing for-profit CEO's pay.

Table 3a. For-profit. CEO. "Determinants" of pay

Panel A	Dependent variable: ln(cash pay)					
	(1)	(2)	(3)	(4)	(5)	(6)
ROA	.005*** (.001)			.004*** (.001)	.004*** (.001)	.008** (.001)
ln(market value)		.315*** (.006)		.168*** (.010)	.162*** (.010)	.262*** (.025)
ln(assets)			.275*** (.005)	.156*** (.009)	.154*** (.009)	.042 (.036)
Year effects	no	no	no	no	yes	yes
Org effects	no	no	no	no	no	yes
Constant	13.842*** (.011)	9.268*** (.091)	7.949*** (.118)	8.051*** (.115)	8.052*** (.114)	9.267*** (.706)
Adj. R ²	.011	.307	.301	.342	.360	.662
N	5850	5850	5850	5850	5850	5850

Panel B	Dependent variable: ln(total compensation)					
	(1)	(2)	(3)	(4)	(5)	(6)
ROA	.005*** (.001)			.002*** (.001)	.002*** (.001)	.004*** (.002)
ln(market value)		.468*** (.007)		.461*** (.012)	.459*** (.012)	.518*** (.030)
ln(assets)			.335*** (.007)	.006 (.010)	.006 (.010)	-.037 (.042)
Year effects	no	no	no	no	yes	yes
Org effects	no	no	no	no	no	yes
Constant	14.761*** (.014)	7.956*** (.101)	9.883*** (.100)	7.965*** (.102)	8.002*** (.104)	7.868*** (.584)
Adj. R ²	.007	.442	.292	.442	.445	.700
N	5850	5850	5850	5850	5850	5850

Source: Standard & Poor's EXECUCOMP

* p-value < .10

** p-value < .05

*** p-value < .01

b. Non-profit

The empirical model for the pay-performance relationship of the top nonprofit officer includes a number of variables discussed in previous studies²⁴:

²⁴ For previous research incorporating similar variables, see Hallock (2002).

$$\ln P_{it} = \beta_1 S_{it} + \beta_2 \ln G_{it} + \beta_3 \ln A_{it} + \alpha_i + \varepsilon_{it} \quad (3)$$

where P is the pay (cash pay or total compensation) of the top officer of the nonprofit organization, S is the program service expense ratio (program service expense / total expense) of the nonprofit, G is the total amount in grants and support received by the nonprofit²⁵, A is the total assets of the nonprofit, and $(\alpha_i + \varepsilon_{it})$ is the composite error term containing possible permanent effects. The subscripts i and t represent organizations and time, respectively.

It is clear that there are additional covariates relevant to pay of nonprofit managers (see R^2 in OLS specifications below). Therefore, for reasons stated above, in some models I include organization fixed-effects.

Table 3b examines the determinants of pay for the top paid officer of nonprofit organizations. Similar to the analysis above, panel A studies cash pay whereas panel B studies total compensation. Column (1) reports the results of the regression of the log of cash pay on the log of grants and support. The coefficient is 0.061 and significant, which means that a 10% increase in grants and support is related to 0.61% increase in cash pay for top officers of nonprofit organizations. In column (2), I report the results of the regression of the log of cash pay on the program expense ratio. The estimated effect is 0.534 and significant. This means that a 10% increase in program expenses divided by total expenses is related to an increase in cash pay of \$10,559, evaluated at the mean (i.e. program expense ratio of 0.872). Column (3) displays the results of the model with the log of assets. The coefficient is 0.305 and significant, which suggests a 10% increase in assets is correlated with a 3.05% increase in cash pay. Column (4) examines all three independent variables simultaneously. In the cross-section, $\ln(\text{assets})$ continues to be significant with an estimated effect of 0.307;

²⁵ As explained above, I focus on the combination of grants and support, instead of grants and support (public and indirect) separately, because this is a more comprehensive measure of outside fundraising.

whereas the coefficient on $\ln(\text{grants and support})$ and program expense ratio are not statistically significantly different than zero. In column (5) I control for year and find similar results to column (4). Last, in column (6), I also control for organization fixed effects and find that assets has a positive effect on the cash pay of the top officer, whereas program expense ratio has a negative effect on cash pay. Specifically, within nonprofits, as the program ratio increases by 10 percentage points, the cash pay of the officer decreases by 4%. However, within nonprofits, as assets increase by 10%, the top officers' cash pay increases by .43%.

Panel B of table 3b reports the same models as panel A, however I examine the determinants of total compensation for the top officer of nonprofits. For each model, I find the sign and direction of the point estimate to be similar to panel A. However, like was the case for for-profit companies, the adjusted R^2 in panel B are higher than the adjusted R^2 in panel A. This suggests that variation in grants and support, total assets, and the program expense ratio explain more variation in the total compensation of the top nonprofit officer than they do in the cash pay of the top officer. In column (6) I add a control for organization and find assets is positive and significant and the program expense ratio is negative and significant, similar to the determinants of top officer's cash pay in panel A. The results of column (6) in panel A and panel B suggest that as total assets within a nonprofit organization increase, so does the pay of the top officer. However, for curious reasons²⁶, I again find the higher the program expense ratio within a nonprofit, the lower the pay of the top officer²⁷.

²⁶ One possible explanation for the negative coefficient on the program expense ratio is due to the competing use of funds.

²⁷ Hallock (2002), using firm fixed-effects, also found program expense ratio was negatively related to the total compensation of the top officer, although his results were not significant.

Table 3b. Nonprofit. Highest Paid Officer. "Determinants" of pay

Panel A	Dependent variable: ln(cash pay)					
	(1)	(2)	(3)	(4)	(5)	(6)
ln(grants and support)	.061*** (.005)			-.004 (.005)	-.004 (.005)	.005 (.008)
program expense ratio		.534*** (.107)		-.035 (.092)	-.044 (.092)	-.400*** (.133)
ln(assets)			.305*** (.007)	.307*** (.007)	.306*** (.007)	.043** (.020)
Year effects	no	no	no	no	yes	yes
Org effects	no	no	no	no	no	yes
Constant	11.375*** (.075)	11.845*** (.089)	6.692*** (.123)	6.736*** (.139)	6.669*** (.140)	11.638*** (.410)
Adj. R ²	.026	.004	.265	.264	.267	.856
N	5765	5765	5765	5765	5765	5765
Panel B	Dependent variable: ln(total compensation)					
	(1)	(2)	(3)	(4)	(5)	(6)
ln(grants and support)	.066*** (.005)			-.002 (.005)	-.002 (.005)	.009 (.008)
program expense ratio		.518*** (.109)		-.081 (.093)	-.091 (.093)	-.485*** (.128)
ln(assets)			.320*** (.007)	.322*** (.007)	.322*** (.007)	.046** (.019)
Year effects	no	no	no	no	yes	yes
Org effects	no	no	no	no	no	yes
Constant	11.434*** (.076)	11.988*** (.091)	6.535*** (.124)	6.599*** (.140)	6.523*** (.141)	11.714*** (.392)
Adj. R ²	.029	.004	.282	.282	.285	.872
N	5765	5765	5765	5765	5765	5765

Source: Internal Revenue Service, Form 990.

* p-value < .10

** p-value < .05

*** p-value < .01

The results above suggest that increases in total assets matter to the pay of top officers in nonprofits. Further, increasing the program expense ratio appears to have a negative effect on the pay of the top officer of a nonprofit.

c. Union

The empirical model for the determinants of union president's salary includes a number of measures reported in previous studies²⁸:

$$\ln P_{it} = \beta_1 \ln M_{it} + \beta_2 \ln W_{it} + \beta_3 \ln A_{it} + \alpha_i + \varepsilon_{it} \quad (4)$$

where P is the gross salary of the top officer of the labor union, M is the total membership in the labor union, W is the average wage of union members²⁹, A is the total assets of the labor unions, and $(\alpha_i + \varepsilon_{it})$ is the composite error term containing possible permanent effects. The subscripts i and t represent organizations and time, respectively. Again, there are additional variables relevant to pay of union presidents that are not included in my specification (see R^2 in OLS specifications below). To account for the possibility that other characteristics not included are confounding the analysis, in some models I include organization-fixed effects.

Table 3c examines the determinants of salary for union presidents. The dependent variable here is the logarithm of gross salary. Column (1) regresses union president salary on the log of membership. The point estimate on membership is 0.214 and significant. In column (2) I examine average member wage and find the coefficient is significant with an estimated effect of 0.072. Column (3) replicates the process used in column (1) and (2) but with the independent variable of total assets. Again, I find the estimate is 0.302 and significant. It is interesting to note that across sectors, the elasticity of pay (i.e. total compensation for the top manager in nonprofits and for-profits and salary for the top officer in unions) with respect to total assets is

²⁸ See Hallock and Klein (2009) for a description of membership and average member wage as appropriate performance measures in unions.

