

BOARD STRUCTURE AND EXECUTIVE COMPENSATION IN NONPROFIT ORGANIZATIONS: EVIDENCE FROM HOSPITALS

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In contrast to managers of for-profit corporations, nonprofit (NP) managers do not face disciplinary pressures from hostile takeovers, concentrated shareholders, or equity-based compensation plans. Past authors have argued that the lack of alternative control mechanisms implies that NP boards should contain few, if any, managers as voting members. This study finds that when NP hospital CEOs are voting members of their boards, their compensation is about 10 percent higher than when they are ex officio members or simply staff (controlling for a rich set of economic factors that are expected to produce cross-sectional variation in CEO compensation). The results are consistent with the hypothesis that NP boards are more effective at controlling managerial agency problems when they do not contain internal managers as voting members. While this interpretation is subject to the usual caveats about potential omitted variables and endogeneity biases, these problems are arguably less severe in this study than in related studies from the for-profit sector.

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1. Introduction

Recent business scandals (e.g., Arthur Andersen, Enron, Global Crossing, and WorldCom) have generated significant interest in corporate governance. Attention has not been limited to for-profit organizations, but extends to nonprofit organizations as well. For example, in the wake of these corporate scandals the New York State Attorney General proposed accounting and management “reforms” for nonprofit organizations similar to those contained in the Sarbanes-Oxley Act of 2002 for publicly traded corporations.¹

While academics have produced a significant body of empirical evidence on governance in for-profit corporations, relatively little attention has been paid to governance in nonprofit organizations.² The lack of research on the topic is unfortunate given the importance of the nonprofit sector to the economy. Collectively, nonprofit organizations employed 7.1 percent of all paid employees in the United States in 1997 and generated total revenue of about \$665 billion.³

The primary internal governance mechanism in nonprofit organizations is the board of directors. Previous authors (e.g., Fama and Jensen (1983)) have argued that it is important for nonprofit organizations to limit internal managements’ participation as board members. While this argument has important implications for the design of nonprofit boards, it has not been subject to empirical tests.

¹ For example, see “NY’s Attorney General Seeks to Apply Sarbanes-Oxley Act,” *Nonprofit Times*, March 1, 2003.

² Recent empirical papers on the topic include Brickley and Van Horn (2002), Eldenburg and Krishnan (2003), Eldenburg, et al. (2001), Frumkin and Keating (2001), Hallock (2000), and Roomkin and Weisbrod (1999). Eldenburg and Krishnan and Eldenburg, et al. provide evidence on how the role of the board of directors varies across different types of nonprofits hospitals in California (e.g., government versus private). The other papers provide evidence on incentive compensation and incentives from the threat of turnover.

³ Data is from the Independent Sector, *The New Nonprofit Almanac*, 2001.

This paper provides evidence on this issue by examining whether the level of CEO compensation in nonprofit hospitals is affected by having the CEO serve as a voting member of the board of directors (as opposed to an ex officio member or simply staff). We find that after controlling for factors that are expected to affect CEO compensation, including CEO, hospital, and market characteristics, compensation is approximately 10 percent higher in firms where the CEO is a voting member of the board. Nonprofit boards are legally responsible for limiting the payment of “excessive” compensation to management compensation.⁴ Our findings are consistent with hypothesis that nonprofit boards are more effective at limiting excessive compensation when they do not have internal managers as voting members.

Numerous studies in the economic literature have used the same basic empirical approach (e.g., to study boards of directors and other governance mechanisms in the for-profit sector and to estimate compensating wage differentials.) Concerns about endogeneity and omitted variables bias leave the evidence in all of these studies (including this one) subject to alternative interpretations. It is possible that observed correlations between compensation and variables such as board structure and managerial voting rights reflect unobserved factors that jointly affect the variables. While no single study can completely address these issues, we argue that the relative homogeneity of our observations and the richness of our data allow for more powerful and potentially less biased tests than past governance studies that rely on heterogeneous firms from the for-profit sector.

⁴Board members face significant tax and legal exposure under Section 4958 of the Internal Revenue Code if they fail in their duty to limit excessive compensation. They can also face legal charges for violating their basic fiduciary duties of good faith, reasonable care and loyalty.

