



# Nonprofit executive incentive pay

Steven Balsam<sup>1</sup> · Erica E. Harris<sup>2</sup>

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## Abstract

We utilize information only recently disclosed on Form 990 to examine the use, and consequences of, incentive pay at nonprofit organizations. Bonuses are common in nonprofits, as we observe that approximately 45% of the 44,000 organization-year observations in our sample reported paying CEO bonuses. We find that the bonuses are positively associated with profitability, competition from other nonprofits, firm size, available cash, and use of compensation consultants and committees, while negatively related to board oversight, donations, and grants. Our results also suggest that donors look unfavorably at the payment of bonuses; that is, bonuses are associated with lower future donations. Nonetheless, we find evidence consistent with the payment of bonuses incentivizing nonprofit executives, as despite reduced fundraising, future profitability and program services are positively associated with current bonus compensation.

**Keywords** Nonprofit · Executive compensation · Incentive compensation · Determinants of executive incentive compensation in nonprofits · Consequences of executive incentive compensation in nonprofits

## 1 Introduction

Research (Baber et al. 2002; Brickley and Horn 2002; Frumkin and Keating 2010; Hallock 2002; Sedatole et al. 2015) has examined the relationship between pay and performance in nonprofit organizations. However, prior to 2008, nonprofits were not

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✉ Steven Balsam  
drb@temple.edu

Erica E. Harris  
erica.harris@villanova.edu

<sup>1</sup> Fox School of Business, Temple University, 1801 Liacouras Walk, Philadelphia, PA 19122, USA

<sup>2</sup> Villanova School of Business, Villanova University, 800 East Lancaster Avenue, Villanova, PA 19085, USA

required to separately report incentive compensation. As a result, studies were forced to infer the use of incentive pay. Using detailed compensation data now available on Form 990 Schedule J, we test the determinants and consequences of incentive compensation in the nonprofit sector. Specifically, our objectives are to understand the setting in which bonuses are paid as well as the impact of bonus pay on nonprofits' ability to attract donations and provide for future profitability.<sup>1</sup>

The nonprofit sector provides a unique setting to study incentive compensation. Given the inability to reduce agency conflicts via equity compensation, nonprofit boards are primarily limited to cash bonuses to provide managers with the incentives necessary to run effective operations.<sup>2</sup> However, these monetary incentives are controversial in light of the scrutiny nonprofit executive pay has received from both governmental agencies (Internal Revenue Service 2008; Panel on the Nonprofit Sector 2005) and donors (Olson 2007; Buettner 2011; Balsam and Harris 2014).

Employing a sample of over 44,000 observations over five years, we find that larger, more profitable organizations with greater available cash are more likely to use incentive compensation and pay larger bonuses, while those that receive more donations and grants award fewer and smaller bonuses.<sup>3</sup> We also observe that bonuses are higher for nonprofits in industries with more competition from other nonprofits, and lower for organizations classified as more charitable in nature. Further, we document that bonus pay is related to the organizations' compensation setting policies as well as its monitoring environment. In particular, the use of compensation consultants and existence of designated compensation committees are associated with a higher likelihood of paying a bonus as well as higher bonus pay, while the requirement for board approval, as well as the existence of independent directors, are associated with lower likelihood of paying, and paying smaller bonuses.

In addition to understanding the determinants of nonprofit bonus pay, we examine the consequences of bonus pay on both fundraising and future profitability. Overall, we find that future donations and grants are negatively associated with bonuses, although we find evidence consistent with more sophisticated donors viewing bonuses positively. However, even considering reduced outside support, we find that future profitability and program services are positively related to nonprofit bonus pay. Our results are robust to a myriad of alternative formulations and sensitivity tests.

We proceed as follows. Section II includes background and hypothesis development, section III our model specifications, section IV our sample selection procedures, and section V our empirical analysis. We present additional analyses in section VI and our conclusions in section VII.

<sup>1</sup> While nonprofits do not have or report "profits" in the traditional sense, we measure profitability as the excess of revenues over expenses in a given fiscal year.

<sup>2</sup> Incentives can also arise from increases in base salary. However, in addition to increasing fixed costs, it is unclear whether a potential raise in base pay provides the same incentives as a bonus (Kahn and Sherer 1990).

<sup>3</sup> This latter finding that higher donations and government grants are associated with lower bonuses seems counterintuitive; i.e., it appears the CEO is penalized for fundraising. We note that we are merely showing an association, not establishing causation, and that this result is consistent with charitable organizations (those more reliant on funding from donations) paying lower bonuses. Consistent with this explanation, in additional untabulated analyses, we find that this association only holds in two of our six industry classifications, religion and "other," i.e., the more charitable industries.

## 2 Background

### 2.1 Use of incentive pay

Unlike publicly traded for-profit firms, nonprofit organizations are not required to file financial or proxy statements with the Securities and Exchange Commission. Rather, to maintain their tax exempt status they are required to annually file Form 990 with the Internal Revenue Service (IRS). In 2008, Form 990 was revised to include Schedule J, entitled *Compensation Information*, which requires that nonprofits provide information about how executive compensation is determined, as well as disclose the components of that compensation, including bonuses.<sup>4</sup>

Research on executive compensation, and its impact on performance, is a mainstay of for-profit accounting, economics, finance, and management research. Whereas much of this literature derives from agency theory (e.g., Jensen and Meckling 1976) and the use of incentive compensation to resolve the owner-manager conflict, a competing line of research (e.g., Bebchuk and Fried 2004a) argues that observed executive compensation is not an equilibrium outcome, but rather the result of managerial power or rent extraction. Empirically, researchers have endeavored to explain the determinants of compensation (Jensen et al. 1990b; Murphy 1985; Tosi et al. 2000), as well as optimal compensation structure (Jensen et al. 1990a).

In contrast, there is much less research on executive compensation in the nonprofit literature. Examples include Oster (1998), Baber et al. (2002), Brickley and Horn (2002), Hallock (2002), Frumkin and Keating (2010), and Sedatole et al. (2015). However, because these papers all use data that predate the 2008 Form 990 revision, they cannot directly examine the use of bonus compensation in nonprofits.<sup>5</sup> Rather, by using various independent variables to explain total compensation, they indirectly study the use of pay for performance.

In addition to the paucity of nonprofit research in this area, there are significant differences between for-profit and nonprofit entities which could impact the use and effectiveness of incentive compensation. In particular, the lack of ownership rights in a nonprofit organization may accentuate agency problems, because equity compensation and ownership requirements, which are used to reduce this conflict by aligning the incentives of managers and owners (Core et al. 2002), are unavailable. Therefore, out of necessity, cash incentives play a larger role in nonprofit compensation packages. However, nonprofits must also avoid both the “private inurement” and “excess compensation” provisions of Internal Revenue Code sections 501(c)(3), 4941, and 4958. These provisions prohibit nonprofits from

<sup>4</sup> Not all nonprofits are required to provide this additional information. For example, only nonprofits with at least one executive earning more than \$150,000 would generally be required to file Schedule J.

<sup>5</sup> While papers using publicly disclosed data were subject to this limitation, others, such as Ballou and Weisbrod (2003) and Erus and Weisbrod (2003), which rely on survey data, were not. However, those papers are more concerned with compensation differences between for-profit and nonprofit hospitals, and then within different types of nonprofit hospitals, and less concerned with the relationship between pay and performance. For example, Ballou and Weisbrod (2003) find that the amount of bonus is positively associated with a hospital disclosing that it considered financial performance in its determination, but do not investigate the metric used, nor the relationship between the metric and bonus.

simply distributing net profits to managers and require managerial compensation to be reasonable.<sup>6</sup>

While causing some control problems, the lack of a residual claimant is an advantage to nonprofits in attracting donations. As the non-distribution constraint prohibits nonprofit organizations from distributing net profits to managers, donors are more likely to trust that their donations will reach the intended recipients (Hansmann 1980). Payment of incentive compensation or bonuses may therefore be seen as violating that constraint and consequently lead to lower levels of donations. While not examining incentive compensation per se, Balsam and Harris (2014) provide evidence that donors withhold contributions to nonprofits following the disclosure of high compensation. Nonprofits are also subject to significant regulation at the state and federal levels, including penalties for excess compensation, which could be triggered by the payment of incentive compensation.<sup>7</sup>

In addition to impacting the form of incentive compensation, the lack of a residual claimant or owner clouds the issue of whose interests' nonprofit managers should be aligned with. Nonprofits have a variety of stakeholders that include beneficiaries, donors, employees, and volunteers. Should managers' incentives be aligned with the interests of the recipients of their goods or services? Or should they be aligned with the interests of donors? While donors are more likely to give to organizations whose mission is consistent with their values or concerns, recipients and donors can desire differing outcomes. For example, while a donor to a homeless shelter cares about providing a safe place for recipients to live in, he or she may want to construct a facility to house the homeless (perhaps with his or her name over the door), while the homeless person wants housing immediately. The donor's approach, if followed, requires the accumulation of assets, that is an excess of revenues over expenses or net income, while the recipients' approach does not. We emphasize that this does not mean that donors are not concerned about the nonprofit fulfilling its mission. Rather, we suggest that they are also concerned with the long-term financial viability of the organization and would therefore incentivize the accumulation of assets. We of course acknowledge that donors do not want to see too much accumulation; that is, they'll stop donating if they don't see a need (Marudas 2004).

We believe the board of directors, which controls incentive setting, is likely to be more aligned with the interests of donors than recipients. This is supported by the fact that most nonprofits require that board members donate as part of their service (O'Regan and Oster 2005). Further, Aggarwal et al. (2012, p. 467) suggest that "directors join the board because they value the right to direct the organization to pursue the goals of stakeholders that they represent or activities that they privately value."

In addition to control differences between for-profit and nonprofit firms, measures of performance also differ substantially. Primary measures of performance in the for-profit

<sup>6</sup> The IRS defines reasonable compensation as: "the value that would ordinarily be paid for like services by like enterprises under like circumstances. Reasonableness is determined based on all the facts and circumstances." (<http://www.irs.gov/Charities-%26-Non-Profits/Exempt-Organization-Annual-Reporting-Requirements-Meaning-of-Reasonable-Compensation>).

<sup>7</sup> The IRS does not prohibit the payment of bonuses, i.e., prohibitions against the use of incentive pay systems were removed in 1980 (IRS Counsel Memorandum 38,283, Revenue Ruling 8,122,068). However, payments of large bonuses could be deemed excessive pay by the IRS.

literature are market- and accounting-based. Market measures, that is, stock returns, do not exist in the nonprofit sector, and many argue that profits are not an appropriate performance measure for nonprofits. For example, Leone and Van Horn (2005) argue that nonprofits do not seek to maximize profits; rather, they aim to make small profits and to avoid losses. Krishnan et al. (2006, p. 401) suggest: “To instill trust in the recipient, the providing firm uses the nonprofit form of organization to provide a signal that the firm is not interested in profit maximization, but rather is working to maximize the recipients’ welfare.” Sedatole et al. (2015) go further, suggesting that nonprofits provide incentives to CEOs to expend residual income to increase charitable services and avoid violating the non-distribution constraint, which they assert requires long-run breakeven.

Nevertheless, nonprofits need to maintain a financial cushion, for example, rainy day fund or precautionary savings, to smooth out expenditures (Fisman and Hubbard 2003; Fisman and Hubbard 2005), as well as accumulate resources to acquire capital assets (Eldenburg and Krishnan 2003). Ballou and Weisbrod (2003, p. 1913) provide evidence consistent with hospitals being more likely to reward financial performance than quality of care because of the “difficulties inherent in measuring quality,” and Brickley and Van Horn (2002) find that nonprofit hospitals tie rewards to profitability. We find approximately 56% of organizations represented in the 2012 CORE File maintained by the National Center for Charitable Statistics (NCCS) were profitable, and aggregate net income across both profitable and unprofitable nonprofits was \$91 billion.<sup>8</sup>

Ultimately it becomes an empirical question as to whether nonprofit executives are rewarded for profits. Providing evidence on this issue is a focus of our study and leads to our first formal hypothesis.