²⁹ Average total compensation for members (including pensions, benefits, etc.) might be a better measure of compensation, but I was unable to find information on these additional components to pay.

very similar³⁰. Specifically, it ranges from 0.302 in unions to 0.335 in for-profits, with an elasticity of 0.320 in nonprofits. The positive effect on firm size is not surprising, as it is expected that larger firms employ better-qualified and better-paid managers (Murphy, 1999). The consistency of this relation however is surprising, but has also been noted in past studies (see Rosen, 1992 and Murphy, 1999 for further discussion on this)³¹. Column (4) regresses salary on all three independent variables. In this regression, I find the log of average member wage and the log of assets are positive and significant; specifically the coefficients are 0.092 and 0.277 respectively. In column (5) I control for year effects and find similar results to column (4). The $R^2 = 0.524$ suggests that a significant portion of the variation in union president salary is explained by the independent variables examined here. Further, variation in the union performance variables explain a lot more of the variation in union president pay than the performance variables examined in nonprofit and for-profit organizations above. Finally, in column (6) I control for organization fixed-effects and find the log of membership and the log of average member wage are both positive and significant. Therefore, within a union as membership and average wage increase, the pay of the president of the union should also increase. Specifically, within a union, for a 10% increase in membership the salary of the president increases by 2.76%. Further, within a union, for a 10% increase in average member wage, the salary of the president increases by 0.55%.

³⁰ Hallock and Klein (2009) found that the elasticity of pay with respect to firm size is similar in unions as to for-profit firms. The evidence here further documents that this elasticity is also similar in nonprofit organizations.

³¹ A large literature on the size-wage premium exists, see Oi and Idson (1999).

Table 3c. International unions. Union President. "Determinants" of pay

	(1)	(2)	(3)	(4)	(5)	(6)
ln(mem)	.214*** (.022)			.038 (.029)	.039 (.029)	.276*** (.080)
ln(avg. wage estimate)		.072*** (.025)		.092*** (.020)	.095*** (.020)	.055** (.022)
ln(assets)			.302*** (.018)	.277*** (.028)	.275*** (.028)	-.037 (.048)
Year effects	no	no	no	no	yes	yes
Org effects	no	no	no	no	no	yes
Constant	9.578*** (.224)	11.020*** (.241)	6.917*** (.289)	6.088*** (.330)	6.322*** (.365)	8.980*** (1.009)
Adj. R ²	.242	.024	.489	.523	.524	.948
N	291	291	291	291	291	291

Source: Department of Labor, LM-2.

* p-value < .10

** p-value < .05

*** p-value < .01

These results suggest that in the cross section, average member wage and total assets matter to the pay of union presidents. However, by including organization fixed-effects, I find that within unions, membership and average member wage are important determinants of union president pay. As seen above and in past research (i.e. Hallock and Klein, 2009), pay and performance are tightly linked in labor unions.

CHAPTER 4

Compensation strategy and firm performance

Past research has shown that compensation systems are associated with organizational performance (Leonard, 1990; Gerhart and Milkovich, 1990). Two elements used to characterize a pay system are the level of pay and structure of pay; both of which are considered essential to understanding the organizational performance implications of any company's compensation strategy (Brown, Sturman, and Simmering, 2003). This section examines top management team (TMT) wage dispersion and position in the wage hierarchy as two parts of an organization's executive compensation strategy.

i. Theory

a. High pay policy

Here I examine the impact of having a high wage policy on firm performance. At least four different models have been proposed to explain the profitability of paying employees above the market (Akerlof, 1984; Akerlof and Yellen, 1986; Chen and Edin, 2002). The first model, the shirking model, argues that increasing wages raises workers' effort level and decreases shirking because the cost of job loss gets larger with the rise in wages. The second model, the adverse selection model, suggests that firms paying higher wages are able to attract higher quality job applicants. In the third model, the labor turnover model, higher wages reduce quit rates and therefore reduce turnover costs. The fourth model, the loyalty model, argues that feeling of loyalty increase with higher wages, and these feeling of loyalty may have a direct effect on productivity (Krueger and Summers, 1988). The above arguments suggest why firms may actually find it profitable to pay wages above the market.

A number of empirical tests have found support for efficiency wage theory (DeBrock, Hendricks, and Koenker, 2004). Abowd, Kramarz, and Margolis (1999) studied a longitudinal sample of over one million workers from over five hundred thousand firms in France to estimate both person and firm components of wage determination. These authors identified high-wage workers and high-wage firms, both defined by compensation higher than would be expected based on observable characteristics and found that even when controlling for worker effects, firms that paid high wages were both more productive and more profitable. Further, they found that firms that hire high-wage workers are more productive but not more profitable which may suggest that it is not beneficial for firms to have large differences in pay among workers. As described above, Main et al. (1993) examined the effects of pay dispersion in for-profit firms over a five-year period. Specifically, they regressed firm performance on a set of control variables, including the average executive team salary, and executive team dispersion. In addition to finding that pay dispersion is positively related to performance, they found firms with higher average pay for their top management teams also had higher performance. DeBrock et al. (2004) examined how pay dispersion and the level of pay affects performance of major league baseball teams. They found that teams with high-wage strategies were associated with better won-lost performance and higher attendance figures even when controlling for measures of team quality (i.e. measure of the quality of hitters and measure of the quality of the pitching and defense on each team). Previous studies suggest that performance can be improved by paying workers higher than the market.

b. Pay dispersion versus pay compression

Two competing models have been proposed to explain the effects of pay dispersion on firm performance: tournament theory and equity theory (Main, O'Reilly, and Wade, 1993). Tournament theory, developed by Lazear and Rosen (1981), offers

an explanation for the large disparity in pay between the CEO and executives below him / her. This theory argues that the compensation of the top executive in a corporation may far exceed their marginal product yet be economically efficient. This is because the extraordinary large prize awarded to the top executive acts as an incentive for employees below the top level to accept a salary lower than their own expected marginal product and acts as an incentive for employees to work hard in order to move up the organizational hierarchy.

As stated by Main et al. (1993): “One message offered by this theory is that, in order to provide adequate incentives, it may be necessary to engineer extremely large salary differences among the top executive ranks of a corporation” (page 607). Put simply, large pay differences increase competition; competition encourages higher levels of effort, which leads to higher levels of output (Lazear, 1989). Further, in addition to increased effort, Bishop (1987) outlines two other benefits that dispersion in pay provides: 1) they attract higher quality workers, and 2) they reduce turnover of top employees for better jobs. These two additional benefits increase the human capital accumulation in the workforce which ultimately are expected to affect firm performance (Kepes, Delery, and Gupta, 2009).

In contrast, notions of equity theory suggest that pay compression is desirable because it promotes collaboration and harmonious social relations between workers (Pfeffer and Langton, 1993). Lazear (1989) argues that the reason pay equity is more efficient is that the compression of wages suppresses unwanted uncooperative behavior and this is especially important when workers are able to affect each other’s output. Further, as is proposed by tournament theory, promotion and compensation in organizations is based on relative performance which means employees move up by performing better than their peers. Because relative performance is based not only on one’s own success but also a rival’s failures, pay dispersion may encourage sabotage

among peers. This may be particularly problematic at the top management team level because the nature of the work of executives requires a large degree of collaboration and interdependence (Hambrick and Mason, 1984; Lazear, 1989).

As discussed above, the literature cites conflicting theoretical reasons for the effects of pay dispersion on performance. That is, tournament theory argues large gaps are beneficial, whereas equity theory argues that large differences are detrimental. Further, researchers have investigated pay dispersion in a wide variety of settings and empirical results in these studies are also mixed (Kepes, Delery, and Gupta, 2009). Some researchers have found pay disparities are positively related to performance (Ehrenberg and Bognanno, 1990; Becker and Huselid, 1992; Main, O'Reilly, and Wade, 1993) whereas other researchers have reported that wage dispersion is negatively related to performance (Cowherd and Levine, 1992; Pfeffer and Langton, 1993; DeBrock et al., 2004). Below, I briefly review some of the studies that address how pay dispersion affects performance at the organizational level. I then go on to consider these cases across the three sectors that are the focus of this work.