Our study focuses solely on hospitals. There are many other types of nonprofit organizations (for example, universities, social service agencies, charitable foundations, museums, and orchestras). Significant work remains to develop a deeper understanding of the governance in this broader set of organizations. Nevertheless, on the basis of revenues and employment, the healthcare sector is the most important component of the nonprofit sector and hospitals are the most important component of the healthcare sector. Indeed, the hospital sector is so large that it is important and interesting in its own right.⁵

The remainder of this paper is organized as follows. Sections 2 and 3 provide a more detailed discussion of nonprofit governance and CEO compensation. The relevant past literature is cited; our central research question is developed within the context of this discussion. Sections 4 and 5 describe the sample and the empirical findings. The paper concludes with a brief summary.

2. Nonprofit Governance

The defining characteristic of a nonprofit organization is that the persons who control these organizations — including the board, officers, and members — are forbidden from receiving the organizations’ residual profit. Laws do not preclude nonprofit organizations from making a “profit”; indeed, some nonprofit organizations regularly realize revenues that substantially exceed their costs. Nonprofit organizations often receive significant tax benefits and regulations require that their net surplus

⁵ Salamon (1999) reports that the healthcare sector absorbed close to 60 percent of all nonprofit revenues in 1996 and over 25 percent of all charitable contributions. Hospital care, with about 35 percent of the total healthcare revenue, was the most important component of this sector.

(“profits”) be used for social purposes, such as the arts, education, or charity.⁶ Nonprofit organizations are private and self-governing.

Nonprofit organizations have a potential advantage over for-profit organizations in certain activities (e.g., those that depend on donations) because of lower owner-stakeholder conflicts.⁷ The absence of residual claimants, however, makes it more difficult to control managerial agency problems in nonprofit organizations since managers are not disciplined by the market for corporate control or by concentrated shareholders. Also, nonprofit organizations are precluded from paying their managers equity-based incentive compensation that could also be used to mitigate agency problems.

The primary internal mechanism for controlling managerial agency problems in nonprofit organizations is the board of directors. Nonprofit boards are either elected by the members of the organization (if the organization has members) or are self-perpetuating (new board members are approved by existing board members). The primary external control mechanisms include the Internal Revenue Service and the relevant state attorney general’s office. While monitoring by donors and customers can also impose disciplinary pressure on nonprofit managers, free-riding incentives and poor information limit the effectiveness of donor and customer monitoring in many organizations. Further, donors and customers do not have legal standing to file derivative lawsuits against managers on behalf of the organization.

⁶ Most nonprofit organizations in the United States fall into one of two major groups based on the U.S. Tax Code: 501(c) 3 charitable organizations and religious congregations and organizations, and 501(c) 4 social welfare organizations. These organizations are exempt from most federal, state, and local taxes; some receive tax-deductible contributions; some can issue tax-exempt bonds.

⁷ Hansmann (1980) and Fama and Jensen (1983b) argue that nonprofit form can be used to control agency conflicts between donors and residual claimants. Hansmann also argues that the absence of a residual owner gives nonprofit organizations a comparative advantage in certain markets where customers are at an informational disadvantage relative to the product provider.

Internal managers play a prominent role on the boards of most for-profit organizations. For example, most for-profit boards in the United States include several internal managers. While the typical for-profit board has a majority of “outside” directors, these directors often have business ties with the management and/or the company. The Chief Executive Officer is usually the Chairman of the Board (Brickley, Coles and Jarrell (1997)).

Fama and Jensen (1983a) argue that the lack of alternative control devices implies that the *optimal* nonprofit board is more separated from management than for the typical for-profit corporation. They correspondingly assert that “nonprofit boards generally include few if any internal agents as voting members” to guard against managerial expropriation of organizational resources (such as donations).

Our research indicates that the role of the top manager varies considerably across nonprofit hospitals. Within our sample, the top manager is a voting member of the board in 53% of the hospitals, while in the remaining hospitals the top manager is either a nonvoting (ex-officio) member or simply serves as staff to the board. The primary purpose of this paper is to examine whether greater separation of the board from management leads to lower managerial agency problems in these organizations.

3. The Level of CEO Compensation

3.1 “Excessive” CEO Compensation

One method that managers might use to expropriate resources from the organization is *excessive compensation*. While the average executive in the nonprofit sector receives lower compensation than his counterpart in the for-profit sector, scandals at several large nonprofit organizations (including Adelphi University, United Way, the

NAACP, and the Baptist and Presbyterian Churches) have raised concerns that some nonprofits are paying their executives excessive compensation. One reason that nonprofit organizations are required to report executive compensation publicly (on *Form 990*) is that this allows the IRS, state attorney generals' offices, donors, and others to monitor executive compensation. Under the current tax code, nonprofit board members can be held personally liable for paying the manager excessive compensation.⁸

Economic theory predicts that all CEOs would be paid the same compensation in perfectly competitive markets with homogenous CEOs and organizations. Under these conditions, compensation would be determined in the marketplace by the supply and demand for CEOs. An organization would be paying excessive compensation if it paid the CEO more than the market price. Organizations that pay excessive compensation in a competitive market are eventually competed out of the marketplace.