*H1: Bonus pay is associated with profitability.*

The possibility exists that nonprofit executives are rewarded based on *other* performance measures, either in addition to, or instead of, profitability. Based on prior literature, we test whether efficiency and revenue generation also influence nonprofit bonus pay. Building on Frumkin and Keating (2010), who document that pay is negatively associated with the ratio of administrative to total expenses, we examine whether bonuses are associated with administrative efficiency. Other nonprofit research (Oster 1998; Baber et al. 2002; Frumkin and Keating 2010; Aggarwal et al. 2012; Galle and Walker 2014; Gaver and Im 2014; Sedatole et al. 2015) has examined the relationship between revenue generation and compensation finding mixed results. Consequently, we examine the association between bonuses and the three primary forms of nonprofit revenues: direct donations, government grants, and program service revenues. In sum, we test the relationship between bonus pay and administrative efficiency, direct donations, government grants, and program service revenues as alternative performance metrics, which culminates in our second hypothesis.

<sup>8</sup> These percentages are consistent with Chang and Tuckman (1990), who find that the majority of organizations in their sample reported surpluses, and very few had surpluses close to zero. They are also consistent with Yetman (Yetman 2001, p. 298), who documents that nonprofits report “aggregate profits of over \$50 billion on their tax-exempt activities.”

*H2: Bonus pay is associated with performance measures other than profitability.*

Murphy and Zabojnik (2004, p. 196), in discussing trends in CEO pay, argue that market forces “are of first-order importance.” While nonprofits may attract individuals who are less driven by extrinsic rewards, for example, labor donation (Handy and Katz 1998), in most cases they must provide pay packages that are competitive with individuals’ other job opportunities. Balsam and Harris (2014, p. 428) assert that nonprofits “compete with other organizations for employee and executive talent.” For-profit research finds that competition leads to increased incentives (Raith 2003; Karuna 2007). In particular, Karuna (2007) finds that firms provide managers with stronger incentives when industry competition is greater. Raith (2003) also documents that firms with more competition, due to larger markets, provide stronger incentives to their managers to reduce costs. Building on this work, we expect that nonprofit organizations operating in competitive environments will likewise increase executive incentives.

An empirical question is whether alternative employers include both nonprofit and for-profit entities, and whether these labor markets are distinct. Examining competition in the hospital industry, Erus and Weisbrod (2003, p. 133) provide mixed evidence as to whether product market competition leads nonprofits to “more closely emulate FPs in terms of use of bonus compensation.” While not directly examining this question, Roomkin and Weisbrod (1999) find that compensation practices differ between nonprofit and for-profit hospitals. Thus, while we believe that competing with other nonprofit organizations is likely to lead to higher and more performance-based compensation, we do not make a prediction on the effect of for-profit competition.<sup>9</sup> This leads to our third hypothesis.

*H3: Bonus pay is positively related to competition the nonprofit faces from other nonprofit organizations.*

In addition to our formal hypotheses, we identify and examine the impact of several additional economic and monitoring variables posited to play a role in setting incentive pay in the nonprofit sector. While we have expectations for how these variables impact bonuses, and discuss those expectations below; for brevity, we do not frame them as formal hypotheses. These variables include commonly used variables from the for-profit compensation literature, such as firm and board size, as well as variables unique to the nonprofit sector such as unrestricted cash. We also study six new variables included on Schedule J that are related to the compensation setting processes used at nonprofit organizations. Using these variables, our study aims to form a comprehensive understanding of the use of bonus pay in the nonprofit sector.

## **2.2 Impact of incentive pay on donor support**

In addition to understanding the determinants of nonprofit incentive compensation, we are also interested in its consequences. Studies of for-profit firms have examined the effects of compensation on future performance, for example, accounting and stock

<sup>9</sup> We do, however, control for for-profit competition in our empirical analyses.

returns (Core et al. 1999). In contrast, the one study that has examined the effect of compensation on nonprofit performance focused on its impact on donations (Balsam and Harris 2014). Petrovits et al. (2011, p. 332) argue that “donors generally have less information about the quality of the nonprofit organization’s output relative to government grantors, customers (who provide program service revenue), and creditors” and therefore may focus on other metrics, such as compensation, when deciding on whether to donate.

According to Emerson (2010, p. 1), donors “assume that charity leaders work for free or minimal pay and are shocked to see that they earn six figure salaries.” Consequently, donors may object to their contribution being used to reward executives, and may withhold or reduce future contributions as a result. Thus far, Balsam and Harris (2014) is the only study to examine this issue empirically, and, as with other prior nonprofit literature, they are limited to studying the impact of total compensation. While they provide some evidence that donors withhold contributions to nonprofits following the disclosure of high compensation, their findings are limited to nonprofits with sophisticated donors and nonprofits whose compensation is disclosed in the media.

This study extends Balsam and Harris (2014) by examining whether contributors weigh the form of compensation in deciding whether, and how much, to donate. Incentive compensation, in the form of bonuses, confirms that executives are not donating their labor, provides evidence consistent with the nonprofit being run like a business, and may signal to supporters that the nonprofit does not need contributions since it has funds with which to pay bonuses. In sum, we conjecture that donors react to the provision of bonus pay negatively, withholding future contributions to organizations that report the use of incentive compensation. This culminates in our fourth hypothesis.

*H4: Bonus pay is negatively related to future donations.*

### **2.3 Impact of incentive pay on future profitability**

We are also interested in the impact of incentive compensation on future nonprofit profitability. If incentive compensation reduces agency costs by aligning the interests of managers and stakeholders, and profits are the desired outcome, we should observe a positive association between incentive compensation and profitability. To the extent the executives’ bonus is not formula driven, for example, in our sample only 34% of our CEOs have written employment contracts, the incentives may not always be obvious ex ante. Rather, executives may have to infer future incentives from current compensation practices. Consequently, we examine the impact of the current period bonus payment on the following period’s profitability. While not yet examined by the nonprofit literature, a number of for-profit papers (Abowd 1990; Gerhart and Milkovich 1990; Hanlon et al. 2003; Kahn and Sherer 1990; Nyberg et al. 2016) have shown a positive association between incentive compensation and future performance. Based on these prior results, we posit a positive relationship between incentive pay and future performance. This culminates in our fifth and final hypothesis.

*H5: Bonus pay is positively related to future nonprofit profitability.*



### 3 Model specification

#### 3.1 Determinants of the use of incentive compensation

We begin by examining three measures of bonus payments in nonprofit organizations. *Bonus Indicator* is an indicator variable taking the value of one for organizations reporting non-zero bonus payments to their highest paid executive on Form 990, Schedule J. *Log Bonus* is the log level of bonus pay reported for the highest paid executive.<sup>10</sup>  $\Delta Bonus$  is defined as the log of the change in bonus pay for the highest paid executive, from the prior to the current year.

To provide a comprehensive understanding of nonprofit bonus pay, we organize our independent variables into two categories representing the economic and monitoring environment in which our sample organizations operate. While Table 1 contains detailed variable definitions, we briefly describe those variables here. Looking first at the economic factors, we include variables that proxy for profitability, efficiency, revenue sources, competition, charitable nature, and size. We measure profitability using three alternative metrics, *Log Net Income*, which is calculated as the natural log of the difference between total revenues and total expenses; return on assets, which is calculated as net income scaled by total assets; and operating margin, which is net income scaled by total revenues. As discussed above, we also test the following additional performance measures: administrative efficiency, direct donations, government grants, and program service revenue. We measure *Administrative Efficiency*, following Frumkin and Keating (2010), as one, less administrative expenses/total expenses, so that a higher ratio indicates more efficient operations. Direct donations, government grants, and program service revenues are simply the natural logs of the amounts reported on Form 990.

We hypothesize that competition for executive services from other nonprofits can influence the payment of bonuses. While our expectation is that competition for executive services will drive up the price of those services, that is, lead to higher bonuses, our predictions are tempered by the fact that we cannot directly measure labor market competition.<sup>11</sup> Instead, our measures of competition encompass both the competition for executive services, as well as for customers. We define *Nonprofit competition* as the number of nonprofits headquartered within a given metropolitan statistical area (MSA) that are in the same industry classification, based on National Taxonomy of Exempt Entities (NTEE), and same size quartile.<sup>12</sup> As a control, we include *For-profit competition*, which we define similarly. However, given the relatively low frequency of for-profit competitors, we defined our measure as the number of for-profit organizations in the same industry, based upon the North American Industrial Classification System (NAICS), and size quartile; that is, we do not use MSA. Organization size is

<sup>10</sup> The use of a log transformation is common in the compensation literature to mitigate skewness. See for example Guojin et al. (2011).

<sup>11</sup> In our additional analysis we get closer to measuring the competition for executive services by using the actual incentive compensation paid by competing organizations. However, because of the ensuing reduction in sample size, e.g., not all competing organizations file schedule J, we do not use that variable in our primary analysis.

<sup>12</sup> This measure is a refinement of that used by Deng and Gao (2013). To identify competing nonprofit organizations, we use the NCCS CORE file that includes a comprehensive cross-section of 501(c)(3) organizations. To identify for-profit organizations we use the NCCS NTEE/NAICS/SIC crosswalk compiled by the National Center for Charitable Statistics, which we obtained from <http://nccsdataweb.urban.org/kbfiles/786/xwalka.pdf> on October 20, 2014.



**Table 1** Variable definitions

<i>Bonus Indicator</i>	= 1 for organizations reporting nonzero incentive compensation, 0 otherwise
<i>Log Bonus</i>	Log of highest paid executive's incentive compensation
$\Delta$ Bonus	$\text{Log}(\text{Bonus}_t - \text{Bonus}_{t-1})$
<i>Bonus / Total Compensation</i>	Incentive compensation/ <i>Total Compensation</i>
<i>Bonus / Salary</i>	Incentive compensation/base compensation
<i>Bonus Squared</i>	$(\text{Log Bonus})^2$
<i>Excess Bonus</i>	$\text{Log Bonus} - (\text{industry, size mean Log Bonus})$
<i>Log Salary</i>	Log of highest paid executive's base compensation
<i>Salary / Total Compensation</i>	Base compensation/total compensation
<i>Excess Salary</i>	$\text{Log Salary} - (\text{industry, size mean Log Salary})$
<i>Log Other Compensation</i>	Log of (total compensation less incentive compensation less based compensation)
<i>Excess Other Compensation</i>	$\text{Log Other Compensation} - (\text{industry, size mean Log Other Compensation})$
<i>Log Total Compensation</i>	Log of highest paid executive's total compensation
<i>Log Net Income</i>	Log of (total revenues – total expenses)
ROA	(Total revenues – total expenses)/total assets
<i>Operating Margin</i>	(Total revenues – total expenses)/total revenues
<i>Log Management and General Expenses</i>	Log of management and general expenses
<i>Program Service Expenses</i>	Program service expenses/total revenues
<i>Log Fundraising Expenses</i>	Log of fundraising expenses
<i>Administrative Efficiency</i>	1- (administrative expenses/total expenses)
<i>Log Direct Donations</i>	Log of direct donations
<i>Log Government Grants</i>	Log of government grants
<i>Log Program Service Revenues</i>	Log of program service revenues
<i>Nonprofit competition</i>	Log of frequency of organizations in same metropolitan statistical area (MSA)/industry/size quartile combination as sample firm, where industry is measured using NTEE and size is measured by total assets
<i>For-profit competition</i>	Log of frequency of organizations in same industry/size quartile combination as sample firm, where industry is measured using NAICS and size is measured by total assets
<i>Log Total Assets</i>	Log of year-end total assets
<i>Charitable</i>	= 1 for organizations reporting above sample median ratio of direct donations/total revenues, 0 otherwise
<i>Written employment contract</i>	= 1 for organizations reporting the use of a written employment contract, 0 otherwise
<i>Compensation committee</i>	= 1 for organizations reporting the use of compensation committee, 0 otherwise
<i>Board approval</i>	= 1 for organizations reporting that the board or compensation committee is responsible for approving executive compensation, 0 otherwise
<i>Compensation consultant</i>	= 1 for organizations reporting the use of a compensation consultant to set executive compensation, 0 otherwise
<i>Compensation survey</i>	= 1 for organizations reporting the use of a compensation survey to set executive compensation, 0 otherwise
<i>Other 990 Compensation Comparison</i>	= 1 for organizations reporting the use of other Form 990 s to set executive compensation, 0 otherwise
<i>Log Board Size</i>	Log of total voting board members
<i>Percentage of Independent Directors</i>	Independent board members/board size
<i>Log Unrestricted Cash</i>	Log of (total cash plus savings and temporary cash investments – permanently and temporarily restricted net assets)