Main et al. (1993) examined how pay dispersion affects ROA and stock market return in over two hundred publicly held corporations over the years of 1980-1984. They found wage dispersion was positively and significantly associated with ROA and was positive but not significant for stock market return. They conclude that these results suggest that greater variance in top management team pay is positively related to firm performance. Conyon, Peck, and Sadler (2001) examined a sample of 500 executives from 100 large U.K. firms during 1997 - 1998 and did not find that pay dispersion in executive teams had a robust positive or negative effect on firm performance. Shaw et al. (2002) examined pay dispersion with production workers in the concrete pipe industry. These authors hypothesized that dispersion is likely to be ineffective when used in the context of high work interdependence due to the need for

cohesiveness and collaboration. They found moderately strong support for this hypothesis with all three performance measures (i.e. labor hours per ton, lost-time accidents, and perceptual performance) in the study and concluded that the findings of their study lent support to the argument that dispersion can foster competition and lack of collaboration. DeBrock et al. (2004) considered two aspects of a firm's compensation strategy, pay dispersion and position in the wage hierarchy, in major league baseball teams in the United States. These authors found that controlling for level of salary, teams with higher salary dispersion performed more poorly on the field. Finally, Carpenter and Sanders (2004) examined the relationship among TMT compensation, a firm's degree of internationalization, and subsequent levels of market and accounting performance. They found that the pay gap, measured as the natural logarithm of the difference between the total compensation of the CEO and the average total compensation of the next four highest paid members of the TMT, was negatively related to the ratio of market to book value. As can be seen, the results from studies investigating the effects of pay dispersion on organizational-level outcomes are mixed. This may be, in part, that the previous studies are focused on various kinds (i.e. production workers, executives, athletes, etc.) of organizations. This could be evidence that as far as the theories in this section, it may not be the case that "one size fits all".

A graph of the average dispersion in each sector over time is provided in Figure 1. It is clear that the most dispersion in pay among members of a TMT is found in the total compensation of managers in for-profit firms, followed by the cash pay of managers in for-profit firms. Next, I find the total compensation of nonprofit

officers then cash pay of nonprofit officers. Last, salaries of union officers have the lowest dispersion of top management teams examined here³².

Organization	2000	2001	2002	2003	2004	2005
Union	0.275	0.282	0.259	0.265	0.292	0.296
For-profit: cash pay	0.457	0.441	0.493	0.446	0.466	0.49
For-profit: total pay	0.574	0.572	0.582	0.546	0.562	0.599
Nonprofit: cash pay	0.417	0.416	0.415	0.422		
Nonprofit: total pay	0.43	0.428	0.429	0.435		

^acoefficient of variation = (standard deviation) / mean

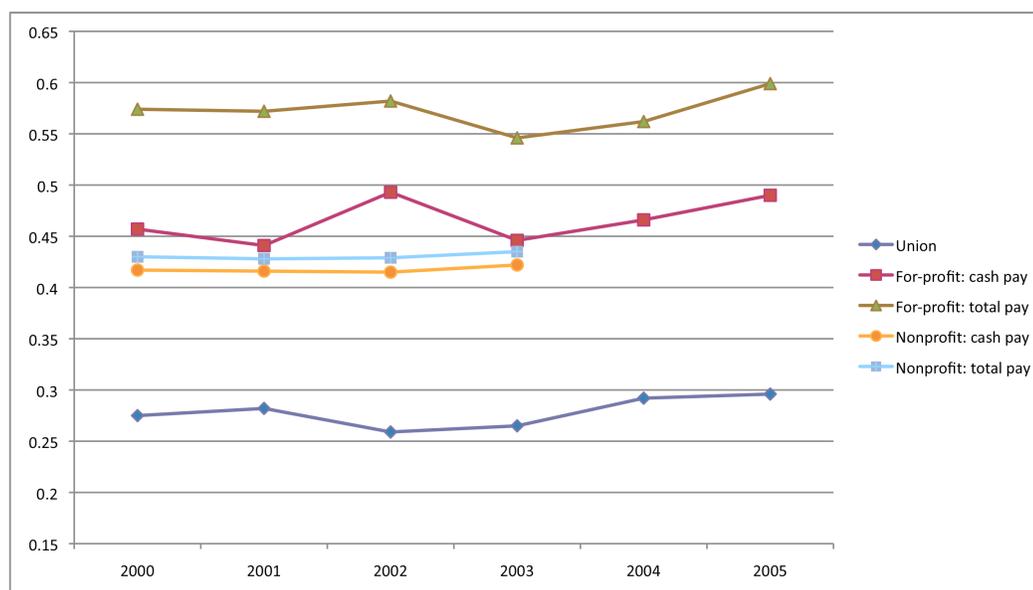


Figure 1. Dispersion of Pay within Top Management Team. Coefficient of variation^a

ii. Empirical specification and results

Based on discussion to this point, the empirical model is:

$$P_{it} = \beta_1 D_{it} + \beta_2 \ln T_{it} + \beta_3 \ln A_{it} + \alpha_i + \varepsilon_{it} \quad (5)$$

where P is performance of the organization³³, D is dispersion of pay of the top management team³⁴, T is the total pay of the top management team³⁵, A is the total

³² I actually find the lowest dispersion of pay within a TMT in the salary and total compensation of nonprofit employees. The dispersion in both measures of pay are about 0.191 in 2000 and have decreased to about 0.177 in 2005.

³³ Each performance measure is based on past studies; see section III above for further discussion.

assets of the organization, and $(\alpha_i + \varepsilon_{it})$ is the composite error term containing possible permanent effects. The subscripts i and t represent organizations and time, respectively. Again, as above, to control for additional variables that may be confounding the analysis, in some models I include organization effects.

Tables 4a-4c report the results from the regressions of firm performance on pay dispersion (coefficient of variation), the total pay of the executive team (the log of total salary / total compensation of the TMT), and firm size (the log of total assets). Top management teams were defined to include the top five highest paid executives / officers in each sector, an approach used by Main et al. (1993), Henderson and Fredrickson (2001), and Carpenter and Sanders (2004). Following past literature³⁶, I operationalize pay dispersion as the coefficient of variation (defined as the standard deviation divided by the mean). After reviewing a number of different measures of pay inequality, Allison (1978) concluded that coefficient of variation was generally the most preferable. I also calculate the Herfindahl-Hirshmann index (herf)³⁷ as a measure of pay dispersion (calculated as the summation of the squared values of each worker i 's share of wages, $\text{herf} = \sum_i (x_i / (x_1 + x_2 + x_3 + x_4 + x_5))^2$). In general, the signs and significance were similar for these two methods of computing wage

³⁴ For nonprofits and for-profits (tables 3a – 3c), the results are generally not significantly influenced by the measure of compensation used to calculate the coefficient of variation; therefore for sake of parsimony, I report only the results where dispersion is calculated with total compensation. Analyses with cash pay for these sectors are reported in Appendix G - I. For unions, the coefficient of variation is calculated with salary.

³⁵ For nonprofits and for-profits, I use the summation of total compensation of the TMT (defined as the top five highest paid employees / officers); I find using salary instead of total compensation does not significantly affect the results (results with salary are reported in Appendix G - I). For unions, I use the summation of base salary of the TMT (defined as the top five highest paid officers).

³⁶ Previous studies using coefficient of variation to represent pay dispersion include Pfeffer and Langton (1993), Shaw, Gupta, and Delery (2002), and Main, O'Reilly, and Wade (1993).

³⁷ For an example of a study employing the herf to represent income inequality, see DeBrock et al. (2004).

dispersion³⁸. Below I discuss the results from the regressions with the inclusion of the coefficient of variation, but report the results of the analyses with the herf measure in Appendix H - J.

Total pay of the TMT is calculated as the logarithm of the summation of salary for the top five highest paid officers in international unions, and calculated as the logarithm of the summation of total compensation for the top five highest paid managers in for-profit and nonprofit organizations. The coefficient of variation is calculated with salary in the union sector and calculated with total compensation in the nonprofit and for-profit sector. In all sectors, firm size is measured as the log of total assets.

a. For-profit

Table 4a presents the results for the regression of firm performance on pay dispersion, total TMT pay, and firm size. Performance is defined as market value in columns (1) – (5) and as ROA in columns (6) – (10).