CEOs and organizations are not homogeneous in the actual marketplace. Labor economics (e.g., hedonic wage models) predicts that less attractive organizations (e.g., due to high risk or poor working conditions) will have to pay compensating differentials to attract and retain a CEO in a competitive labor market. Economic theory also predicts that CEO compensation should rise with the ability and productivity of the CEO (in a competitive labor market the rents accrue to the superior individual not to the organization).

⁸ In 1998, the IRS issued new regulations on unreasonable compensation in nonprofit organizations. These regulations define the notion of an "excess benefit transaction" as one in which an "economic benefit provided by a tax-exempt organization to an employee or trustee exceeds the value of the consideration received for providing the benefit". Financial penalties can be imposed on managers who "knowingly, willfully and without reasonable cause" participate in an excess benefit transaction. The definition of "organization manager" includes both officers and directors of the organization.

In this more general setting, an organization is paying excessive compensation when it pays the existing CEO more than is necessary to attract and retain a replacement CEO of equal ability. Imperfect product market competition and/or the existence of tax and other subsidies imply that a nonprofit organization is not necessarily competed out of existence if it pays excessive compensation.

3.2 Past Research

Several past researchers have estimated regression models of CEO compensation to provide evidence on the effects of governance features (such as board composition) in for-profit organizations.⁹ The typical model includes various CEO and/or organizational characteristics as controls for economic factors that are expected to result in variation in CEO pay across organizations. The primary explanatory variables of interest in these studies are governance characteristics, such as board composition. The maintained assumption is that governance characteristics do not have an independent effect on CEO pay unless there are differences in how well specific governance features control managerial agency problems. While the evidence from these studies is mixed, there is some support for the hypothesis that for-profit corporations with stronger internal governance systems pay their CEOs less than firms with weaker internal governance systems.

Eldenburg and Krishnan (2003), Frumkin, and Keating (2001) and Hallock (2000) provide evidence on the determinants of managerial pay in nonprofit organizations. The

⁹ See Bebchuck and Fried (2003) for a review. Specific papers on governance and CEO pay in the for-profit sector include Borokhovich, Brunarski and Parrino (1997), Core, Holthausen and Larcker (1999), Bertrand and Mullainathan (2000), Benz, Kucher and Stutzer (2001), Chang, Nagar and Rajan, (2001), Cyert, Kang and Kumar (2002), Hartzell and Starks, (2002), and Hallock (1997). Related models have also been estimated by labor economists to test for the presence of compensating wage differentials. See, for example, Viscusi (1978), Smith (1979) and Hwang, Reed and Hubbard (1992).

evidence in all three studies indicates that managerial compensation is positively correlated with organizational size. Frumkin and Keating's findings suggest that managerial compensation in nonprofit organizations increases with "free cash flow." They argue that the extra compensation associated with free cash flow is excessive (i.e., it is due to an agency problem as opposed to competitive pressures in the labor market). Eldenburg and Krishnan find that CEO pay is higher in private nonprofit hospitals than in public nonprofit hospitals. They attribute the difference to community pressure placed on publicly elected board members. Their evidence also suggests that the lower pay in public nonprofit hospitals results in lower quality CEOs and reduced organizational performance relative to private nonprofit hospitals. None of the existing papers on nonprofit governance examine the effects of managerial voting rights on CEO compensation.

3.3 Research Question Addressed in this Paper

Our sample consists of CEOs from nonprofit hospitals. We estimate regression models that express CEO compensation as a function of variables reflecting the characteristics of the CEO, the hospital, and the local market area. Our primary interest is in a dummy variable that is equal to one if the CEO is a voting member of the board. Similar to the studies summarized above, the null hypothesis is that controlling for CEO, hospital, and market characteristics, voting rights on the board will have no influence on CEO pay.¹⁰ We are able to reject the null hypothesis and instead find that CEO pay is about 10 percent higher in organizations where managers have voting rights on the board.

¹⁰ The underlying premise is that managerial voting rights are not priced in the hedonic wage function for CEOs. Presumably managers value power. If so, managerial voting rights could be associated with a negative compensating differential. However, this would imply that compensation would be lower in firms with managerial voting rights, not higher as predicted by the "excess compensation hypothesis."