**Table 1** (continued)

<i>Y</i>	$= (\text{Total assets}_t - \text{permanently restricted net assets}_{t-1}) / (\text{total expenses}_{t-1} - \text{fundraising expenses}_{t-1})$
<i>Sophisticated donors</i>	$= 1$ for organizations with above sample median total temporarily and permanently restricted donations, $0$ otherwise
<i>Age</i>	Number of years since organization filed for 501(c)(3) status
<i>Leverage</i>	$= \text{Total liabilities} / \text{total assets}$
<i>Readmission Rate for Heart Attack</i>	Log of the Medicare 30-day readmission rate for patients suffering heart attack
<i>Readmission Rate for Heart Failure</i>	Log of the Medicare 30-day readmission rate for patients suffering heart failure
<i>Readmission Rate for Pneumonia</i>	Log of the Medicare 30-day readmission rate for patients suffering from pneumonia
<i>Retention Rate</i>	Ratio of students that re-enroll in the next semester divided by the total cohort minus any allowable exclusions
<i>Enrollment Rate</i>	Log of the total number of students enrolled for credit in the fall of the academic year
<i>Graduation Rate</i>	Ratio of total number of students completing their program within 150% of normal time divided by the total cohort minus any allowable exclusions
<i>Percent Admitted</i>	Ratio of admissions to applications
<i>Number of Completions</i>	Log of the total number of bachelor's degrees completed by the institution during the fiscal year ended
<i>Award Levels</i>	$= 1$ for universities offering only bachelor's degree programs, $= 2$ for universities offering bachelors' and masters' degrees, $= 3$ for universities offering bachelors', masters', and doctoral degrees

captured using *Log Total Assets*, also as reported on Form 990. We expect that organizations more reliant on donations, those more *Charitable* in nature, will be less likely to pay bonuses (or pay smaller bonuses) than more commercial nonprofits. We define *Charitable* equal to one for sample organizations with an above median ratio of donations to total revenues following Balsam and Harris (2014).

Jensen and Meckling (1976) argue that an inability to monitor managers effectively leads principals to rely on contingent compensation, such as bonuses, to align incentives.<sup>13</sup> To examine whether there is a relation between monitoring and the use of incentive compensation, we incorporate measures newly disclosed on the revised Form 990, relating to the setting of compensation, for example, the establishment of a compensation committee, existence of a written employment contract, approval of compensation by the board or compensation committee, employment of an independent compensation consultant, use of a compensation survey or study, and reference to Form 990 s of other organizations. Nonprofits only disclose whether they use any of the aforementioned compensation-setting measures, and are not limited to using only one. Consequently, we operationalize these disclosures by coding individual responses as one if the organization reports the use of that mechanism and zero otherwise. As there is no prior literature on the impact of these variables, we make no prediction on their relationship with bonus.

<sup>13</sup> A counter argument, however, is that contingent compensation is only effective if the principal, in this case the board, can monitor the performance metrics and how they are being measured.

We also incorporate two monitoring variables not specific to compensation, but that also proxy for the organization's monitoring environment: board size and percentage of independent board members. For-profit literature (Hermalin and Weisbach 1998) suggests that independent directors are likely to be better monitors, while the literature on board size is mixed as to whether larger boards are better at monitoring (Yermack 1996; Coles et al. 2008; Boone et al. 2007; Linck et al. 2008). As a result, while we expect board independence to be inversely related to *Log Bonus*, we do not predict the sign of the association between board size and *Log Bonus*.

Finally, we include *Log Unrestricted Cash* and *Log Salary* as independent variables. Drawing on Core et al. (2006), who find that nonprofits with excess endowments pay higher compensation, we suggest that nonprofits with large amounts of unrestricted cash are more likely to pay, and pay higher, bonuses. We have no expectations for the coefficient on *Log Salary*. While nonprofits need to pay equilibrium compensation, some may be reluctant to use the term bonus. Those nonprofits will pay a higher salary and a smaller bonus, or no bonus at all, resulting in a negative correlation between *Log Salary* and *Log Bonus*. Alternatively, to the extent that both high salary and bonus result from managerial rent extraction (Bebchuk and Fried 2004a), we could observe a positive correlation. Consequently, we include *Log Salary* as an independent variable but do not predict its sign.

We also include industry and year fixed effects to control for variations in industry and economic conditions present in our sample. Finally, we use the natural log of all continuous non-ratio variables, winsorize all variables at the first and 99th percentiles to mitigate the influence of outliers, and cluster standard errors by nonprofit. For our *Bonus Indicator* model, we use a logistic regression. However, for our *Log Bonus* and  $\Delta$  *Bonus* test variables, we employ a Tobit model, as the dependent variable, *Log Bonus*, is bounded from below at zero.<sup>14</sup> In sum, our model stated formally is.

$$\begin{aligned} \text{Bonus Measure}_i = & \beta_0 + \beta_1 \text{Profitability Measure}_i + \beta_2 \text{Administrative Efficiency}_i + \beta_3 \text{Log Direct Donations}_i \\ & + \beta_4 \text{Log Government Grants}_i + \beta_5 \text{Log Program Service Revenues}_i + \beta_6 \text{Nonprofit Competition}_i \\ & + \beta_7 \text{For-Profit Competition}_i + \beta_8 \text{Log Total Assets}_i + \beta_9 \text{Charitable}_i \\ & + \beta_{10} \text{Written Employment Contract}_i + \beta_{11} \text{Compensation Committee}_i + \beta_{12} \text{Board Approval}_i \\ & + \beta_{13} \text{Compensation Consultant}_i + \beta_{14} \text{Compensation Survey}_i \\ & + \beta_{15} \text{Other 990 Compensation Comparison}_i + \beta_{16} \text{Log Board Size}_i \\ & + \beta_{17} \text{Percentage of Independent Directors}_i + \beta_{18} \text{Log Unrestricted Cash}_i + \beta_{19} \text{Log Salary}_i \\ & + \text{Industry fixed effects} + \text{Year fixed effects} + \varepsilon \end{aligned} \quad (1)$$

where *Bonus Measure* is alternatively defined as *Bonus Indicator*, *Log Bonus*, and  $\Delta$  *Bonus*; and *Profitability Measure* is either *Net Income*, *ROA*, or *Operating Margin*.

### 3.2 Impact of incentive compensation on donations

To examine the impact of incentive compensation on donations, we employ five permutations of our test variable: *Log Bonus*, *Bonus/Total Compensation*, *Bonus/Salary*, *Bonus Squared*, and *Excess Bonus*. *Log Bonus* is defined, as above, as the log level of bonus pay. *Bonus/Total Compensation* is defined as bonus pay scaled by *Total Compensation*. *Bonus/Salary* is calculated as bonus pay scaled by *Salary*. *Bonus*

<sup>0</sup> A counter argument, however, is that contingent compensation is only effective if the principal, in this case the board, can monitor the performance metrics and how they are being measured.

<sup>14</sup> Our results are robust to using OLS.

*Squared* is defined simply as our continuous *Log Bonus* measure squared. Finally, following Gaver and Im (2014), we calculate *Excess Bonus* equal to *Log Bonus* less mean *Log Bonus* by industry and size quartile.

For completeness, in the model where we use *Log Bonus* as our test variable, we include two additional compensation variables, the logged level of salary and the logged level of other compensation (total compensation less salary and bonus), to test whether donors react differentially by type of compensation. In the model where we use *Bonus/Total Compensation* as our test variable, we also incorporate the level of total compensation, which allows us to simultaneously test whether it is the level of total compensation or the form of compensation that affects future donations. Finally, when we use *Bonus/Salary* as our test variable, we incorporate the logged level of salary in our model. These formulations allow us to test the Jensen et al. (1990a) argument that what matters is not how much you pay, but how you pay. Following our fourth hypothesis, our expectation is that the coefficients on all five test variables will be negative and significant, consistent with donors scaling back contributions to organizations that report more incentive pay.

As controls, we include a series of variables that have been found to affect donations. Following Tinkelman (1998) and Krishnan and Schauer (2000), who find a positive relation between nonprofit size and support, we include year-end *Log Total Assets* and expect it to be positively associated with *Log Direct Donations*. Weisbrod and Dominguez (1986), Posnett and Sandler (1989), Callen (1994), Tinkelman (1998), Khumawala and Gordon (1997), Parsons (2003), Tinkelman and Mankaney (2007), Parsons and Trussel (2008), and Tinkelman (2009) all find that organizational efficiency is associated with the ability to attract donations. Consequently, we use *Administrative Efficiency*, as defined above, and expect it to be positively associated with donations. Weisbrod and Dominguez (1986) and Tinkelman (1999) find that *Log Fundraising Expenses* are positively related to donations. Therefore, we incorporate it in our model and expect a positive coefficient.

Several studies (Weisbrod and Dominguez 1986; Posnett and Sandler 1989; Callen 1994) propose that donors refrain from making donations to organizations that have high levels of government grants, program service revenues, or both, as they feel that the nonprofits' financial needs are being met from other sources. However, other literature (Petrovits et al. 2011; Yetman and Yetman 2013) suggests donors may feel more comfortable contributing to a nonprofit that has other sources of revenue. Consequently, we include both *Log Program Service Revenues* and *Log Government Grants* as controls. However, given mixed results in prior literature, we do not predict the coefficients of these variables.

To control for the effect of competition for donations from other nonprofit organizations, we include our *Nonprofit Competition* variable. Consistent with competition from other nonprofits crowding out donations we expect a negative coefficient on this variable. Finally, to control for the possibility that performance may influence donations, we include *Log Net Income* as an additional independent variable. That is, the possibility exists that donations may be higher, if net income conveys the fact that the nonprofit is well run, or lower, if it conveys the impression that the nonprofit has more revenue than it can spend. The former would be consistent with Chang and Tuckman (1990), who find a positive relation between operating margin and contributions. They argue that operating margin proxies for the ability of an organization to continue

operations in the future, and suggest that donors are more apt to support organizations with stable operations.

We measure our test and control variables with a two-year lag to allow time for the Form 990 information to be incorporated into donor decisions. Specifically, given that the Form 990 for year  $t$  is due May 15 of year  $t + 1$ ,<sup>15</sup> and that dissemination of Form 990 information may be even further delayed, year  $t + 2$  is the first full year where donors have the information in year  $t$ 's Form 990 to use in their donation decisions. We also incorporate fixed effects to control for industry and year, use the natural log of all continuous non-ratio variables, winsorize all variables at the first and 99th percentiles to mitigate the influence of outliers, and cluster standard errors by nonprofit. Given the divergence in coefficients of variation between bonus and salary, and our desire to compare their impact on donations and profitability, we standardized all variables; that is, we transform both the dependent and independent variables such that each has a mean of zero and standard deviation of one (Shan et al. 2014).<sup>16</sup> In sum, we examine the impact of the components of the compensation package on the level of *Log Direct Donations* using the following standardized regression model.

$$\begin{aligned} \text{Log Direct Donations}_{t+2} = & \beta_0 + \beta_1 \text{Bonus test variable}_t + \beta_2 \text{Log Total Assets}_t \\ & + \beta_3 \text{Administrative Efficiency}_t \\ & + \beta_4 \text{Log Fundraising Expenses}_t \\ & + \beta_5 \text{Log Government Grants}_t \\ & + \beta_6 \text{Log Program Service Revenues}_t \\ & + \beta_7 \text{Nonprofit Competition}_t + \beta_8 \text{Log Net Income}_t \\ & + \text{Industry fixed effects} + \text{Year fixed effects} + \varepsilon \quad (2) \end{aligned}$$

where *Bonus test variable* is alternatively defined as *Log Bonus*, *Bonus/Total Compensation*, *Bonus/Salary*, *Bonus Squared*, or *Excess Bonus*.