Column (1) reports the results of the regression of the log of market value on the coefficient of variation of TMT pay. The estimate is significant with a coefficient of 0.540. This implies that a 10% increase in the coefficient of variation evaluated at the mean, i.e. moving from 0.5694 to 0.6263, is related to an increase in market value of \$163,395.90. In column (2), I report the results of the regression of the log of market value on the pay dispersion measure and the log of the total pay of the TMT. I find both coefficients are significant, with an estimated effect for the coefficient of variation of -1.099 and the estimated effect for the total TMT pay of 1.286. This

³⁸ However, I find a few differences in results when herf is used to represent dispersion instead of the coefficient of variation. For example: for nonprofit officers, I find dispersion has a negative and significant effect on both measures of firm performance with the coefficient of variation in all models, but I find dispersion with the herf does not have a significant effect on the program expense ratio in the cross section once I control for total pay of the TMT (see Appendix J, lower panel, columns (2) – (4)).

means that when controlling for the total pay of the TMT, a 10 percentage point increase in the coefficient of variation is correlated with 10.99% decrease in market value. Further, when controlling for dispersion of pay in the TMT, a 10% increase in the total pay of the TMT is related to a 12.86% increase in market value. In column (3), I add a measure of firm size and find all three independent variables are significant. Specifically, the coefficient on the pay dispersion measure is -0.447, the coefficient on the log of total TMT pay is 0.671, and the coefficient on the log of assets is 0.497. In column (4), I control for year effects and find the significance and direction of each variable are the same as column (3). The adjusted $R^2 = 0.758$ which indicates that quite a large portion of the variation in market value is explained by variation in the included covariates. Last, in column (5), I control for organization fixed-effects. I find that within for-profit firms, as firm assets and total pay of the TMT increase, so does the market value of a firm. Further, within for-profit firms, as the amount of pay dispersion between members of the TMT gets larger, the market value of the firm goes down.

Table 4a. For-profit. Regression of Organization Performance on Total Compensation Dispersion and Total Compensation for the TMT

	Dependent variable: ln(market value)					Dependent variable: ROA				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
dispersion ^a	.540*** (.071)	-1.099*** (.051)	-.447*** (.039)	-.437*** (.039)	-.132*** (.025)	3.021*** (.836)	1.297 (.899)	.040 (.925)	.041 (.925)	-.577 (.511)
ln(pay for entire TMT)		1.286*** (.015)	.671*** (.014)	.659*** (.014)	.253*** (.012)		1.352*** (.264)	2.537*** (.339)	2.439*** (.341)	1.528*** (.243)
ln(assets)			.497*** (.007)	.497*** (.007)	.579*** (.020)			-.957*** (.172)	-.957*** (.172)	-.049 (.405)
Year effects	no	no	no	yes	yes	no	no	no	yes	yes
Org effects	no	no	no	no	yes	no	no	no	no	yes
Constant	14.271*** (.045)	-5.103*** (.228)	-3.044*** (.173)	-2.957*** (.174)	2.362*** (.320)	3.096*** (.528)	-17.277*** (4.016)	-21.263*** (4.070)	-21.321*** (4.108)	-17.344*** (6.569)
Adj. R ²	.010	.561	.754	.758	.960	.002	.006	.011	.013	.878
N	5850	5850	5850	5850	5850	5850	5850	5850	5850	5850

Source: Standard & Poor's EXECUCOMP

* p-value < .10

** p-value < .05

*** p-value < .01

^a Coefficient of variation

Columns (6) – (10) are similar to the analysis done above but the dependent variable is ROA. In column (6), I find that pay dispersion and ROA are significantly correlated with an estimated effect of 3.021. Once I control for total pay of the TMT (column (7)), it appears that pay dispersion does not affect ROA; however total pay of the TMT is significantly and positively correlated to ROA. In column (8), I add a control for firm size and find it is negatively correlated with ROA. This result makes sense since assets is the denominator in ROA; increases in assets lowers ROA. Column (9) adds a control for year. The adjusted $R^2 = 0.013$, therefore it appears that variation in the independent variables examined here do a better job of explaining the variation in market value than they do for ROA. In column (10) I include organization fixed-effects and find that total pay of the TMT is positive and significant. This suggests that within firms, increases in total compensation of the TMT matters to increasing ROA.

To summarize, increases in total compensation level of a TMT matters to the performance of a for-profit firm, as efficiency wage theories suggest. However, similar to past studies, the results of the effects of dispersion are mixed. I find it has no effect on a firm's ROA but has a negative effect on a firm's market value in the fixed effects models. Finally, changes in assets appear to only affect market value of a for-profit firm, but does not affect a firm's ROA.

b. Nonprofits

As discussed above (section II), a number of theoretical reasons have been offered in the literature to explain the differences in wages between for-profit and nonprofit employees (i.e. the labor donations hypothesis, “screening”, and compensation differentials). Specifically, these theories address the idea that managers of nonprofits are motivated by factors beyond higher pay, and therefore

increases in pay may not be as strong as an incentive in nonprofits as has been theorized in for-profit firms. The results of the regressions of performance (program service expense ratio and grants and support) on pay dispersion, total level of pay of the TMT, and firm size for nonprofits are presented in tables 3b. Columns (1) – (5) in each table define performance as program service expense divided by total expense, whereas columns (6) – (10) define performance as the log of grants and support.

In column (1) I report the results of the regression of the program service expense ratio on the coefficient of variation of the total compensation of the top management team. The estimated effect is -0.014 and significant. This means that a 10% increase in the coefficient of variation evaluated at the mean, i.e. coefficient of variation of 0.4301, is correlated with a decrease in the program expense ratio of 0.006. In column (2), I add $\ln(\text{total pay of the TMT})$ and find that the coefficient on the coefficient of variation is -0.010 and significant, whereas the coefficient on total TMT pay is 0.009 and significant. Column (3) adds a control for firm size. The coefficient of variation remains significant with a negative estimated effect of -0.009, whereas $\ln(\text{assets})$ is significant with a positive estimated effect of 0.010. Column (4) adds a control for year and the results are similar to column (3). The adjusted $R^2 = 0.019$ which suggests that the independent variables included explain very little of the variation in the program service expense ratio. Last, to control for omitted variables that may be confounding the analysis, I add a control for organization fixed-effects in column (5). The results here suggest that within organizations, as the coefficient of variation and total level of pay of officers in the TMT gets larger, the ratio of program expenses to total expense gets smaller. One explanation for the negative coefficient on the total pay of the TMT is that obviously the total expenses increase when the compensation of officers increases; however, within a nonprofit, program expenses may not increase in the same order of magnitude as the increase in compensation.

Therefore the ratio of program expenses to total expenses goes down with the increase in pay to officers.

Table 4b. Nonprofit. Officers. Regression of Organization Performance on Total Compensation Dispersion and Total Compensation for the TMT

	Dependent variable: program service expense ratio					Dependent variable: ln(grants and support)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
dispersion ^a	-.014*** (.004)	-.010** (.004)	-.009** (.004)	-.009** (.004)	-.014*** (.005)	-1.434*** (.091)	-1.165*** (.091)	-1.120*** (.088)	-1.119*** (.088)	-.133* (.078)
ln(pay for entire TMT)		.009*** (.002)	-.001 (.002)	-.001 (.002)	-.007** (.003)		.508*** (.034)	.078** (.039)	.080** (.039)	.113*** (.050)
ln(assets)			.010*** (.001)	.010*** (.001)	-.004 (.003)			.456*** (.023)	.456*** (.023)	-.111*** (.044)
Year effects	no	no	no	yes	yes	no	no	no	yes	yes
Org effects	no	no	no	no	yes	no	no	no	no	yes
Constant	.833 (.002)	.713*** (.023)	.657*** (.024)	.655*** (.024)	.991*** (.061)	15.537*** (.050)	8.531*** (.469)	5.963*** (.472)	6.002*** (.474)	15.465*** (1.013)
Adj. R ²	.002	.006	.019	.019	.840	.041	.077	.135	.135	.902
N	5765	5765	5765	5765	5765	5765	5765	5765	5765	5765

Source: Internal Revenue Service, Form 990.

* p-value < .10

** p-value < .05

*** p-value < .01

^a Coefficient of variation

In columns (6) – (10), I define performance as the log of grants and support. Here I find dispersion pay among the top five officers is negatively related to performance, even conditional on assets and even when controlling for year and organization in column (10). Further, the total pay of the top five officers is positively and significantly related to performance (i.e. grants and support) in all models. Last, ln(assets) is positively and significantly related to ln(grants and support) in the cross-section, however I find assets is negatively related to grants and support when controlling for organization fixed effects in column (10). The results in column (10) suggest that within organizations, as the total pay of the TMT increases, so does the amount received in grants and support. However, within nonprofits, as the dispersion in pay of the TMT increases and the assets of the organization increases, the amount received in grants and support decreases. The negative estimate on assets suggests, for

curious reasons, that as nonprofits grow in size, the amount they receive in funding from the government and the public decreases.