Assuming we have included the appropriate controls, this finding suggests that nonprofit organizations with weaker separation of the top manager and the board are more likely to pay “excessive” compensation.

3.4 Endogeneity and Omitted Variables

Potential endogeneity and omitted variables biases exist in this and all related past studies. For example, in our study unobserved factors that jointly affect the CEO’s voting rights and compensation could be driving the observed correlation between the two variables. Unfortunately the lack of developed theory on optimal governance structures makes it difficult to address these potential problems through a simultaneous equation approach. Justifying an instrumental variable for voting rights is problematic, since most variables that might explain the existence of managerial voting rights could also affect compensation.

While we are careful to caution the reader about alternative interpretations of the results, there are at least four reasons why potential omitted variables and endogeneity biases are of less concern in this study than in most past work. First our sample is drawn from one industry. All of the organizations are short-term acute care hospitals; where almost all of the executives have similar training (i.e., almost all have master’s degrees). This relative homogeneity implies that omitted factors are less likely to be driving the results than in studies with more heterogeneous samples (since many of the omitted factors related to the individual and hospital are likely to be similar across observations). Second our data set is very rich and we are able to control for numerous individual and organizational characteristics. Studies from the for-profit sector tend to include relatively

few controls.¹¹ Third our sample is drawn from the nonprofit sector. Substitutability and complementarity among alternative control devices (takeover markets, equity-based compensation, etc.) make it difficult to ascertain the marginal effect of each mechanism in for-profit firms.¹² Since nonprofit organizations rely on one major internal control device (the board of directors), substitutability and complementarity among alternative devices is not a major concern. Fourth, the manager's role on the board is largely predetermined with respect to the current CEOs' compensation contract. While corporate bylaws (which specify the manager's voting rights) can typically be changed by a vote of the board and/or the members, bylaw changes are relatively infrequent events among the firms in our sample.¹³

4. Sample

4.1 Selection Criteria

Our sample consists of 308 nonprofit hospitals providing acute care services over the period 1998 through 2000. Since CEO voting rights and compensation vary little within a given firm over the period, we only use the most recent observation for each hospital in our statistical analysis (we don't have data for all of the sample hospitals for 2000). Pooling the sample would be inappropriate given the extreme autocorrelation.

¹¹ For example, in Core, Holthausen and Larcker (1999), the CEO compensation regressions do not include CEO characteristics or market characteristics, although firm-level controls are included. Hartzell and Starks (2002) also lacks controls for CEO and market characteristics.

¹² See Cyert, Kang and Kumar (2002).

¹³ Hermalin and Weisbach (1998) suggest that management's power on the board might increase as the manager proves his ability and worth to the company. If so, any observed correlation between compensation and management voting rights could be driven by hard to observe factors relating to the perceived ability of the CEO (ability drives both compensation and managerial voting rights). Our controls for CEO age and tenure help, but do not completely address, this possibility. In our sample, the mean length of time that current board practices have been in place is 11.5 years. Thus these practices appear to be largely predetermined with respect to the current CEO. There are, however, at least 11 hospitals in our sample that "changed the role" of the CEO on the board between the 2000 and 2002 surveys (we are not sure in which direction).

Six observations are from 1998 (2 percent); 46 (15.3 percent) are from 1999; 248 (82.7 percent) are from 2000.

A hospital has to meet the following criteria to be in our sample: (1) the hospital responded to the Governance Institute's bi-annual survey of hospital governance practices in either 2000 or 2002, (2) we can obtain a hard copy of the hospital's IRS Form 990 for the relevant year, (3) the governance survey indicates that the board of directors has "independent" authority on executive compensation¹⁴, (4) the CEO is an employee of the hospital and not an employee of a contract management organization, and (5) the hospital's primary objective is to provide acute care hospital services. These criteria result in a relatively homogenous sample of short-term acute care hospitals for which we have the relevant data to conduct our tests.

Our database contains variables from five different sources. The Governance Institute bi-annual survey of hospital governance practices is used to identify the role of the CEO on the hospital board as well as hospital governance practices. Not all firms responded to the survey in both years. We use the 2000 response if available since it is closest in timing to the other variables in the database (which we could not obtain for 2002). In 123 cases, there is a discrepancy between the year of the survey response and the relevant year for the remaining variables. We assume that the governance structure is the constant between the two years for these observations.