### 3.3 Impact of incentive compensation on future profitability

To test the impact of bonus pay on future profitability, we analyze the impact of our primary test variable, *Log Bonus*, on our three alternative measures of profitability: *Log Net Income*, *ROA*, and *Operating Margin*. To allow us to examine whether bonuses have a differential effect on profitability, we also incorporate *Log Salary* and *Log Other Compensation* in our model. Control variables follow prior for-profit literature, which suggests that firm size (*Log Total Assets*), *Age*, *Leverage*, *Percentage of Independent Directors*, and *Log Board Size* (Balafas and Florackis 2014; Cooper et al. 2014; Balsam et al. 2016) all play an important role in predicting future performance. We define organizational age as the number of years since 501(c)(3) tax-exempt status was

<sup>15</sup> Automatic extensions of six months are available.

<sup>16</sup> By definition, this standardization does not affect the t-statistics of the individual variables, nor the  $R^2$  of the model.

granted (Weisbrod and Dominguez 1986; Petrovits et al. 2011). *Leverage* is total liabilities over total assets. *Percentage of Independent Directors* and *Log Board Size* are as defined above. Finally, we include our competition measures, *Nonprofit Competition* and *For-profit competition*, as competition could influence profitability.

In this model we lag our independent variables by one year, as the incentive effect of bonus pay does not rely on Form 990 disclosure. As above, we incorporate fixed effects to control for industry and year, use the natural log of all continuous non-ratio variables, winsorize all variables at the first and 99th percentiles to mitigate the influence of outliers, and cluster standard errors by nonprofit. We also standardize all variables. In sum we examine the impact of the components of the compensation package on profitability using the following standardized regression model. Formally, this is represented as.

$$\begin{aligned}
 \text{Profitability}_{t+1} = & \beta_0 + \beta_1 \text{Log Bonus}_t + \beta_2 \text{Log Salary}_t \\
 & + \beta_3 \text{Log Other Compensation}_t + \beta_4 \text{Log Total Assets}_t \\
 & + \beta_5 \text{Age}_t + \beta_6 \text{Leverage}_t \\
 & + \beta_7 \text{Percentage of Independent Directors}_t + \beta_8 \text{Board Size}_t \\
 & + \beta_9 \text{Nonprofit Competition}_t + \beta_{10} \text{For-profit Competition}_t \\
 & + \text{Industry fixed effects} + \text{Year fixed effects} + \varepsilon
 \end{aligned} \quad (3)$$

where *Profitability* is alternatively defined as *Log Net Income*, *ROA*, or *Operating Margin*.

## 4 Sample selection

We begin with the Statistics of Income (SOI) file for nonprofits organized and operating under section 501(c)(3) of the Internal Revenue Code. This dataset is originally compiled from Form 990 by the Statistics of Income division of the U.S. Internal Revenue Service, and then augmented and transformed into a user friendly format by the National Center for Charitable Statistics (NCCS), from whose website we download it.<sup>17</sup> This dataset includes non-compensation financial information, such as revenues and expenses, for all nonprofit organizations with total assets greater than \$50 million, plus a stratified random sample of smaller organizations. While the SOI dataset does not include every nonprofit organization for every year, it does reflect “over 90 percent of all nonprofit revenues,” according to Yetman and Yetman (2013, 1049).

<sup>17</sup> See <http://nccsweb.urban.org/>. Advantages of using information prepared and provided by the NCCS, rather than data available from the IRS, are 1) additional classification information, such as Metropolitan Statistical Area codes (used for our competition variables); 2) separate files for 501(c)(3), non-501(c)(3), 990-EZ, and 990-PF filers (our sample focuses on 501(c)(3) filers as these are the only organizations required to file schedule J from which our bonus data is collected); and 3) data can be extracted and downloaded into user friendly format. See Feng et al. (2014) for a detailed discussion of data availability and differences between data provided by the NCCS and the IRS.

We merge our initial dataset with the separate Compensation File also compiled by SOI, which again we obtain from the NCCS website. This dataset includes executive compensation from Schedule J of Form 990, that is, salary, bonus, other reportable compensation, retirement and deferred compensation, nontaxable benefits, and total compensation. Schedule J must be completed by nonprofit organizations that have an officer, director, or employee with total compensation in excess of \$150,000. While Schedule J reports information for individual executives, including their names and titles, the NCCS does not digitize identifying information. Thus we cannot identify the CEO *per se*. However, following prior literature (Frumkin and Keating 2010; Sedatole et al. 2015) we classify the highest paid officer or key employee as CEO. Given that the focus of our study is bonus pay, our sample period ranges from 2008 to 2012, the years for which digitized Schedule J information is available.<sup>18</sup>

Merging these two files yields a sample of 80,468 firm-year observations over five years. We then lose 19,468 firm-year observations for which one or more variables are not available. We also delete 887 firm-year observations that appear to be outliers and potential errors (e.g., years with negative revenues; see Feng et al. 2014), in addition to 15,121 firm-year observations where the highest reported total compensation is less than \$150,000.<sup>19</sup> As shown in Table 2, this yields a sample of 44,992 firm-year observations, of which 20,140 or 45%, report paying a bonus to their highest paid officer/key executive. In terms of unique nonprofits, we have 11,895 organizations, of which 6811 or 57%, report bonus pay in one or more years. For our donations consequences analysis, we use a two-year lag for the independent variables to allow the dissemination of Form 990 information to donors, reducing our sample to 22,188 firm-year observations. Similarly, in our profitability consequences analysis, we use a one-year lag for the independent variables, reducing our sample to 31,799 firm-year observations.

Table 3 provides the industry and year distributions for our sample.<sup>20</sup> As shown in panel A, health and hospitals make up the largest category, 43% of our sample. This is followed by education and universities (22%), human services (18%); arts, culture, and humanities (5%); and religion (1%). Finally, the classification “other industries,” which consists of environment, international, mutual benefit, and public and societal benefit makes up approximately 11% of the sample. We also observe that the percentage of executives receiving bonuses varies across industries, with executives in health and hospitals receiving bonuses most often, 61% of the time, and those in education and universities receiving bonuses least often, 27% of the time. Mean bonus amounts are also highest in health and hospitals (\$174,672), followed by other (\$49,525). As shown in panel B, our sample is fairly evenly distributed across the five sample years, with mean bonus pay increasing by close to 50% from 2008 to 2012.

<sup>18</sup> The NCCS is in the process of digitizing more recent years at this time.

<sup>19</sup> Our results are robust to including observations with compensation less than \$150,000. However, given that firms are not required to complete Schedule J below this threshold, and that voluntary disclosers may differ from those required to disclose, we limit our analysis to organizations that are required to disclose this information.

<sup>20</sup> Our industry classification follows that of Frumkin and Keating (2010).



**Table 2** Sample selection

<i>By Firm-year observation</i>		
Schedule J observations available for analysis from NCCS compensation database 2008–2012	80,468	
Less: Observations for which all model variables are not available	–19,468	
Less: Obvious outliers (total revenue, total expenses, total assets less than zero)	–887	
Less: Observations with total compensation less than \$150,000 (not required to file Schedule J)	–15,121	
Firm-year observations	<b>44,992</b>	
Firm-year observations reporting bonus pay	20,140	44.76%
<i>By Unique Firm</i>		
Unique nonprofit firms	<b>11,895</b>	
Unique firms reporting bonus pay	6811	57.26%

## 5 Results

### 5.1 Descriptive statistics

Table 4 provides descriptive statistics for the dependent and independent variables in our models. We include the percentage of the sample that reports non-zero values for each variable as a means of understanding their use in our sample. As noted above, just less than half (45%) of our nonprofit year observations report paying bonuses. Mean *Bonus* is \$97,729, with a maximum of almost \$8 million (untabulated). By comparison, *Salary* has a mean (median) of \$387,758 (\$294,225) and *Other Compensation* a mean (median) of \$211,635 (\$49,672). We also find that *Bonus* is a small fraction of *Net Income*, which has a sample mean (median) of \$6 million (\$842,000), or total assets with a sample mean (median) of \$247 million (\$70 million). While we omit discussion of our remaining independent variables for brevity, we do note the negative mean for *Unrestricted Cash* (defined as total cash plus savings and temporary cash investments less total temporarily and permanently restricted net assets) of approximately -\$22 million, which is driven by restricted net assets held as long-term investments (including land, buildings, and equipment) rather than held as cash and cash equivalents.<sup>21</sup>

Turning to a comparison of our bonus and non-bonus paying samples, we note that *Salary* is significantly ( $p \text{ value} < 0.000$ ) greater in nonprofits that pay bonuses. In particular, the mean (median) *Salary* in nonprofits that pay bonuses is \$474,528 (\$392,510) versus \$317,439 (\$247,650) in nonprofits that do not. We also document significant differences between the two groups of firms with respect to the majority of our remaining test and control variables. For example, bonus firms are larger, and more profitable than nonprofits not paying bonuses. Finally, we compare, but do not tabulate,

<sup>21</sup> We emphasize that restricted assets need not be cash, i.e., there may be restrictions on other investments or property, plant, and equipment. However, in the absence of a way to identify the actual restricted assets, we use the most conservative approach and assume that the restrictions are on the use of cash. As a reference point, the mean of cash plus savings and temporary cash investments is \$4 million; investments in publicly traded securities \$39 million; investments in other securities \$49 million; and land, buildings, and equipment \$57 million; for nonprofits in our sample. So the average nonprofit has unrestricted assets in excess of \$100 million.

**Table 3** Sample distribution

<b>Panel A: Industry distribution</b>					
Industry group	Frequency	%	Firm-years with bonus	% Firm-years with bonus	Mean bonus amount
Arts, culture, and humanities	2075	5%	578	28%	\$22,075
Education and universities	10,021	22%	2685	27%	\$45,128
Health and hospitals	19,347	43%	11,872	61%	\$174,672
Human services	7938	18%	2928	37%	\$30,456
Religion	398	1%	147	37%	\$24,539
Other industries (environment, international, mutual benefit, public and societal benefit)	5213	11%	2077	37%	\$49,525
Total	44,992	100%	20,140	45%	\$97,729
<b>Panel B: Year distribution</b>					
Year	Frequency	%	Firm-years with bonus	% Firm-years with bonus	Mean bonus amount
2008	8069	18%	3536	44%	\$81,681
2009	9302	21%	3759	40%	\$82,104
2010	8787	20%	3950	45%	\$97,263
2011	9224	21%	4318	47%	\$103,876
2012	9610	21%	4577	48%	\$120,856
Total	44,992	100%	20,140	45%	\$97,729