To summarize, increases in pay dispersion among officers of nonprofit TMTs has a negative effect on performance. Further, within organizations, higher levels of pay for the TMT generally leads to higher amounts in grants and support but a lower ratio of program expenses to total expenses. Last, increases in assets within nonprofits leads to lower amounts in grants and support but has no effect on the program service expense ratio.

c. Unions

Unions are known for their consensus ideology (Kochan, Katz, and McKersie, 1994), therefore it seems likely that dispersion of pay within TMT would be most detrimental to the success of these organizations as compared to for-profit and nonprofits. Results of this analysis, in addition to how level of pay of the top five officers affects performance, are presented in Table 4c.

In column (1), I find that dispersion in salary is negatively related to membership with an estimated effect of -3.788. This means that increasing the coefficient of variation by 10% is correlated with a decrease in membership of 1890 members when evaluated at the mean (i.e. moving from a coefficient of variation of 0.2763 to 0.3039). This negative effect on dispersion holds even when controlling for total salary of the top five officers and assets (columns (3) and (4)). In column (2), I find that the total salary of the top five officers of a union is positively related to membership, however, once I control for firm size in column (3), the coefficient on the total pay is not significant. Column (4) includes a control for year. The $R^2 = 0.564$ which suggests that a large portion of the variation in total membership is explained by the included independent variables. To control for other factors not included that may be confounding the analysis, in column (5) I control for each union with

organization fixed-effects. It appears that within unions, as dispersion of salary, total pay of the TMT, and assets increase, so does the size of a union's membership.

Table 4c. International unions. Regression of Organization Performance on Salary Dispersion and Total Salary for the TMT

	Dependent variable: ln(membership)					Dependent variable: ln(average member wage)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
dispersion ^a	-3.788*** (.430)	-2.368*** (.402)	-1.485*** (.350)	-1.481*** (.353)	.273** (.138)	1.042** (.478)	1.641*** (.505)	1.326*** (.514)	1.344*** (.516)	-.080 (.508)
ln(pay for entire TMT)		1.043*** (.108)	.047 (.124)	.043 (.132)	.162*** (.060)		.440*** (.136)	.795*** (.191)	.821*** (.193)	.512** (.221)
ln(assets)			.644*** (.060)	.645*** (.061)	.090** (.041)			-.230*** (.088)	-.238*** (.089)	.405*** (.150)
Year effects	no	no	no	yes	yes	no	no	no	yes	yes
Org effects	no	no	no	no	yes	no	no	no	no	yes
Constant	10.900*** (.164)	-3.044** (1.452)	-.520 (1.251)	-.409 (1.342)	6.263*** (1.012)		3.109* (1.824)	2.208 (1.838)	1.485 (1.960)	-3.651 (3.724)
Adj. R ²	.209	.400	.570	.564	.993	.013	.044	.063	.061	.898
N	291	291	291	291	291	291	291	291	291	291

Source: Department of Labor, LM-2.

* p-value < .10

** p-value < .05

*** p-value < .01

^a Coefficient of variation

In column (6) – (10), I examine the same independent variables as above, but seek to address how these variables affect average member wage. Even when controlling for firm size, it appears that in the cross-section, dispersion of pay and total TMT pay are positively related to average member wage (column (8)). In column (10), I include organization fixed-effects and find that the log of total pay of the TMT and log of assets is positively correlated with the log of average member wage. This suggests that within unions, as the total pay of the top five officers and the total assets increase, so does the average wage of union members.

These results suggest that within unions, total salary of the top five officers and assets matter to performance³⁹. The significance of the coefficient on the total salary

³⁹ In table 3c, the fixed effects results (columns 5 and 10) are not influenced by the inclusion of total assets as a right hand side variable. That is, if I rerun the regression of either performance variable (the

of the top five officers provides support for efficiency wage theories in unions. Further, the significance of assets may suggest that as organizations grow in size, they may become more powerful and therefore are in a better position to negotiate work rules and wages for it's members. In addition, I find that salary dispersion has a positive effect on membership size of a union even when controlling for total assets and the organization. This is an unexpected result that appears to counter the consensus nature of unions. However, this finding may suggest that as unions begin to structure themselves more like for-profit organizations, which as seen in figure 1 have higher pay dispersion within TMTs, they may be better able to grow in terms of membership.

log of membership or the log of average member wages) on the coefficient of variation and the total pay of the top five officers, I get similar results.

CHAPTER 5

Concluding comments

Nonprofit organizations are very different from for-profit firms; however authors have begun to argue that in order to be successful, nonprofits should pay their workers what the market pays them (Drucker, 1992; Pappas, 1995). Although a large literature exists on the compensation of executives in for-profit firms, very little research has focused on the compensation of top managers in nonprofits and unions. In this paper, I investigate some of the issues typically examined in the for-profit executive compensation literature in for-profits, nonprofits, and unions.

Among the findings⁴⁰ are that the level of managerial pay in these sectors is very different with pay of managers in for-profits substantially greater than managers in the other two sectors. Of the three sectors explored here, on average, international union officers are paid the least.

I find that performance matters to the pay of the top manager in for-profits and unions, even when controlling for firm size and organization fixed-effects. Specifically, market value and return of assets (ROA) have a positive and significant effect on the cash pay and total compensation of the CEO in for-profit firms. Membership and average member wage are positively and significantly correlated with the pay of the union president. Further, I find that when firm size increases in nonprofits, so does the pay of the top officer; however, the increase in program expenses divided by total expenses is related a decrease in the pay of the organization's top officer. Last, in the cross-section, I find the elasticity of pay with respect to firm size (i.e. total assets) is very similar across all three sectors.

⁴⁰ Results of the regressions with firm fixed-effects are summarized in appendix A.

I also examine how dispersion of pay and level of pay of top management teams affects firm performance. Pay dispersion in TMTs is greatest when examining the total compensation of managers in for-profit firms, whereas the lowest pay dispersion exists in TMTs of unions. Further, my results indicate that dispersion of pay affects organization performance differently in each sector. Pay dispersion does not affect ROA but has a negative effect on market value in for-profit firms. It is negatively and significantly correlated with performance in nonprofits, and unexpectedly, pay dispersion has a positive effect on membership in unions. However, as efficiency wage theories suggest, I find that the total pay of the TMT generally has a positive and significant effect on the performance measures in all three sectors (except when performance is measured as program services expenses divided by total expenses in nonprofits). Although each sector explored here is very different from one another in its goals, stakeholders, reasons for existence, etc., I find a number of similarities in how managers are compensated.

APPENDIX

Appendix A. Summary of results: firm fixed effects

A. Pay-performance link	For-profit			Nonprofit			Union		
	Market value	ROA	Assets	Program service expense ratio	Grants and support	Assets	Membership	Avg. member wage	Assets
1. Salary / Cash pay	Positive and significant	Positive and significant	Nonsignificant	Negative and significant	Nonsignificant	Positive and significant	Positive and significant	Positive and significant	Nonsignificant
2. Total compensation	Positive and significant	Positive and significant	Nonsignificant	Negative and significant	Nonsignificant	Positive and significant	---	---	---

B. Compensation and performance	For-profit		Nonprofit		Union	
	Market value	ROA	Program service expense ratio	Grants and support	Membership	Avg. member wage
1. Dispersion	Negative and significant	Nonsignificant	Negative and significant	Negative and significant	Positive and significant	Nonsignificant
2. Total pay for TMT	Positive and significant	Positive and significant	Negative and significant	Positive and significant	Positive and significant	Positive and significant
3. Assets	Positive and significant	Nonsignificant	Nonsignificant	Negative and significant	Positive and significant	Positive and significant

Appendix B. For-profit. Correlation table

	roa	mktval	return	assets	cash pay_cv	cash pay_herf	total comp_cv	total comp_herf	total cash pay for TMT	total compensation for TMT
roa	1									
mktval	0.0311	1								
return	0.3826	-0.0073	1							
assets	-0.0270	0.5530	-0.0039	1						
cash pay_cv	0.0876	0.0045	0.0012	-0.0440	1					
cash pay_herf	0.1109	0.0140	0.0152	-0.0313	0.9441	1				
total comp_cv	0.0472	0.0096	0.0070	-0.0556	0.6512	0.6084	1			
total comp_herf	0.0436	0.0068	0.0076	-0.0436	0.5680	0.5799	0.9485	1		
total cash pay for TMT	0.0446	0.4449	0.0078	0.5670	0.2052	0.2169	0.1094	0.0998	1	
total compensation for TMT	0.0376	0.4654	0.0132	0.3869	0.1706	0.1700	0.2412	0.2399	0.6899	1