We obtain financial data on hospitals and CEO compensation for the hospital from an electronic database of IRS 990 forms. To help ensure the accuracy of the

¹⁴ Most of the hospitals in our sample (82 percent) are legally independent; the board does not report to a "higher authority." While the remaining hospitals are in hospital systems, their boards have "independent authority on executive compensation." A system hospital is not included in our sample if its board has to seek approval on executive compensation from a "higher board or authority." Our primary results are similar when we exclude system hospitals from our analysis.

compensation information, we manually review each hospital's IRS 990 Form.¹⁵ In some cases, the form indicates that the CEO did not hold the position for the complete year. For comparability, we convert the average monthly compensation for these CEOs to a "full-year" compensation. The manual review of the 990 Forms also enables us to eliminate contract managed hospitals and hospitals whose primary objective is not short-term acute care (this information is not captured in the digitized data).

We obtain information on the CEO's tenure with the organization, tenure with the firm, and age from the Academy of Health Care Executives (ACHE) online affiliate directory. The database does not contain the birth date of the executive. We estimate the age based on the year that the executive obtained his/her undergraduate degree. We assume that college graduation occurs at age 22.

We use the county to proxy for the hospital's market area. We obtain data on population density, per capita income and the number of hospitals in the county from the Area Resource File.

Finally, we obtain the hospital case-mix index from the Centers for Medicare and Medicaid Services. The case-mix index is a measure of the service complexity of the hospital.

Our sample composition depends on our ability to match hospitals across different datasets. The Governance Institute surveys contain information on 651 unique hospitals where the board has independent authority on executive compensation. Our name match of these organizations with the IRS Business Master File and subsequent IRS 990 forms

¹⁵ The digitized executive compensation data captures information from part V of the IRS form 990 on the five highest paid officers. Frequently the highest paid officer is the president/ CEO. Some organizations, however, list the president / CEO under the section of the 990 relating to the five highest paid employees. To help ensure data accuracy and integrity we manually reviewed each 990 form to validate the CEO compensation information.

eliminates all for-profit hospitals (since for-profit hospitals do not file 990's), reducing the possible observations to 437. The manual review of the IRS 990 Forms to exclude contract-managed hospitals and hospitals that do not focus on short-term acute care eliminates another 129 observations leaving us with a final sample of 308 hospitals. The number of valid observations varies across variables due to missing values.

4.2 Descriptive Statistics

Table 1 presents descriptive statistics for our sample. In our subsequent discussion of this table, we focus on medians to present a picture of the “typical hospital in our sample. It is important to note, however, that many of the variables display relatively large cross-sectional variation.

The median values for CEO cash compensation, non-cash compensation, and total compensation (cash and non-cash) are \$187,180, \$10,840, and \$203,860, respectively. Non-cash compensation includes items such as contributions to benefit plans, deferred compensation, expense accounts, and private use of company cars. The median CEO in our sample is 52 years old, has been the CEO for 8 years, and has worked for the hospital for a total of 11 years. Ten percent of the CEOs are women and only 1 percent are physicians¹⁶.

The median hospital has 14 board members. The typical board has one employee director (usually the CEO); however, having no employee directors is also relatively common. Community outsiders commonly hold about ten seats (75 percent of the total), while physicians (who have a non-employee affiliation with the hospital) hold the

¹⁶ The highest degree for almost all of the CEOs in our sample is a Masters Degree in either a health-related field or business (not included in Table 1).

TABLE 1
HOSPITAL DESCRIPTIVE STATISTICS

This table presents the mean and median values of selected variables employed in our econometric tests of the relation between CEO compensation and hospital governance. Measures of CEO compensation and financial performance are derived from IRS Form 990. Hospital CEO characteristics are obtained from the ACHE affiliate directory. Hospital board characteristics are from the Governance Institute Survey. Market characteristics are from the Area Resource File. The sample is drawn from the period 1998-2000. The most recent observation is used for each hospital.