**Table 4** Descriptive statistics<sup>b</sup>

	% firm-years reporting nonzero values	Full Sample <i>N</i> = 44,992)		Bonus Sample ( <i>N</i> = 20,140)		Non-bonus Sample ( <i>N</i> = 24,852)		T-test <i>p</i> value
		Mean	Median	Mean	Median	Mean	Median	
<i>Salary</i>	99%	387,758	294,225	474,528	392,510	317,439	247,650	0.000
<i>Bonus</i>	45%	97,729	0	218,324	95,810	0	0	0.000
<i>Other Compensation</i>	36%	211,635	49,672	333,830	92,278	112,609	33,920	0.000
<i>Total Compensation</i>	100%	697,123	393,357	1,026,682	652,916	430,048	295,606	0.000
<i>Total Assets</i>	100%	246,520,916	70,072,302	340,738,420	88,702,107	170,167,281	59,963,173	0.000
<i>Net Income</i>	99%	6,024,401	841,579	9,910,086	1,584,538	2,875,452	492,089	0.000
<i>Administrative Efficiency</i>	99%	0.85	0.88	0.85	0.88	0.85	0.88	0.126
<i>Direct Donations</i>	86%	10,742,079	1,067,928	11,381,573	698,571	10,223,834	1,456,321	0.031
<i>Government Grants</i>	47%	7,021,085	0	7,599,866	0	6,552,042	0	0.084
<i>Program Service Revenue</i>	87%	103,817,885	17,560,512	168,688,628	31,953,632	51,246,793	11,471,554	0.000
<i>Management and General Expenses</i>	97%	14,869,379	3,442,790	22,807,534	5,128,835	8,436,318	2,682,167	0.000
<i>Fundraising Expenses</i>	53%	1,024,976	29,420	1,033,672	0	1,017,929	142,504	0.715
<i>Program Service Expenses</i>	99%	0.96	0.82	0.91	0.82	1.01	0.82	0.420
<i>Nonprofit Competition</i>	44%	1.08	0.00	0.99	0.00	1.15	0.00	0.000
<i>For-Profit Competition</i>	36%	1.19	0.00	1.32	0.00	1.08	0.00	0.000
<i>Charitable</i>	48%	0.48	0.00	0.38	0.00	0.56	1.00	0.000
<i>Written Employment Contract</i>	34%	0.47	0.00	0.49	0.00	0.45	0.00	0.000
<i>Compensation Committee</i>	57%	0.56	1.00	0.62	1.00	0.51	1.00	0.000
<i>Board Approval</i>	79%	0.78	1.00	0.76	1.00	0.80	1.00	0.000
<i>Compensation Consultant</i>	38%	0.37	0.00	0.50	0.00	0.26	0.00	0.000
<i>Compensation Survey</i>	67%	0.66	1.00	0.69	1.00	0.63	1.00	0.000

**Table 4** (continued)

	% firm-years reporting nonzero values	Full Sample <i>N</i> = 44,992)		Bonus Sample ( <i>N</i> = 20,140)		Non-bonus Sample ( <i>N</i> = 24,852)		T-test <i>p</i> value
		Mean	Median	Mean	Median	Mean	Median	
<i>Other 990 Compensation Comparison</i>	26%		0.26	0.00	0.25	0.00	0.27	0.00 0.000
<i>Board Size</i>	100%		2.83	2.83	2.77	2.77	2.87	2.89 0.000
<i>Percentage of Independent Directors</i>	97%		0.85	0.94	0.81	0.89	0.89	0.98 0.000
<i>Unrestricted Cash</i>	59%		-22,231,907	0	-18,311,889	0	-25,408,680	0 0.030
<i>Age</i>	100%		38.40	36.00	37.02	33.00	39.51	38.00 0.000
<i>Leverage</i>	99%		0.47	0.35	0.54	0.38	0.41	0.32 0.025

See Table 1 for variable definitions. <sup>b</sup> Values in the table represent raw values, i.e., unlogged and unwinsorized

the coefficients of variation (mean/standard deviation) for *Bonus* and *Salary* and find that bonus pay is nearly four times more variable than base salary, that is, 3.15 versus 0.79.

Table 5, panels A and B, present the correlations between the independent variables in our main determinants and consequences models, respectively. The highest correlation in panel A is the 0.63 between *Board Approval* and *Compensation Survey*, while the highest correlation in panel B is the 0.29 between *Log Total Assets* and *Log Program Service Revenues*. Even though all variance inflation factors (VIFs) are less than two, which suggests that multicollinearity is not a problem, we also verify, in untabulated analyses, that the results presented below are robust to excluding these highly correlated control variables.

## 5.2 Determinants of bonus

In Table 6, we analyze the determinants of nonprofit bonuses, analyzing individually the decisions to pay a bonus, how much to pay, and whether to change bonus pay.<sup>22</sup> Examining these choices individually is important, given that 43% of firms in our sample do not pay a bonus in any year, which could be the result of policies or other provisions against using incentive pay. As a result, the effect of net income on the decision to pay a bonus could be very different from its effect on the decision of how much of a bonus to pay. Thus, in column I, we begin by examining the decision to pay a bonus (*Bonus Indicator*), finding that the decision is positive and significantly related to *Log Net Income*. Similarly, in column II we find the magnitude of the bonus is positive and significantly associated with net income, and in column III we find the change in bonus positive and significantly associated with net income. Results using alternative measures of profitability, that is, ROA and operating margin, are presented in panels B and C of Table 6, respectively. Here we once again find that profitability is positively associated with all three specifications of our bonus test variable.<sup>23</sup> Thus, we find strong and consistent support for our first hypothesis.

In terms of our other performance measures, we find no evidence that they increase the likelihood or size of the bonus, for example, the coefficients on *Administrative Efficiency* and *Log Program Service Revenues* are insignificantly different from zero. In fact, and counter to our expectation, we find the coefficients on both *Log Direct Donations* and *Log Government Grants* are negative and significant in all three columns. This latter finding that higher donations and government grants are associated with lower bonuses seems counterintuitive; that is, it appears the CEO is penalized for increasing fundraising. We note that we are merely showing an association, not establishing causation, and that this result is consistent with charitable organizations paying lower bonuses. Consistent with this explanation, in additional untabulated analyses, we find that this association only holds in two of our six industry classifications, religion and other. These industry classifications, which together comprise only 12% of our sample, are also relatively more donation reliant than the sample as a whole.

<sup>22</sup> As an alternative formulation, in an untabulated analysis, we jointly model the decision to pay a bonus and the amount of the bonus. In this two-stage model, the first stage models the choice to pay a bonus, while the second models the amount of the bonus, incorporating the inverse Mills ratio (IMR) to control for selection bias. Our results are robust to this alternative specification.

<sup>23</sup> As our inferences are consistent across panels, for brevity we only discuss panel A.

Table 5 Correlation table

Panel A: Determinants Model Independent Variables		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	Log Net Income <sub><i>t</i></sub>	1.00																		
2	Administrative Efficiency <sub><i>t</i></sub>	-0.01	1.00																	
3	Log Direct Donations <sub><i>t</i></sub>	0.11	0.07	1.00																
4	Log Government Grants <sub><i>t</i></sub>	0.06	0.05	0.25	1.00															
5	Log Program Service Revenues <sub><i>t</i></sub>	0.11	0.02	-0.04	0.18	1.00														
6	Nonprofit Competition <sub><i>t</i></sub>	-0.08	0.00	-0.08	-0.06	-0.11	1.00													
7	For-Profit Competition <sub><i>t</i></sub>	0.05	0.05	0.06	0.02	-0.05	-0.10	1.00												
8	Total Assets	0.24	0.03	0.28	0.17	0.31	-0.18	0.35	1.00											
9	Charitable	-0.01	-0.01	0.16	0.10	-0.14	0.07	0.11	0.02	1.00										
10	Written Employment Contract <sub><i>t</i></sub>	0.03	-0.04	0.11	0.12	0.16	-0.07	0.04	0.24	-0.05	1.00									
11	Compensation Committee <sub><i>t</i></sub>	0.06	0.01	0.14	0.09	0.17	-0.06	0.08	0.33	-0.05	0.38	1.00								
12	Board Approval <sub><i>t</i></sub>	0.02	-0.01	0.20	0.15	0.15	-0.05	0.03	0.29	0.02	0.41	0.51	1.00							
13	Compensation Consultant <sub><i>t</i></sub>	0.09	-0.01	0.02	0.04	0.17	-0.08	0.10	0.33	-0.14	0.36	0.47	0.36	1.00						
14	Compensation Survey <sub><i>t</i></sub>	0.06	0.01	0.16	0.12	0.17	-0.07	0.08	0.32	-0.05	0.38	0.52	0.63	0.44	1.00					
15	Other 990 Comp Comparison <sub><i>t</i></sub>	0.02	0.03	0.13	0.08	0.02	-0.03	0.07	0.15	0.08	0.30	0.28	0.28	0.18	0.31	1.00				
16	Log Board Size <sub><i>t</i></sub>	0.04	0.04	0.46	0.25	0.07	-0.07	0.08	0.33	0.22	0.19	0.24	0.22	0.05	0.19	0.15	1.00			
17	Percentage of Independent Directors <sub><i>t</i></sub>	-0.03	-0.01	0.28	0.13	-0.06	0.01	-0.02	-0.03	0.11	0.10	0.08	0.23	-0.05	0.13	0.11	0.38	1.00		
18	Log Unrestricted Cash <sub><i>t</i></sub>	0.07	-0.01	-0.24	-0.07	0.15	0.09	-0.06	0.03	-0.08	-0.01	0.00	0.00	0.10	0.01	-0.05	-0.27	-0.13	1.00	
19	Log Salary <sub><i>t</i></sub>	0.07	0.00	-0.03	0.01	0.11	-0.06	0.06	0.19	-0.19	0.04	0.08	-0.04	0.15	0.03	0.00	0.00	-0.16	0.03	1.00

Table 5 (continued)

Panel B: Consequences Model Independent Variables										
	1	2	3	4	5	6	7	8	9	10
1 <i>Log Bonus<sub>it</sub></i>	1.00									
2 <i>Log Salary<sub>it</sub></i>	<b>0.21</b>	1.00								
3 <i>Log Other Compensation<sub>it</sub></i>	<b>0.03</b>	<b>0.04</b>	1.00							
4 <i>Log Total Assets<sub>it</sub></i>	<b>0.20</b>	<b>0.18</b>	<b>0.16</b>	1.00						
5 <i>Administrative Efficiency<sub>it</sub></i>	0.00	0.01	<b>0.01</b>	<b>0.04</b>	1.00					
6 <i>Log Government Grants<sub>it</sub></i>	<b>-0.06</b>	<b>0.01</b>	<b>0.01</b>	<b>0.16</b>	<b>0.04</b>	1.00				
7 <i>Log Program Service Revenues<sub>it</sub></i>	<b>0.12</b>	<b>0.10</b>	<b>0.05</b>	<b>0.29</b>	<b>0.01</b>	<b>0.19</b>	1.00			
8 <i>Log Fundraising Expenses<sub>it</sub></i>	<b>-0.18</b>	<b>-0.05</b>	<b>0.14</b>	<b>0.20</b>	<b>0.07</b>	<b>0.24</b>	<b>-0.06</b>	1.00		
9 <i>Log Net Income<sub>it</sub></i>	<b>0.12</b>	<b>0.06</b>	<b>0.08</b>	<b>0.21</b>	<b>-0.02</b>	<b>0.06</b>	<b>0.12</b>	0.00	1.00	
10 <i>Nonprofit Competition<sub>it</sub></i>	<b>-0.02</b>	<b>-0.03</b>	<b>-0.08</b>	<b>-0.15</b>	0.01	<b>-0.04</b>	<b>-0.04</b>	<b>0.03</b>	<b>-0.08</b>	1.00