Appendix C. Nonprofit. Correlation table

	program expense ratio	grants and support	cash pay cv	cash pay herf	total pay cv	total pay herf	assets	total cash pay for TMT	total compensation for TMT
program expense ratio	1								
grants and support	0.112	1							
cash pay cv	-0.039	-0.061	1						
cash pay herf	-0.033	-0.048	0.942	1					
total pay cv	-0.042	-0.057	0.974	0.916	1				
total pay herf	-0.035	-0.045	0.927	0.98	0.942	1			
assets	0.089	0.559	-0.042	-0.039	-0.032	-0.033	1		
total cash pay for TMT	0.038	0.05	0.053	0.066	0.053	0.066	0.064	1	
total compensation for TMT	0.041	0.061	0.047	0.059	0.056	0.065	0.079	0.997	1

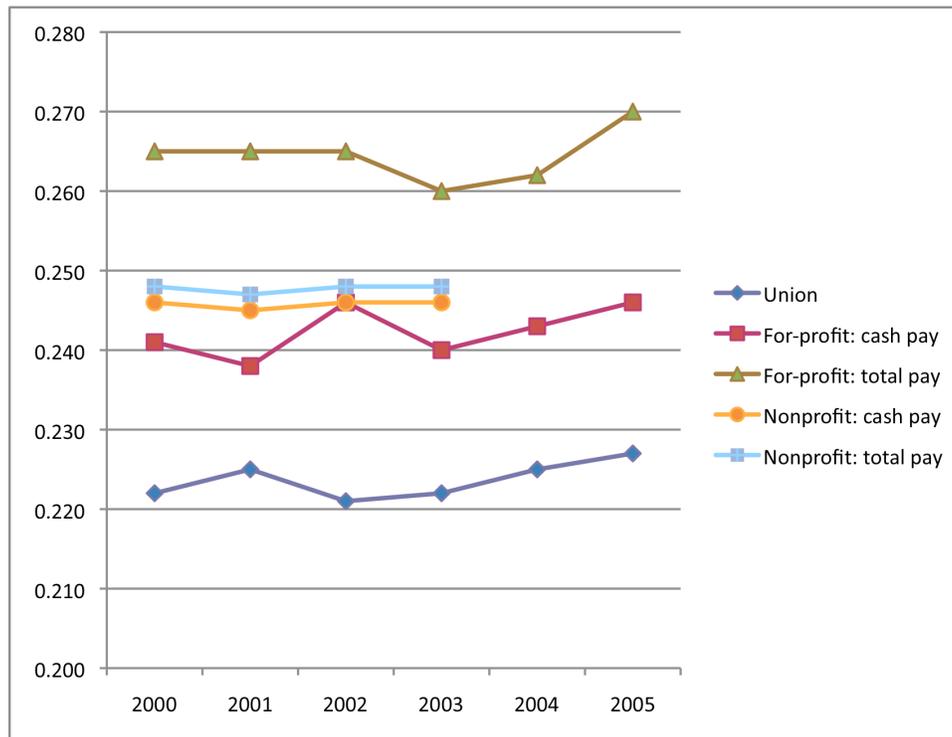
Appendix D. International union. Correlation table

	members	avg_wage_est	assets	herf	coef_var	total TMT pay
members	1					
avg_wage_est	-0.073	1				
assets	0.514	-0.033	1			
herf	-0.118	-0.006	-0.153	1		
coef_var	-0.158	0.039	-0.195	0.927	1	
total salary for TMT	0.260	0.173	0.406	-0.262	-0.218	1

Appendix E. Dispersion of Pay within Top Management Team. Herf^a

Organization	2000	2001	2002	2003	2004	2005
Union	0.222	0.225	0.221	0.222	0.225	0.227
For-profit: cash pay	0.241	0.238	0.246	0.240	0.243	0.246
For-profit: total pay	0.265	0.265	0.265	0.260	0.262	0.270
Nonprofit: cash pay	0.246	0.245	0.246	0.246		
Nonprofit: total pay	0.248	0.247	0.248	0.248		

^aHerf = summation of the squared values of each manager i's share of wages.



Appendix F. For-profit. Regression of Organization Performance on Cash Pay

Dispersion and Total Cash Pay for the TMT

	Dependent variable: ln(market value)					Dependent variable: ROA				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
dispersion ^a	.585*** (.090)	-1.017*** (.068)	-.378*** (.053)	-.366*** (.053)	-.071** (.034)	7.075*** (1.052)	5.125*** (1.107)	3.626*** (1.122)	3.509*** (1.123)	-.796 (.675)
ln(pay for entire TMT)		1.596*** (.022)	.617*** (.023)	.606*** (.023)	.301*** (.020)		1.943*** (.351)	4.243*** (.475)	4.145*** (.484)	3.948*** (.397)
ln(assets)			.553*** (.009)	.553*** (.009)	.588*** (.020)			-1.297*** (.181)	-1.285*** (.182)	-.415 (.403)
Year effects	no	no	no	yes	yes	no	no	no	yes	yes
Org effects	no	no	no	no	yes	no	no	no	no	yes
Constant	14.308*** (.046)	-8.941*** (.317)	-6.419*** (.255)	-6.342*** (.248)	-2.557*** (.478)	1.542*** (.538)	-26.762*** (5.140)	-32.679*** (5.184)	-32.601*** (5.272)	-43.517*** (9.455)
Adj. R ²	.007	.486	.699	.704	.958	.008	.013	.021	.022	.880
N	5850	5850	5850	5850	5850	5850	5850	5850	5850	5850

^a coefficient of variation

Appendix G. Nonprofit. Regression of Organization Performance on Cash Pay

Dispersion and Total Cash Pay for the TMT

	Dependent variable: program service expense ratio					Dependent variable: ln(grants and support)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
dispersion ^a	-.013*** (.004)	-.008* (.004)	-.007 (.004)	-.007 (.004)	-.011** (.005)	-1.527*** (.092)	-1.254*** (.092)	-1.187*** (.089)	-1.186*** (.089)	-.141* (.080)
ln(pay for entire TMT)		.009*** (.002)	.000 (.002)	.000 (.002)	-.005* (.003)		.479*** (.034)	.059 (.039)	.061 (.039)	.076* (.045)
ln(assets)			.010*** (.024)	.010*** (.001)	-.004 (.003)			.458*** (.023)	.458*** (.023)	-.110** (.044)
Year effects	no	no	no	yes	yes	no	no	no	yes	yes
Org effects	no	no	no	no	yes	no	no	no	no	yes
Constant	.832*** (.002)	.707*** (.023)	.648*** (.024)	.646*** (.024)	.966*** (.058)	15.558*** (.049)	9.014*** (.469)	6.207*** (.475)	6.247*** (.477)	15.950*** (.974)
Adj. R ²	.001	.007	.019	.019	.840	.046	.077	.137	.137	.902
N	5765	5765	5765	5765	5765	5765	5765	5765	5765	5765

^a coefficient of variation

Appendix H. For-profit. Regression of Organization Performance on Cash Pay Dispersion and Total Cash Pay for the TMT

	Dependent variable: ln(market value)					Dependent variable: ROA				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
herf	3.164*** (.487)	-4.894*** (.369)	-1.723*** (.286)	-1.669*** (.284)	-.293 (.189)	48.567*** (5.691)	39.532*** (5.950)	32.455*** (6.015)	31.997*** (6.019)	-4.435 (3.739)
ln(pay for entire TMT)		1.579*** (.022)	.604*** (.022)	.594*** (.023)	.294*** (.020)		1.771*** (.348)	3.947*** (.470)	3.840*** (.478)	3.924*** (.386)
ln(assets)			.555*** (.009)	.555*** (.009)	.589*** (.020)			-1.239*** (.181)	-1.226*** (.181)	-.405 (.403)
Year effects	no	no	no	yes	yes	no	no	no	yes	yes
Org effects	no	no	no	no	yes	no	no	no	no	yes
Constant	13.813*** (.119)	-7.970*** (.310)	-6.048*** (.238)	-5.982*** (.241)	-2.440*** (.470)	-6.927*** (1.395)	-31.351*** (4.997)	-35.642*** (5.017)	-35.402*** (5.104)	-43.683*** (9.306)
Adj. R ²	.007	.482	.698	.703	.958	.012	.016	.024	.025	.880
N	5850	5850	5850	5850	5850	5850	5850	5850	5850	5850

For-profit. Regression of Organization Performance on Total Compensation Dispersion and Total Compensation for the TMT