	N	Mean	Standard Deviation	25th Percentile	Median	75th Percentile
CEO Compensation						
Cash Compensation (in thousands)	300	224.34	135.59	136.02	187.18	279.94
Deferred Benefits (in thousands)	283	27.04	58.91	5.00	10.84	24.12
Total Compensation	282	249.77	166.99	140.18	203.86	300.90
CEO Characteristics						
CEO Compensation (in thousands)	300	224.34	135.59	136.02	187.18	279.94
CEO Age	218	52	7	48	52	56
CEO Tenure with Hospital	223	13.10	9.01	6	11	19
Tenure as CEO of Hospital	222	9.40	6.54	4	8	13
CEO is a Woman	300	0.10	0.30	0	0	0
CEO is a Physician	300	0.01	0.10	0	0	0
Board Characteristics						
Number of Board Members	300	16	11	11	14	17
Number of Employees on Board	296	1	1	0	1	1
Number of Physicians on Board	299	3	2	2	3	4
Number of Outside Board Members	300	12	10	8	10	13
CEO is Chair of the Board	300	0.07	0.25	0	0	0
CEO has Voting Rights on Board	300	0.54	0.50	0	1	1
Hospital Characteristics						
Total Assets (in millions)	300	113.02	168.05	24.11	61.12	135.95
Return on Assets	300	0.03	0.05	0.01	0.04	0.06
Hospital Casemix	273	1.28	0.20	1.14	1.25	1.35
Hospital is not Part of a System	300	0.82	0.38	1	1	1
Hospital has a Religious Affiliation	300	0.02	0.13	0	0	0
Market Characteristics						
Population Density	296	638	1421	49	120	403
Per Capita Income (in thousands)	296	25.91	6.63	21.82	24.67	28.28
Number of Hospitals	296	5	12	1	2	4

remaining seats. In 54 percent of the hospitals, the CEO has full voting rights on the board¹⁷ and in 7 percent of the hospitals the CEO is also the Chairman of the Board.

The median hospital in our sample has \$61 million in assets, is neither part of a system, nor a religious order, and earns a 4 percent return on assets. The median hospital faces only one competitor in a market with a per capita income of \$24,670 and a population density of 120 persons per square mile.

We compare our sample of hospitals to the population of nonprofit hospitals filing IRS 990 forms.¹⁸ Our sample hospitals tend to be larger than the population of nonprofit hospitals with a median asset size of \$61 million compared with a median of \$20 million in the population. Our hospitals also differ from the population in that they are less likely to be part of a religious organization or a hospital system (system hospitals often fail to meet our criterion that the board has independent authority on executive compensation). Our hospitals have similar median performance with a return on assets of 4 percent, compared with the population median of 3.4 percent. The geographic distribution (based on the nine census regions) of our sample closely resembles that of the hospital population as a whole.

5. Results

We report our empirical results in three subsections. First, we examine the association between CEO voting rights and *cash* compensation. Next we consider total

¹⁷ Full voting rights do not imply that the CEO votes on his/her own compensation. Some states preclude this action. In other cases the CEO may voluntarily abstain from the vote. We do not have data on whether the CEO votes on his/her compensation package. Voting rights should be thought of as a measure of the manager's overall decision authority on the board and not as specific power to vote on his/her own compensation.

¹⁸ For the purposes of this comparison we identify nonprofit hospitals as being those organizations classified in the National Taxonomy of Exempt Entities (NTEE) Classification System as E22.

compensation, which includes both cash and non-cash compensation (such as insurance benefits). We end by discussing our un-tabulated findings on the association between CEO compensation and other governance variables, such as whether the CEO is also Chairman of the Board.

5.1 Cash Compensation

Table 2 presents four estimated regression models. In each model, the dependent variable is the natural logarithm of cash compensation received by the CEO in the year. The primary variable of interest is the dummy variable equal to one when the CEO is a voting member of the board.

Model 1's specification is based on previous studies of CEO compensation in for-profit firms. Control variables include the natural logarithm of total assets and return on assets (ROA) for the observation year. Virtually all past studies of CEO pay in the for-profit sector control for organizational size. Many past studies also control for financial performance (stock returns and/or ROA).

The other three models sequentially add controls for hospital, market and CEO characteristics. These controls are also based on various past studies of executive pay, as well as on wage regressions contained in the labor economics literature.¹⁹ The hospital's case-mix index is included as a control for the complexity of the job. Population density, per-capita income, the number of hospitals in the county and regional dummies are added to control for market factors that potentially affect compensation. CEO-specific controls include age, tenure as CEO, tenure with the hospital and sex. Since sample size

¹⁹ See footnote 9.

TABLE 2
**OLS REGRESSION OF LOG OF CEO CASH COMPENSATION ON HOSPITAL,
MARKET AND CEO CHARACTERISTICS**

Table 2 presents four OLS regressions of the log of CEO cash compensation on hospital, market, and CEO characteristics. The sample is restricted to short-term acute care nonprofit hospitals. CEO cash compensation is taken from column C of IRS form 990 Part V: "Compensation of Officers and Directors". The observations are for the period 1998-2000. The voting rights of the CEO are obtained from the bi-annual Governance Institute Survey. Hospital size and ROA are from IRS Form 990. Market characteristics are from the Area Resource File. CEO characteristics are from the Academy of Health Care Executives' (ACHE) online affiliate directory. Regional controls include a dummy variable corresponding to one of the eight census regions of the United States. T-statistics are in parentheses.