Bolded coefficients have significant  $p$  values at the 10% level

See Table 1 for variable definitions



**Table 6** Determinants of incentive compensation

Dependent Variable: <i>defined in column heading</i>	(I)	(II)	(III)
	<i>Bonus Indicator<sub>t</sub></i>	<i>Log Bonus<sub>t</sub></i>	$\Delta$ <i>Bonus<sub>t</sub></i>
	Coefficient <i>p</i> value	Coefficient <i>p</i> value	Coefficient <i>p</i> value
<b>Panel A – Net Income profitability metric</b>			
<i>Constant</i>	-6.824*** 0.000	-34.434*** 0.000	-41.189*** 0.000
<i>Log Net Income<sub>t</sub></i>	0.018*** 0.000	0.086*** 0.000	0.053*** 0.006
<i>Administrative Efficiency<sub>t</sub></i>	-0.031 0.814	-0.087 0.893	-0.532 0.626
<i>Log Direct Donations<sub>t</sub></i>	-0.009** 0.014	-0.050*** 0.003	-0.079*** 0.006
<i>Log Government Grants<sub>t</sub></i>	-0.014*** 0.000	-0.072*** 0.000	-0.055** 0.010
<i>Log Program Service Revenues<sub>t</sub></i>	-0.004 0.243	-0.027 0.180	-0.020 0.529
<i>Nonprofit Competition<sub>t</sub></i>	0.043*** 0.000	0.204*** 0.000	0.358*** 0.000
<i>For-Profit Competition<sub>t</sub></i>	0.006 0.651	0.097 0.146	0.013 0.900
<i>Log Total Assets<sub>t</sub></i>	0.168*** 0.000	0.905*** 0.000	1.299*** 0.000
<i>Charitable<sub>t</sub></i>	-0.241*** 0.000	-1.286*** 0.000	-1.191*** 0.002
<i>Written Employment Contract<sub>t</sub></i>	0.014 0.727	0.083 0.678	-0.241 0.446
<i>Compensation Committee<sub>t</sub></i>	0.285*** 0.000	1.596*** 0.000	1.641*** 0.000
<i>Board Approval<sub>t</sub></i>	-0.630*** 0.000	-3.752*** 0.000	-3.611*** 0.000
<i>Compensation Consultant<sub>t</sub></i>	0.684*** 0.000	3.855*** 0.000	3.654*** 0.000
<i>Compensation Survey<sub>t</sub></i>	0.096** 0.050	0.379 0.155	0.012 0.977
<i>Other 990 Compensation Comparison<sub>t</sub></i>	-0.039 0.366	-0.108 0.622	-0.411 0.214
<i>Log Board Size<sub>t</sub></i>	0.011 0.758	-0.002 0.991	-0.353 0.215
<i>Percentage of Independent Directors<sub>t</sub></i>	-0.537*** 0.000	-2.972*** 0.000	-1.561** 0.010
<i>Log Unrestricted Cash<sub>t</sub></i>	0.010*** 0.000	0.048*** 0.000	0.099*** 0.000
<i>Log Salary<sub>t</sub></i>	0.246***	1.349***	1.398***

**Table 6** (continued)

Dependent Variable: <i>defined in column heading</i>	(I)	(II)	(III)
	<i>Bonus Indicator<sub>t</sub></i>	<i>Log Bonus<sub>t</sub></i>	$\Delta$ <i>Bonus<sub>t</sub></i>
	Coefficient <i>p value</i>	Coefficient <i>p value</i>	Coefficient <i>p value</i>
	0.000	0.000	0.000
Industry & Year fixed effects	YES	YES	YES
N	44,992	44,992	26,158
Pseudo R <sup>2</sup>	0.1400	0.0534	0.1104
Model p value	0.000***	0.000***	0.000***
<i>Panel B – ROA profitability metric</i>			
<i>Constant</i>	−6.909***	−34.898***	−42.214***
	0.000	0.000	0.000
<i>ROA<sub>t</sub></i>	0.755***	3.714***	5.368***
	0.000	0.000	0.004
<i>Administrative Efficiency<sub>t</sub></i>	−0.040	−0.129	−0.566
	0.764	0.842	0.604
<i>Log Direct Donations<sub>t</sub></i>	−0.008**	−0.044**	−0.078***
	0.036	0.011	0.006
<i>Log Government Grants<sub>t</sub></i>	−0.014***	−0.071***	−0.054**
	0.000	0.000	0.010
<i>Log Program Service Revenues<sub>t</sub></i>	−0.004	−0.023	−0.018
	0.326	0.241	0.563
<i>Nonprofit Competition<sub>t</sub></i>	0.043***	0.208***	0.356***
	0.000	0.000	0.000
<i>For-Profit Competition<sub>t</sub></i>	0.003	0.083	0.022
	0.795	0.212	0.833
<i>Log Total Assets<sub>t</sub></i>	0.183***	0.982***	1.387***
	0.000	0.000	0.000
<i>Charitable<sub>t</sub></i>	−0.239***	−1.285***	−1.246***
	0.000	0.000	0.001
<i>Written Employment Contract<sub>t</sub></i>	0.011	0.072	−0.236
	0.779	0.721	0.455
<i>Compensation Committee<sub>t</sub></i>	0.283***	1.587***	1.642***
	0.000	0.000	0.000
<i>Board Approval<sub>t</sub></i>	−0.633***	−3.776***	−3.607***
	0.000	0.000	0.000
<i>Compensation Consultant<sub>t</sub></i>	0.686***	3.873***	3.630***
	0.000	0.000	0.000
<i>Compensation Survey<sub>t</sub></i>	0.099**	0.397	0.016
	0.043	0.137	0.969
<i>Other 990 Compensation Comparison<sub>t</sub></i>	−0.035	−0.087	−0.401
	0.418	0.691	0.225
<i>Log Board Size<sub>t</sub></i>	0.014	0.008	0.386
	0.704	0.965	0.174

**Table 6** (continued)

Dependent Variable: <i>defined in column heading</i>	(I)	(II)	(III)
	<i>Bonus Indicator<sub>t</sub></i>	<i>Log Bonus<sub>t</sub></i>	$\Delta$ <i>Bonus<sub>t</sub></i>
	Coefficient <i>p</i> value	Coefficient <i>p</i> value	Coefficient <i>p</i> value
<i>Percentage of Independent Directors<sub>t</sub></i>	-0.547*** 0.000	-3.024*** 0.000	-1.538** 0.012
<i>Log Unrestricted Cash<sub>t</sub></i>	0.011*** 0.000	0.055*** 0.000	0.101*** 0.000
<i>Log Salary<sub>t</sub></i>	0.246*** 0.000	1.347*** 0.000	1.387*** 0.000
Industry & Year fixed effects	YES	YES	YES
N	44,992	44,992	26,158
Pseudo R <sup>2</sup>	0.1386	0.0530	0.1104
Model <i>p</i> value	0.000***	0.000***	0.000***
<b>Panel C – Operating Margin profitability metric</b>			
<i>Constant</i>	-6.958*** 0.000	-35.151*** 0.000	-34.216*** 0.000
<i>Operating Margin<sub>t</sub></i>	0.183*** 0.000	0.934*** 0.000	2.101** 0.026
<i>Administrative Efficiency<sub>t</sub></i>	-0.013 0.921	0.012 0.985	-0.782 0.505
<i>Log Direct Donations<sub>t</sub></i>	-0.008** 0.030	-0.045*** 0.009	-0.068** 0.021
<i>Log Government Grants<sub>t</sub></i>	-0.014*** 0.000	-0.071*** 0.000	-0.031 0.153
<i>Log Program Service Revenues<sub>t</sub></i>	-0.004 0.247	-0.027 0.180	-0.004 0.917
<i>Nonprofit Competition<sub>t</sub></i>	0.044*** 0.000	0.210*** 0.000	0.204** 0.024
<i>For-Profit Competition<sub>t</sub></i>	0.002 0.848	0.078 0.238	0.049 0.645
<i>Log Total Assets<sub>t</sub></i>	0.185*** 0.000	0.992*** 0.000	0.750*** 0.000
<i>Charitable<sub>t</sub></i>	-0.237*** 0.000	-1.281*** 0.000	-1.315*** 0.001
<i>Written Employment Contract<sub>t</sub></i>	0.010 0.802	0.063 0.751	-0.094 0.770
<i>Compensation Committee<sub>t</sub></i>	0.281*** 0.000	1.580*** 0.000	1.753*** 0.000
<i>Board Approval<sub>t</sub></i>	-0.630*** 0.000	-3.760*** 0.000	-4.205*** 0.000
<i>Compensation Consultant<sub>t</sub></i>	0.688*** 0.000	3.879*** 0.000	3.221*** 0.000
<i>Compensation Survey<sub>t</sub></i>	0.100**	0.403	0.078

**Table 6** (continued)

Dependent Variable: <i>defined in column heading</i>	(I)	(II)	(III)
	<i>Bonus Indicator<sub>i</sub></i>	<i>Log Bonus<sub>i</sub></i>	$\Delta$ <i>Bonus<sub>i</sub></i>
	Coefficient <i>p</i> value	Coefficient <i>p</i> value	Coefficient <i>p</i> value
	0.040	0.131	0.860
<i>Other 990 Compensation Comparison<sub>i</sub></i>	−0.035	−0.089	−0.494
	0.415	0.685	0.137
<i>Log Board Size<sub>i</sub></i>	0.008	−0.020	−0.013
	0.830	0.913	0.965
<i>Percentage of Independent Directors<sub>i</sub></i>	−0.541***	−2.992***	−1.297**
	0.000	0.000	0.044
<i>Log Unrestricted Cash<sub>i</sub></i>	0.011***	0.056***	0.105***
	0.000	0.000	0.000
<i>Log Salary<sub>i</sub></i>	0.246***	1.347***	1.918***
	0.000	0.000	0.000
Industry & Year fixed effects	YES	YES	YES
N	44,992	44,992	26,158
Pseudo R <sup>2</sup>	0.1386	0.0530	0.0379
Model <i>p</i> value	0.000***	0.000***	0.000***

\*significant at 10% level, \*\*significant at 5% level, \*\*\*significant at 1% level (two-tailed)

See Table 1 for variable definitions

Turning to hypothesis three, the association between bonuses and competition, while we find the coefficients on *Nonprofit Competition* to be positive and significant in all three Table 6 specifications, we fail to find significant relationships between either the likelihood that a bonus is paid, its amount, or the change in amount, and *For-profit Competition*. This is consistent with executives' bonuses increasing with the competition for their services in the nonprofit sector, but not the for-profit labor market.<sup>24</sup>

Briefly examining our control variables, we find consistent positive and significant coefficients on *Log Total Assets*, indicating that larger organizations are using bonus pay more frequently, as well as paying larger amounts, while *Charitable* organizations are less likely to use bonus pay and pay lower amounts. We find that the existence of *Board Approval* reduces the amount of bonus pay, while the existence of a *Compensation Committee* and the hiring of a *Compensation Consultant* are associated with an increase in the likelihood and bonus amount, that is, the coefficients are positive and significant. With respect to the monitoring environment, we find that organizations with more independent boards (*Percentage of Independent Directors*) are less likely to, and pay lower bonuses, although we find no effect for *Log Board Size*. We do find, as expected, that the availability of cash increases the likelihood and amount of bonuses. Finally, the coefficient on *Log*

<sup>24</sup> One possible explanation for this result is the lack of for-profit competition for our sample organizations; that is, we find only 36% of sample organizations face competition from for-profit organizations in the same industry and size quartile.

*Salary* is positive and significant, indicating that the likelihood a bonus will be paid, the amount paid, and the change in amount paid are all increasing with base compensation.<sup>25</sup>

### 5.2.1 Impact of accumulation of assets on use of bonuses

As noted above, donors and presumably the board, while wanting the organization to be financially viable and to accumulate assets necessary to sustain itself in the long-run, do not want it to accumulate excess assets. To test whether our findings are sensitive to the need to accumulate assets, we construct a measure of “years of available assets” (*Y*) following Marudas (2004), and incorporate it, and the interaction of it with our profitability measures, for example, *Net Income\*Y*, in our determinants model, expecting to find a negative coefficient on this interaction.<sup>26</sup> Our logic is that nonprofits with significant unrestricted assets, as proxied for by *Y*, have no need to accumulate further assets and instead should be increasing program spending. Thus they should be less likely to incentivize and reward asset accumulation, that is, profits. Consequently, while we expect the coefficient on our profitability measure will remain positive, we expect the coefficient on the interaction term to be negative. Indeed, as presented in Table 7, the coefficient on profitability continues to be positive and significantly related to our bonus test variables, whereas the coefficient on the interaction term is negative and significantly related to bonus pay.