	Dependent variable: ln(market value)					Dependent variable: ROA				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
herf	1.992*** (.308)	-4.316*** (.219)	-1.675*** (.168)	-1.642*** (.167)	-.588*** (.106)	12.077*** (3.618)	5.216 (3.837)	.163 (3.932)	.261 (3.931)	-3.349 (2.174)
ln(pay for entire TMT)		1.264*** (.015)	.656*** (.014)	.646*** (.014)	.249*** (.012)		1.375*** (.260)	2.539*** (.333)	2.437*** (.335)	1.558*** (.236)
ln(assets)			.501*** (.007)	.501*** (.007)	.579*** (.020)			-.958*** (.171)	-.956*** (.172)	-.058 (.405)
Year effects	no	no	no	yes	yes	no	no	no	yes	yes
Org effects	no	no	no	no	yes	no	no	no	no	yes
Constant	14.053*** (.084)	-4.246*** (.222)	-2.667*** (.167)	-2.603*** (.168)	2.485*** (.317)	1.630* (.982)	-18.275*** (3.895)	-21.295*** (3.922)	-21.341*** (3.963)	-17.148*** (6.491)
Adj. R ²	.007	.556	.753	.757	.960	.002	.006	.011	.013	.878
N	5850	5850	5850	5850	5850	5850	5850	5850	5850	5850

Appendix I. Nonprofit. Regression of Organization Performance on Cash Pay
Dispersion and Total Cash Pay for the TMT

	Dependent variable: program service expense ratio					Dependent variable: ln(grants and support)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
herf	-.037*** (.014)	-.014 (.015)	-.011 (.015)	-.011 (.015)	-.022 (.016)	-4.318*** (.300)	-3.161*** (.307)	-3.000*** (.297)	-2.999*** (.297)	-.511* (.262)
ln(pay for entire TMT)		.009*** (.002)	.000 (.002)	.000 (.002)	-.006** (.003)		.478*** (.035)	.053 (.040)	.054 (.040)	.073** (.047)
ln(assets)			.010*** (.001)	.010*** (.001)	-.004 (.003)			.463*** (.023)	.463*** (.023)	-.111** (.044)
Year effects	no	no	no	yes	yes	no	no	no	yes	yes
Org effects	no	no	no	no	yes	no	no	no	no	yes
Constant	.836*** (.004)	.705*** (.024)	.646*** (.025)	.644*** (.025)	.975*** (.058)	15.982*** (.079)	9.284*** (.497)	6.439*** (.500)	6.476*** (.502)	16.063*** (.973)
Adj. R ²	.001	.006	.018	.018	.840	.035	.065	.126	.126	.902
N	5765	5765	5765	5765	5765	5765	5765	5765	5765	5765

Nonprofit. Regression of Organization Performance on Total Compensation Dispersion and Total Compensation for the TMT										
	Dependent variable: program service expense ratio					Dependent variable: ln(grants and support)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
herf	-.039*** (.014)	-.018 (.015)	-.016 (.015)	-.016 (.015)	-.030* (.015)	-4.134*** (.298)	-2.951*** (.303)	-2.860*** (.294)	-2.858*** (.294)	-.486* (.257)
ln(pay for entire TMT)		.009*** (.002)	.000 (.002)	-.001 (.002)	-.008*** (.003)		.503*** (.034)	.069* (.040)	.070* (.040)	.109*** (.049)
ln(assets)			.010*** (.001)	.010*** (.001)	-.004 (.003)			.461*** (.023)	.461*** (.023)	-.112** (.044)
Year effects	no	no	no	yes	yes	no	no	no	yes	yes
Org effects	no	no	no	no	yes	no	no	no	no	yes
Constant	.836*** (.004)	.711*** (.024)	.655*** (.025)	.653*** (.025)	1.004*** (.060)	15.945*** (.080)	8.831*** (.496)	6.243*** (.497)	6.281*** (.500)	15.588*** (1.010)
Adj. R ²	.001	.006	.018	.018	.840	.032	.066	.126	.125	.902
N	5765	5765	5765	5765	5765	5765	5765	5765	5765	5765

Appendix J. International unions. Regression of Organization Performance on Cash Pay Dispersion and Total Cash Pay for the TMT

	Dependent variable: ln(membership)					Dependent variable: ln(average member wage)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
herf	-17.360*** (2.253)	-9.587*** (2.110)	-5.645*** (1.807)	-5.622*** (1.822)	1.431** (.675)	3.943 (2.450)	6.916*** (2.608)	5.454** (2.629)	5.496** (2.636)	-.432 (2.486)
ln(pay for entire TMT)		1.086*** (.111)	.043 (.133)	.040 (.134)	.157*** (.059)		.415*** (.137)	.802*** (.193)	.827*** (.195)	.513** (.219)
ln(assets)			0.666*** (.060)	.668*** (.061)	.091** (.041)			-.247*** (.088)	-.256*** (.088)	.405*** (.150)
Year effects	no	no	no	yes	yes	no	no	no	yes	yes
Org effects	no	no	no	no	yes	no	no	no	no	yes
Constant	13.732*** (.517)	-2.115 (1.681)	.022 (1.424)	.105 (1.513)	6.072*** (1.029)	8.395*** (.562)	2.334 (2.077)	1.541 (2.071)	.840 (2.189)	-3.589 (3.791)
Adj. R ²	.168	.373	.558	.552	.993	.006	.033	.056	.053	.898
N	291	291	291	291	291	291	291	291	291	291

Appendix K. Nonprofit. Top Five Highest Paid Employees. Summary Statistics

	All years	2000	2001	2002	2003	2004	2005
Cash Pay							
Top Manager	187985 (218876) [128932]	175060 (201571) [121867]	174106 (180039) [124684]	180176 (220457) [125132]	196131 (213893) [133984]	203318 (249743) [135312]	199720 (237834) [133689]
Second Manager	156660 (159650) [110339]	145189 (153934) [103540]	145546 (130911) [105002]	148234 (141461) [106346]	164891 (190341) [115181]	168115 (169633) [116845]	168609 (166613) [118036]
Third Manager	143399 (134965) [102472]	130920 (111788) [95023]	134272 (128151) [97395]	135926 (122216) [99052]	149468 (143418) [106536]	154252 (151869) [108442]	155803 (146132) [110005]
Fourth Manager	134709 (121957) [97039]	123010 (106855) [90197]	124928 (103760) [92529]	127589 (108272) [93517]	140596 (125434) [100641]	144294 (133969) [102827]	148029 (145231) [104457]
Fifth Manager	129273 (121285) [92703]	116647 (100395) [85610]	119965 (105623) [88012]	122307 (114694) [89459]	134674 (127288) [96703]	138685 (134267) [98597]	143401 (137700) [100136]
Total Compensation							
Top Manager	207000 (232800) [143490]	190582 (210385) [134754]	190247 (191378) [137530]	197449 (230048) [138440]	215927 (224341) [149155]	226006 (275814) [153272]	222367 (251480) [150949]
Second Manager	173338 (171102) [124027]	158244 (160109) [114189]	159210 (139076) [116703]	163184 (150733) [119001]	182667 (200101) [129334]	187952 (184446) [132547]	189364 (184655) [134185]
Third Manager	159113 (146549) [115427]	143244 (119121) [105476]	147434 (135848) [108000]	149784 (131228) [110930]	166290 (153827) [120934]	173010 (170959) [123858]	175163 (159113) [125827]
Fourth Manager	150019 (133445) [109217]	135183 (115927) [100291]	137697 (113443) [103022]	141338 (119961) [104751]	156915 (136331) [114245]	162399 (147437) [117054]	166761 (157737) [119375]
Fifth Manager	144032 (134689) [104481]	128029 (107366) [95146]	132257 (116491) [97855]	135692 (135171) [100347]	150526 (137154) [109013]	156046 (146547) [112085]	161631 (154207) [115416]
Program expenses (in thousands)	87400 (284000) [25100]	71800 (168000) [23700]	75800 (251000) [23200]	80100 (284000) [23000]	98600 (345000) [28000]	101000 (370000) [27300]	97500 (239000) [26600]
Expenses (in thousands)	101000 (307000) [30300]	83300 (187000) [28800]	87900 (279000) [28100]	92500 (303000) [27900]	114000 (366000) [33800]	117000 (395000) [32900]	113000 (267000) [31900]
Grants and support (in thousands)	16500 (72300) [2721]	14100 (55100) [2540]	14500 (60300) [2418]	14600 (60200) [2536]	17400 (70900) [2928]	18500 (82200) [3011]	20100 (95500) [3151]
Assets (in thousands)	181000 (830000) [59400]	160000 (591000) [53000]	159000 (594000) [51700]	157000 (728000) [49400]	197000 (331000) [33200]	206000 (991000) [69500]	211000 (953000) [67900]
N	35428	5552	5997	6471	5458	5790	6160

Source: Internal Revenue Service, Form 990.