	N	Model 1 299	Model 2 272	Model 3 268	Model 4 193
Intercept		5.402 *** (20.81)	5.533 *** (17.94)	6.108 *** (17.56)	5.775 *** (13.47)
CEO has voting rights		0.106 *** (3.02)	0.085 ** (2.34)	0.059 (1.6)	0.096 ** (2.3)
Hospital Characteristics					
Log of Assets		0.375 *** (25.13)	0.352 *** (15.18)	0.301 *** (11.66)	0.287 *** (9.66)
Return on Assets		0.330 (1.05)	0.389 (1.19)	0.623 * (1.9)	0.794 ** (2.16)
Hospital Casemix Index			0.228 * (1.79)	0.223 * (1.75)	0.312 ** (2.11)
Market Characteristics					
Log of Population Density				0.037 ** (2.06)	0.042 * (1.94)
Per Capita Income (in thousands)				0.008 ** (2.42)	0.004 (1.28)
Number of Hospitals in County				0.000 (0.13)	0.007 (1.11)
Regional Controls				Y	Y
CEO Characteristics					
CEO Age					0.009 *** (2.69)
Tenure as CEO					0.013 *** (2.88)
Tenure with Hospital					-0.010 *** (-3.06)
CEO is a Woman					-0.058 (-0.86)
<i>Adjusted R-Squared</i>		0.737	0.730	0.750	0.759

* Statistically significant at the .10 level in two-tailed tests

** Statistically significant at the .05 level in two-tailed tests

*** Statistically significant at the .01 level in two-tailed tests

systematically decreases as we add controls, there is a tradeoff between using more controls versus having a large sample size.

The estimated coefficients for the voting rights variable are positive and significant in three of the four models the .05 level or higher. The magnitude of the estimated coefficients is relatively stable across the four models ranging from .059 to .106. The coefficients from Model 1 and Model 4, which are estimated with the largest number of observations and with the most controls (respectively), are very close in magnitude. The coefficients from these two models indicate that CEO voting rights are associated with about a 10 percent increase in compensation. This translates into \$18,718 for the median CEO in our sample with cash compensation of \$187,180.

The signs on the various control variables are generally as one might expect. The significance levels of the coefficients, vary across variables and models. Consistent with past studies, the association between compensation and size is positive. Compensation is also positively associated with the case-mix index (a measure of hospital complexity), hospital financial performance, population density and per capita income, CEO age and tenure in the position. The association between compensation and the overall tenure with the hospital is negative.

5.2 Total Compensation

CEOs receive various benefits in addition to cash compensation. Typical non-cash forms of compensation include deferred compensation, contributions to employee retirement plans, health benefits, and other fringe benefits (including the use of a company car). While the instructions for the 990 form specify the items that must be reported, organizations have discretion in completing the forms. For example, they can

use “reasonable estimates” when precise figures are not available. Firms also have discretion in choosing whether to report accrued compensation (income earned during the period but not paid) as either cash or deferred compensation.

We define total compensation as the sum of all forms of compensation reported by the hospital. Total compensation has a potential advantage over cash compensation for our purposes since it is a potentially more complete measure of executive compensation. On the other hand, cross sectional differences in benefit estimation and missing values for non-cash compensation potentially weaken the power of our statistical tests.

Table 3 presents estimates of four regression models. The models are the same as in Table 2 except that total compensation (natural logarithm) replaces cash compensation as the dependent variable. The estimated coefficients are positive in all four models. Three of the coefficients are significant at the .10 level or higher, while the coefficient from Model 3 is not significant at conventional levels. The magnitude of the coefficients is similar to the magnitude of the estimated coefficients for cash compensation. These coefficients range from .055 to .087. Models 1 and 4 (with the most observations and controls, respectively) indicate that CEO voting rights is associated with about a 7 or 9 percent increase in total compensation.