### 5.2.2 Determinants of salary, other compensation, and total compensation

Table 8 presents determinants models for salary, other compensation, and total compensation respectively. In contrast to our results for bonus pay, we find *Log Net Income* is not statistically significant in any of these models.<sup>27</sup> We do find *Administrative Efficiency* is positively related to *Log Salary* and *Log Other Compensation*, but not *Log Total Compensation*. We find some evidence that *Log Direct Donations* and *Log Government Grants* are negatively associated with non-bonus components of the compensation package; that is, the coefficient in the *Log Salary* (*Log Other Compensation*) model is negative and significant for *Log Direct Donations* (*Log Government Grants*). Similarly, we find *Log Program Service Revenues* associated with higher salary, but not other compensation. We also find that *Log Salary* and *Log Total Compensation* are positive and significantly associated with both competition measures, while *Log Other Compensation* is positively related to nonprofit competition, providing evidence that competition is an important determinant of all types of nonprofit pay. In sum, other forms of compensation do not appear to be driven by organizational performance and characteristics in the same way bonus pay is.

<sup>25</sup> To further probe this finding, in an untabulated analysis, we replace *Log Salary* with *Excess Salary* and continue to find a positive and significant association with the likelihood, amount, and change in bonus. The finding that bonus in excess of that explained by the other economic and monitoring variables is positively associated with excess salary is not proof, but nonetheless is consistent with managerial power theory.

<sup>26</sup>  $Y = (\text{Total Assets}_t - \text{Permanently Restricted Net Assets}_{t-1}) / (\text{Total Expenses}_{t-1} - \text{Fundraising Expenses}_{t-1})$

<sup>27</sup> We find similar results for *ROA* and *Operating Margin* but do not tabulate for brevity.

**Table 7** Years of assets available (Y) interactions

Dependent Variable: defined in column heading	(I) <i>Bonus Indicator<sub>t</sub></i> Coefficient <i>p</i> value	(II) <i>Log Bonus<sub>t</sub></i> Coefficient <i>p</i> value	(III) $\Delta$ <i>Bonus<sub>t</sub></i> Coefficient <i>p</i> value
<i>Constant</i>	-7.281*** 0.000	-35.828*** 0.000	-32.377*** 0.000
<i>Log Net Income<sub>t</sub></i>	0.019*** 0.000	0.090*** 0.000	0.069*** 0.001
<i>Y<sub>t</sub></i>	0.005** 0.011	0.022*** 0.008	0.032* 0.059
<i>Log Net Income<sub>t</sub>*Y<sub>t</sub></i>	-0.001* 0.078	-0.001* 0.092	-0.002*** 0.000
<i>Administrative Efficiency<sub>t</sub></i>	0.089 0.593	0.346 0.653	0.141 0.260
<i>Log Direct Donations<sub>t</sub></i>	-0.009** 0.031	-0.053*** 0.007	-0.067*** 0.000
<i>Log Government Grants<sub>t</sub></i>	-0.012*** 0.000	-0.064*** 0.000	-0.046*** 0.000
<i>Log Program Service Revenues<sub>t</sub></i>	0.002 0.736	0.001 0.969	-0.007 0.230
<i>Nonprofit Competition<sub>t</sub></i>	0.048*** 0.000	0.231*** 0.000	0.229*** 0.000
<i>For-Profit Competition<sub>t</sub></i>	0.001 0.948	0.081 0.258	0.079 0.988
<i>Log Total Assets<sub>t</sub></i>	0.167*** 0.000	0.852*** 0.000	0.648*** 0.000
<i>Charitable<sub>t</sub></i>	-0.253*** 0.000	-1.308*** 0.000	-1.208*** 0.000
<i>Written Employment Contract<sub>t</sub></i>	0.007 0.882	0.064 0.771	0.126 0.168
<i>Compensation Committee<sub>t</sub></i>	0.306*** 0.000	1.623*** 0.000	1.648*** 0.000
<i>Board Approval<sub>t</sub></i>	-0.695*** 0.000	-3.974*** 0.000	-4.016*** 0.000
<i>Compensation Consultant<sub>t</sub></i>	0.654*** 0.000	3.699*** 0.000	3.447*** 0.000
<i>Compensation Survey<sub>t</sub></i>	0.032 0.579	0.056 0.856	0.045 0.663
<i>Other 990 Compensation Comparison<sub>t</sub></i>	-0.053 0.271	-0.202 0.394	-0.539 0.667
<i>Log Board Size<sub>t</sub></i>	0.036 0.388	0.136 0.499	0.187 0.499
<i>Percentage of Independent Directors<sub>t</sub></i>	-0.496*** 0.000	-2.734*** 0.000	-1.455*** 0.000

**Table 7** (continued)

Dependent Variable: <i>defined in column heading</i>	(I) <i>Bonus Indicator<sub>t</sub></i> Coefficient <i>p</i> value	(II) <i>Log Bonus<sub>t</sub></i> Coefficient <i>p</i> value	(III) $\Delta$ <i>Bonus<sub>t</sub></i> Coefficient <i>p</i> value
<i>Log Unrestricted Cash<sub>t</sub></i>	0.013*** 0.000	0.057*** 0.000	0.097*** 0.000
<i>Log Salary<sub>t</sub></i>	0.257*** 0.000	1.454*** 0.000	1.768*** 0.000
Industry & Year fixed effects	YES	YES	YES
N	31,540	31,540	26,158
Pseudo R <sup>2</sup>	0.1419	0.0538	0.0380
Model <i>p</i> value	0.000***	0.000***	0.000***

\*significant at 10% level, \*\*significant at 5% level, \*\*\*significant at 1% level (two-tailed)

See Table 1 for variable definitions

### 5.3 Impact of incentive compensation on donations

Table 9 examines the consequences of bonuses on future direct donations. As discussed above, we define our bonus test variable alternatively as log level of bonus pay, ratio of bonus to total pay, ratio of bonus to salary, bonus squared, and excess bonus. Consistent with hypothesis four, in all five specifications we find evidence consistent with bonus pay having a negative and significant impact on future donations. While our theory suggests that bonus payments should have a negative impact on future donations, it is silent on the impact of other forms of compensation. Table 9 also provides insight into the impact of these other forms of compensation. That is, we find some evidence that *Log Salary* is also negatively related *Log Direct Donations*; that is, we observe negative and significant coefficients on *Log Salary* in columns I and III. Note, however, in column I, where we can directly compare the coefficients on *Log Bonus* and *Log Salary*, we find the magnitude of the coefficient on *Log Bonus* to be significantly more negative. In column II we find the coefficient on *Total Compensation* (but not that on *Salary/Total Compensation*) to be negative and significantly different from zero, indicating that future direct donations are adversely impacted by total compensation. However, we also find they are adversely affected by the ratio of bonus to total compensation, indicating an incremental adverse impact associated with the amount of bonus included in the compensation mix. In column III we find similar results for salary and the ratio of bonus to salary; that is, while the amount of salary adversely affects future donations, the ratio of bonus to salary has an incremental adverse effect.<sup>28</sup>

<sup>28</sup> We note that these findings are stronger than those of Balsam and Harris (2014), who fail to find an association between total compensation and subsequent donations for their overall sample; they only find their result for nonprofits whose compensation is disclosed in the media and nonprofits with sophisticated donors. While we cannot definitively reconcile these differing results, we note that the sample selection criteria in the two studies differ substantially. That is, this project focuses on organizations reporting total compensation in excess of \$150,000 that are required to file schedule J, while Balsam and Harris (2014) incorporate firms of all size. Our samples are also drawn from different time periods, as Balsam and Harris (2014) examine 2002 through 2008, while we study 2008 through 2012.



**Table 8** Determinants of non-incentive compensation

Dependent Variable: <i>defined in column heading</i>	(I) <i>Log Salary<sub>t</sub></i>  <i>Coefficient</i> <i>p value</i>	(II) <i>Log Other</i> <i>Compensation<sub>t</sub></i>  <i>Coefficient</i> <i>p value</i>	(III) <i>Log Total</i> <i>compensation<sub>t</sub></i>  <i>Coefficient</i> <i>p value</i>
<i>Constant</i>	11.378*** 0.000	3.391*** 0.000	10.530*** 0.000
<i>Log Net Income<sub>t</sub></i>	0.001 0.784	-0.002 0.468	-0.001 0.803
<i>Administrative Efficiency<sub>t</sub></i>	0.038* 0.051	0.537*** 0.005	0.019 0.647
<i>Log Direct Donations<sub>t</sub></i>	-0.005*** 0.000	-0.003 0.572	-0.008*** 0.000
<i>Log Government Grants<sub>t</sub></i>	0.001 0.287	-0.013*** 0.000	-0.002*** 0.002
<i>Log Program Service Revenues<sub>t</sub></i>	0.004*** 0.000	0.003 0.537	0.002* 0.098
<i>Nonprofit Competition<sub>t</sub></i>	0.012*** 0.000	0.043*** 0.001	0.017*** 0.000
<i>For-Profit Competition<sub>t</sub></i>	0.011*** 0.000	0.010 0.502	0.008* 0.051
<i>Log Total Assets<sub>t</sub></i>	0.099*** 0.000	0.389*** 0.000	0.179*** 0.000
<i>Written Employment Contract<sub>t</sub></i>	0.023*** 0.000	-0.008 0.848	0.030*** 0.003
<i>Compensation Committee<sub>t</sub></i>	0.067*** 0.000	0.433*** 0.000	0.126*** 0.000
<i>Board Approval<sub>t</sub></i>	-0.224*** 0.000	-0.887*** 0.000	-0.371*** 0.000
<i>Compensation Consultant<sub>t</sub></i>	0.185*** 0.000	0.799*** 0.000	0.358*** 0.000
<i>Compensation Survey<sub>t</sub></i>	0.012 0.105	0.496*** 0.000	-0.014 0.228
<i>Other 990 Compensation Comparison<sub>t</sub></i>	0.023*** 0.000	0.139*** 0.000	0.021* 0.050
<i>Log Board Size<sub>t</sub></i>	0.082*** 0.000	0.304*** 0.000	0.095*** 0.000
<i>Percentage of Independent Directors<sub>t</sub></i>	-0.553*** 0.000	-0.948*** 0.000	-0.761*** 0.000
<i>Log Unrestricted Cash<sub>t</sub></i>	0.001** 0.049	-0.008** 0.002	0.001 0.292
Industry & Year fixed effects	YES	YES	YES
N	44,992	44,992	44,992

**Table 8** (continued)

Dependent Variable: <i>defined in column heading</i>	(I) <i>Log Salary<sub>t</sub></i>  <i>Coefficient</i> <i>p value</i>	(II) <i>Log Other</i> <i>Compensation<sub>t</sub></i>  <i>Coefficient</i> <i>p value</i>	(III) <i>Log Total</i> <i>compensation<sub>t</sub></i>  <i>Coefficient</i> <i>p value</i>
Pseudo R <sup>2</sup>	0.0341	0.0340	0.3079
Model p value	0.000***	0.000***	0.000***

\*significant at 10% level, \*\*significant at 5% level, \*\*\*significant at 1% level (two-tailed)

See Table 1 for variable definitions

In column IV, we explore the possibility that the relationship between future donations and bonuses is nonlinear. Specifically, we add the square of *Log Bonus* to test the possibility that bonus payments are tolerable to donors until some point is reached, after which donors begin to withhold their contributions. In column (IV) we find just that: the coefficient on *Log Bonus* is positive and significantly different from zero, while the coefficient on *Bonus Squared* is negative and significant. This is consistent with the conjecture that donors are most concerned with very large bonus payouts.

Turning to column V, we calculate excess compensation following Gaver and Im (2014) as the log of bonus less the log of mean bonus for the corresponding industry and size quartile. We do the same for salary and other compensation and include these additional variables in our model. Consistent with our overall understanding of the relationship between bonus pay and donations, we find a negative and significant coefficient on *Excess Bonus* but not on *Excess Salary* or *Excess Other Compensation*.

In sum, Table 9 provides evidence consistent with donors reacting adversely to bonus payments and more so than that of other forms of compensation.<sup>29</sup> However, donors are not homogeneous. Thus following prior literature that distinguishes between sophisticated and unsophisticated donors, we next partition our sample using restricted donations to proxy for donor sophistication (Tinkelman 1998; Yetman and Yetman 2013; Balsam and Harris 2014) to examine whether sophisticated donors react to bonus pay differently. In particular, Balsam and Harris (2014) find evidence consistent with sophisticated donors reacting to compensation information made available in IRS Form 990, while smaller, unsophisticated donors react only to compensation disclosed in the media.