Note: Standard deviation in parantheses. Median in brackets.

Appendix L. Nonprofit. Highest Paid Employee. "Determinants" of pay

Panel A	Dependent variable: ln(cash pay)					
	(1)	(2)	(3)	(4)	(5)	(6)
ln(grants and support)	.025*** (.001)			-.016*** (.001)	-.016*** (.001)	.006*** (.002)
program expense ratio		.563*** (.032)		.380*** (.028)	.376*** (.028)	.003 (.035)
ln(assets)			.220*** (.002)	.226*** (.002)	.225*** (.002)	.023*** (.006)
Year effects	no	no	no	no	yes	yes
Org effects	no	no	no	no	no	yes
Constant	11.521*** (.022)	11.412*** (.027)	7.944*** (.037)	7.760*** (.043)	7.738*** (.044)	11.277*** (.107)
Adj. R ²	.008	.008	.245	.252	.253	.824
N	35428	35428	35428	35428	35428	35428
Panel B	Dependent variable: ln(total compensation)					
	(1)	(2)	(3)	(4)	(5)	(6)
ln(grants and support)	.031*** (.001)			-.011*** (.001)	-.012*** (.001)	.008*** (.002)
program expense ratio		.550*** (.032)		.365*** (.027)	.360*** (.027)	-.003 (.030)
ln(assets)			.230*** (.002)	.233*** (.002)	.232*** (.002)	.023*** (.005)
Year effects	no	no	no	no	yes	yes
Org effects	no	no	no	no	no	yes
Constant	11.534*** (.021)	11.526*** (.026)	7.880*** (.035)	7.677*** (.041)	7.655*** (.042)	11.350*** (.091)
Adj. R ²	.013	.008	.279	.285	.288	.866
N	35428	35428	35428	35428	35428	35428

Source: Internal Revenue Service, Form 990.

* p-value < .10

** p-value < .05

*** p-value < .01

Appendix M. Non-profit. Employees. Regression of Organization Performance on Total Compensation Dispersion and Total Compensation for the TMT

	Dependent variable: program service expense ratio					Dependent variable: ln(grants and support)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dispersion ^a	-.023*** (.004)	-.043*** (.004)	-.046*** (.004)	-.046*** (.004)	-.008*** (.003)	-.750*** (.082)	-1.343*** (.084)	-.587*** (.083)	-.557*** (.083)	-.211*** (.050)
ln(pay for entire TMT)		.022*** (.001)	.025*** (.001)	.025*** (.001)	.005** (.002)		.629*** (.022)	-.133*** (.026)	-.150*** (.026)	.302*** (.038)
ln(assets)			-.002*** (.000)	-.002*** (.000)	-.001 (.001)			.484*** (.010)	.485*** (.010)	.012 (.016)
Year effects	no	no	no	yes	yes	no	no	no	yes	yes
Org effects	no	no	no	no	yes	no	no	no	no	yes
Constant	.830*** (.001)	.537*** (.013)	.532*** (.013)	.532*** (.013)	.776*** (.034)	14.642*** (.020)	6.312*** (.289)	7.758*** (.282)	7.876*** (.283)	10.228*** (.556)
Adj. R ²	.001	.014	.015	.015	.805	.002	.025	.085	.086	.888
N	35428	35428	35428	35428	35428	35428	35428	35428	35428	35438

Source: Internal Revenue Service, Form 990.

* p-value < .10

** p-value < .05

*** p-value < .01

^a Coefficient of variation

Appendix N. Nonprofit. Employees. Correlation table

	program expense ratio	grants and support	salary cv	salary herf	total pay cv	total pay herf	assets	total salary for TMT	total pay for TMT
progs_ratio	1								
grants and support	0.073	1							
salary cv	-0.029	0.005	1						
salary herf	-0.015	0.006	0.867	1					
total pay cv	-0.032	-0.005	0.966	0.835	1				
total pay herf	-0.018	0	0.844	0.965	0.871	1			
assets	0.064	0.483	0.036	0.025	0.015	0.014	1		
total salary for TMT	0.099	0.249	0.247	0.23	0.236	0.229	0.301	1	
total pay for TMT	0.1	0.264	0.243	0.227	0.239	0.232	0.328	0.989	1

Appendix O. Non-profit. Employees. Regression of Organization Performance on Cash Pay Dispersion and Total Cash Pay for the TMT

	Dependent variable: program service expense ratio					Dependent variable: ln(grants and support)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dispersion ^a	-.020*** (.004)	-.042*** (.004)	-.043*** (.004)	-.043*** (.004)	-.008*** (.003)	-.735*** (.081)	-1.248*** (.083)	-.518*** (.081)	-.492*** (.082)	-.076* (.046)
ln(pay for entire TMT)		.022*** (.001)	.023*** (.001)	.023*** (.001)	.004*** (.002)		.511*** (.022)	-.222*** (.025)	-.235*** (.025)	.119*** (.027)
ln(assets)			-.001** (.0004)	-.001** (.0005)	-.001 (.001)			.503*** (.010)	.502*** (.010)	.018 (.016)
Year effects	no	no	no	yes	yes	no	no	no	yes	yes
Org effects	no	no	no	no	yes	no	no	no	no	yes
Constant	.830*** (.001)	.544*** (.013)	.543*** (.013)	.543*** (.013)	.789*** (.027)	14.640*** (.019)	7.932*** (.284)	8.581*** (.274)	8.662*** (.275)	12.542*** (.440)
Observations	35428	35428	35428	35428	35428	35428	35428	35428	35428	35428
Adj. R-squared	.0008	.014	.014	.014	.805	.002	.018	.094	.087	.888

Source: Internal Revenue Service, Form 990.

* p-value < .10

** p-value < .05

*** p-value < .01

^a Coefficient of variation

Appendix P. Non-profit. Employees. Regression of Organization Performance on Cash Pay Dispersion and Total Cash Pay for the TMT

	Dependent variable: program service expense ratio					Dependent variable: ln(grants and support)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
herf	-.064*** (.023)	-.171*** (.024)	-.175*** (.024)	-.174*** (.024)	-.016 (.015)	-2.212*** (.511)	-4.659*** (.520)	-1.394*** (.504)	-1.253*** (.505)	-.298 (.244)
ln(pay for entire TMT)		.020*** (.001)	.021*** (.001)	.021*** (.001)	.003* (.002)		.468*** (.021)	-.255*** (.025)	-.267*** (.025)	.113*** (.027)
ln(assets)			-.001 (.001)	-.001 (.001)	-.001 (.001)			.510*** (.010)	.510*** (.010)	.018 (.016)
Year effects	no	no	no	yes	yes	no	no	no	yes	yes
Org effects	no	no	no	no	yes	no	no	no	no	yes
Constant	.839*** (.005)	.590*** (.013)	.590*** (.013)	.590*** (.013)	.806*** (.026)	14.967*** (.108)	9.250*** (.282)	9.080*** (.272)	9.131*** (.273)	12.661*** (.428)
Adj. R ²	.0002	.012	.012	.012	.805	.001	.014	.086	.087	.888
N	35428	35428	35428	35428	35428	35428	35428	35428	35428	35428

Non-profit.Employees. Regression of Organization Performance on Total Compensation Dispersion and Total Compensation for the TMT

	Dependent variable: program service expense ratio					Dependent variable: ln(grants and support)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
herf	-.083*** (.025)	-.196*** (.025)	-.204*** (.025)	-.203*** (.025)	-.015 (.017)	-2.189*** (.534)	-5.345*** (.542)	-1.645*** (.529)	-1.468*** (.530)	-.927*** (.274)
ln(pay for entire TMT)		.021*** (.001)	.023*** (.001)	.023*** (.001)	.003 (.002)		.589*** (.022)	-.170*** (.026)	-.187*** (.026)	.282*** (.038)
ln(assets)			-.001** (.000)	-.001** (.000)	-.001 (.001)			.493*** (.010)	.494*** (.010)	.013 (.016)
Year effects	no	no	no	yes	yes	no	no	no	yes	yes
Org effects	no	no	no	no	yes	no	no	no	no	yes
Constant	.843*** (.005)	.584*** (.013)	.583*** (.013)	.583*** (.013)	.804*** (.032)	14.962*** (.112)	7.717*** (.289)	8.325*** (.280)	8.408*** (.281)	10.634*** (.532)
Adj. R-squared	.000	.013	.013	.013	.805	.000	.021	.084	.085	.888
Observations	35428	35428	35428	35428	35428	35428	35428	35428	35428	35428

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