5.3 Other Governance Variables

Our focus on CEO voting rights is motivated by the claims in the existing literature that it is important to separate the board and internal managers in nonprofit organizations. We also believe that managerial voting rights are more likely to be predetermined with respect to the existing CEO than other board related variables, such

TABLE 3
**OLS REGRESSION OF LOG OF CEO TOTAL COMPENSATION ON HOSPITAL,
MARKET AND CEO CHARACTERISTICS**

Table 3 presents four OLS regressions of the log of CEO total compensation on hospital, market, and CEO characteristics. The sample is restricted to short-term acute care nonprofit hospitals. CEO total compensation is the sum of columns C-E of IRS Form 990 Part V: "Compensation of Officers and Directors". The observations are for the period 1998-2000. The voting rights of the CEO are obtained from the bi-annual Governance Institute Survey. Hospital size and ROA are from IRS Form 990. Market characteristics are from the Area Resource File. CEO characteristics are from the Academy of Health Care Executives (ACHE) online affiliate directory. Regional controls include a dummy variable corresponding to one of the eight census regions of the United States. T-statistics are in parentheses.

	N	Model 1 278	Model 2 251	Model 3 247	Model 4 180
Intercept		4.872 *** (16.72)	5.075 *** (14.37)	5.936 *** (15.02)	5.261 *** (11.13)
CEO has voting rights		0.087 ** (2.25)	0.072 * (1.8)	0.055 (1.34)	0.073 * (1.65)
Hospital Characteristics					
Log of Assets		0.410 *** (24.48)	0.377 *** (14.13)	0.310 *** (10.53)	0.315 *** (9.75)
Return on Assets		0.398 (1.14)	0.508 (1.39)	0.852 ** (2.31)	0.904 ** (2.26)
Hospital Casemix Index			0.311 ** (2.13)	0.316 ** (2.17)	0.282 * (1.75)
Market Characteristics					
Log of Population Density				0.050 *** (2.52)	0.055 ** (2.43)
Per Capita Income (in thousands)				0.005 (1.49)	0.003 (0.88)
Number of Hospitals in County				0.002 (1.13)	0.005 (0.66)
Regional Controls					
CEO Characteristics					
CEO Age					0.012 *** (3.29)
Tenure as CEO					0.015 *** (3.16)
Tenure with Hospital					-0.011 *** (-3.3)
CEO is a Woman					-0.035 (-0.48)
<i>Adjusted R-Squared</i>		0.7382	0.7308	0.7527	0.772

* Statistically significant at the .10 level in two-tailed tests
** Statistically significant at the .05 level in two-tailed tests
*** Statistically significant at the .01 level in two-tailed tests

as or composition. Nevertheless, for completeness we provide a brief discussion of our evidence on the marginal importance of other board-related governance variables that have been examined in past work on the for-profit sector..

We re-estimate the models in Table 2 (retaining our dummy variable for CEO voting rights) sequentially including and removing board size, the percentage of inside directors²⁰ and a dummy variable equal to one if the CEO is also the Chairman of the Board as an added variable.²¹ The marginal effect of hospital board size is positive in all models and statistically significant in Models 1 and 2. The percentage of inside directors is positive and significant in Model 1, positive though insignificant in Models 2 and 3, and negative and insignificant in Model 4. Finally the effect of the CEO serving as the chair²² of the hospital board is positive but insignificant in all four models. The inclusion of these additional governance variables has no qualitative impact on the magnitude or significance on the coefficient of CEO voting rights. Generally the signs on these other variables are consistent with the findings in other papers on the for-profit sector.²³

6. Summary

Previous authors (e.g., Fama and Jensen (1983)) have argued that it is important for nonprofit organizations to limit internal managements' participation as board members. This paper provides evidence on this argument by examining whether the level of CEO compensation in nonprofit hospitals is affected by having the CEO serve as a voting member of the board of directors.

²⁰ We apply the IRS definition of hospital board insiders which classifies physicians who serve on the board as insiders, regardless of whether they are a member of the hospital medical staff.

²¹ These variables are positively correlated.

²² There are only 19 CEOs who are also board chairs in our sample.

²³ See Bebchuck, L. and J. Fried, (2003) for a summary of these results

We find that after controlling for economic factors that are expected to affect CEO compensation, that CEO pay is approximately 10 percent higher in firms where the CEO is a voting member of the board. This finding is consistent with hypothesis that nonprofit boards do a better job at controlling managerial agency problems when they are more independent of top management.

While our results are highly suggestive, a caveat is in order. Governance decisions (such as managerial voting rights) are not exogenous; they are policy choices. It is possible that omitted factors that drive particular governance choices also affect CEO compensation. Thus our documented correlation between compensation and voting rights is not necessarily causal. While the homogenous nature of our sample and level of controls result in fewer concerns about omitted variables and endogeneity than in many past studies, we cannot completely rule out alternative interpretations of the results. Thus, while the results are consistent with the “excessive compensation hypothesis,” appropriate care should be taken in interpreting the results.

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