In the bonus pay setting, we expect that sophisticated donors are less likely to object to, and may even prefer, the use of bonus pay that ties compensation to organizational performance, whereas unsophisticated donors are more likely to object to the idea of bonus pay. Following Balsam and Harris (2014) we first define organizations with sophisticated donors as those reporting above sample median restricted net assets, where restricted net assets include both those temporarily and permanently restricted. Results presented in Table 10 confirm a differential reaction to bonus payments. In organizations with unsophisticated donors (column I) we

<sup>29</sup> In untabulated analysis we also find consistent negative relationships when we specify our dependent and control variables in change form, with the level of bonus pay (as well as alternative bonus specifications) as our test variables.

**Table 9** Impact of incentive compensation on future direct donations

Dependent Variable: <i>Direct Donations<sub>t+2</sub></i>	(I) Coefficient <i>p value</i>	(II) Coefficient <i>p value</i>	(III) Coefficient <i>p value</i>	(IV) Coefficient <i>p value</i>	(V) Coefficient <i>p value</i>
<i>Constant</i>	0.229*** 0.000	0.220*** 0.000	0.300*** 0.000	0.189*** 0.000	-0.314* 0.476
<i>Log Bonus<sub>t</sub></i>	-0.028*** 0.000			0.140*** 0.001	
<i>Bonus/Total Compensation<sub>t</sub></i>		-0.017** 0.019			
<i>Bonus/Salary<sub>t</sub></i>			-0.034*** 0.000		
<i>Bonus Squared<sub>t</sub></i>				-0.172*** 0.000	
<i>Excess Bonus<sub>t</sub></i>					-0.005*** 0.000
<i>Log Salary<sub>t</sub></i>	-0.009* 0.126		-0.070*** 0.000	-0.005 0.327	
<i>Salary/Total Compensation<sub>t</sub></i>		0.004 0.634			
<i>Excess Salary<sub>t</sub></i>					0.005 0.275
<i>Log Other Compensation<sub>t</sub></i>	-0.007 0.438			-0.004 0.614	
<i>Excess Other Compensation<sub>t</sub></i>					-0.002 0.462
<i>Log Total Compensation<sub>t</sub></i>		-0.051*** 0.000			
<i>Log Total Assets<sub>t</sub></i>	0.144*** 0.000	0.165*** 0.000	0.158*** 0.000	0.149*** 0.000	0.136*** 0.000
<i>Administrative Efficiency<sub>t</sub></i>	0.023*** 0.007	0.024*** 0.005	0.022*** 0.008	0.023*** 0.006	0.023*** 0.007
<i>Log Fundraising Expenses<sub>t</sub></i>	0.391*** 0.000	0.386*** 0.000	0.387*** 0.000	0.389*** 0.000	0.391*** 0.000
<i>Log Government Grants<sub>t</sub></i>	0.094*** 0.000	0.099*** 0.000	0.094*** 0.000	0.095*** 0.000	0.094*** 0.000
<i>Log Program Service Revenues<sub>t</sub></i>	-0.052*** 0.000	-0.052*** 0.000	-0.052*** 0.000	-0.053*** 0.000	-0.052*** 0.000
<i>Nonprofit Competition<sub>t</sub></i>	0.010 0.120	0.010 0.104	0.009 0.138	0.010 0.121	0.009** 0.131
<i>Log Net Income<sub>t</sub></i>	0.030*** 0.000	0.029*** 0.000	0.029*** 0.000	0.030*** 0.000	0.030*** 0.000
Industry & Year fixed effects	YES	YES	YES	YES	YES

**Table 9** (continued)

Dependent Variable: <i>Direct Donations<sub>t+2</sub></i>	(I) Coefficient <i>p</i> value	(II) Coefficient <i>p</i> value	(III) Coefficient <i>p</i> value	(IV) Coefficient <i>p</i> value	(V) Coefficient <i>p</i> value
N	22,188	22,188	22,188	22,188	22,188
Adjusted R <sup>2</sup>	0.3635	0.3661	0.3656	0.3644	0.3637
Model <i>p</i> value	0.000***	0.000***	0.000***	0.000***	0.000***

\*significant at 10% level, \*\*significant at 5% level, \*\*\*significant at 1% level (two-tailed)

All variable coefficients are standardized. See Table 1 for variable definitions

**Table 10** Donor sophistication and the impact of on incentive compensation on future direct donations

Dependent Variable: <i>Log Direct Donations<sub>t+2</sub></i>	(I) <i>Unsophisticated donors</i> Coefficient <i>p</i> value	(II) <i>Sophisticated donors</i> Coefficient <i>p</i> value	(III) <i>No New Restricted Donations</i> Coefficient <i>p</i> value	(IV) <i>New Restricted Donations</i> Coefficient <i>p</i> value
<i>Constant</i>	-0.332 0.439	07.19*** 0.000	-0.637*** 0.000	0.701*** 0.000
<i>Log Bonus<sub>t</sub></i>	-0.048*** 0.000	0.015*** 0.000	-0.041*** 0.000	0.009* 0.089
<i>Log Salary<sub>t</sub></i>	-0.015* 0.085	0.007 0.219	-0.014* 0.064	0.013** 0.042
<i>Log Other Compensation<sub>t</sub></i>	-0.010 0.427	0.003 0.751	-0.001 0.940	-0.008 0.276
<i>Log Total Assets<sub>t</sub></i>	0.089*** 0.000	0.146*** 0.000	0.125*** 0.000	0.180*** 0.000
<i>Administrative Efficiency<sub>t</sub></i>	0.020* 0.073	0.030*** 0.002	0.028*** 0.006	0.025*** 0.001
<i>Log Fundraising Expenses<sub>t</sub></i>	0.384*** 0.000	0.210*** 0.000	0.445*** 0.000	0.168*** 0.000
<i>Log Government Grants<sub>t</sub></i>	0.130*** 0.000	0.041*** 0.000	0.122*** 0.000	0.020*** 0.001
<i>Log Program Service Revenues<sub>t</sub></i>	-0.011 0.519	-0.020** 0.015	-0.041*** 0.001	-0.043*** 0.000
<i>Nonprofit Competition<sub>t</sub></i>	0.028*** 0.006	0.004 0.448	0.013 0.140	0.005 0.363
<i>Log Net Income<sub>t</sub></i>	0.056*** 0.000	0.006 0.174	0.030*** 0.000	0.014*** 0.003
Industry & Year fixed effects	YES	YES	YES	YES
N	11,094	11,094	13,693	8495
Adjusted R <sup>2</sup>	0.2175	0.2794	0.3568	0.3648
Model <i>p</i> value	0.000***	0.000***	0.000***	0.000***

\*significant at 10% level, \*\*significant at 5% level, \*\*\*significant at 1% level (two-tailed)

All variable coefficients are standardized. See Table 1 for variable definitions

continue to find a negative and significant relationship between *Log Direct Donations* and *Log Bonus*; however, in organizations with sophisticated donors (column II) we find a positive and significant relationship between *Log Direct Donations* and *Log Bonus*. To control for the possibility that the restricted donations occurred in prior periods and do not necessarily represent the organizations' current donor pool, we alternatively partition our sample into organizations with (8495 of 22,188 observations) and without (13,693 of 22,188 observations) restricted donations in the current year. Results for these analyses are presented in columns III and IV of Table 10 and confirm the results in columns I and II. Specifically, for organizations with no new restricted donations, we find a negative relationship between bonus pay and future donations, while for organizations with new restricted donations, we find a positive relationship between *Log Bonus* and *Log Direct Donations*.

With respect to control variables, we find that, across almost all models in Tables 9 and 10, donations are increasing with *Log Total Assets*, *Administrative Efficiency*, *Log Fundraising Expenses*, and *Log Net Income*.<sup>30</sup> These results are consistent with prior literature (i.e., Weisbrod and Dominguez 1986; Posnett and Sandler 1989; Callen 1994; Khumawala and Gordon 1997; Tinkelman 1998; Tinkelman 1999, and Tinkelman 2009; Krishnan and Schauer 2000; Parsons 2003; Tinkelman and Mankaney 2007; Parsons and Trussel 2008). With respect to the crowding in or out of other revenue sources, we find, consistent with Petrovits et al. (2011) and Yetman and Yetman (2013), a positive association with *Log Government Grants*; however, we tend to find, consistent with Weisbrod and Dominguez (1986), Posnett and Sandler (1989), and Callen (1994), a negative association with *Log Program Service Revenues*.<sup>31</sup>

#### 5.4 Impact of incentive compensation on future profitability

Table 11 examines the impact of bonuses on future profitability, examining three alternative metrics for profitability as dependent variable: *Log Net Income*, *ROA*, and *Operating Margin*. In columns I, II, III, respectively, we find positive and highly significant coefficients on *Log Bonus*, indicating that bonuses are associated with increased future profitability, even after the reduction in donations documented in Table 9.<sup>32</sup> We also note that we fail to find significant relationships between *Salary* and *Log Other Compensation* and any of our future profitability measures. These relationships are consistent with our conjectures and hypothesis five, indicating that incentive pay brings about higher future profitability by aligning the interests of managers and stakeholders. Briefly addressing our control variables, we find that net income is positively associated with nonprofit size. However, our scaled measures of profitability, *ROA* and *Operating Margin* are not.<sup>33</sup> We also find

<sup>30</sup> The coefficient on net income in column II of Table 10 is positive, but not significantly different from zero.

<sup>31</sup> The coefficient on *Log Program Service Revenues* in column I of Table 10 is negative, but not significantly different from zero.

<sup>32</sup> While we do not tabulate for brevity, we find similar results for the alternative metrics of bonus used in Table 9, i.e., *Bonus/Total Compensation*, *Bonus/Salary*, *Bonus Squared*, and *Excess Bonus*.

<sup>33</sup> Our results are robust to including the lagged dependent variable, i.e., time *t* profitability, as an additional control variable in the model.

**Table 11** Impact of incentive compensation on future profitability

Dependent Variable: <i>Defined</i> <i>in column heading</i>	(I) <i>Log Net</i> <i>Income<sub>t+1</sub></i> Coefficient <i>p value</i>	(II) <i>ROA<sub>t+1</sub></i> Coefficient <i>p value</i>	(III) <i>Operating</i> <i>Margin<sub>t+1</sub></i> Coefficient <i>p value</i>
<i>Constant</i>	0.055*** 0.004	0.227 0.272	0.227 0.161
<i>Log Bonus<sub>t</sub></i>	0.056*** 0.000	0.040*** 0.000	0.024*** 0.000
<i>Log Salary<sub>t</sub></i>	-0.005 0.433	-0.001 0.939	0.002 0.831
<i>Log Other Compensation<sub>t</sub></i>	0.001 0.977	0.003 0.771	0.003 0.752
<i>Log Total Assets<sub>t</sub></i>	0.224*** 0.000	0.024 0.189	0.008 0.407
<i>Log Direct Donations<sub>t</sub></i>	0.043*** 0.000	0.015 0.355	0.030** 0.046
<i>Log Government Grants<sub>t</sub></i>	0.012 0.118	0.022** 0.015	0.002 0.690
<i>Log Program Service Revenues<sub>t</sub></i>	0.100*** 0.000	0.085*** 0.000	0.036** 0.015
<i>Nonprofit Competition<sub>t</sub></i>	0.001 0.828	-0.015 0.104	-0.009 0.148
<i>For-profit Competition<sub>t</sub></i>	-0.022 0.022	0.013 0.299	0.005 0.571
<i>Age<sub>t</sub></i>	-0.013 0.130	0.030*** 0.001	0.002 0.776
<i>Leverage<sub>t</sub></i>	-0.216*** 0.000	-0.251*** 0.000	-0.110*** 0.000
<i>Log Board Size<sub>t</sub></i>	-0.023** 0.024	-0.048*** 0.000	0.016 0.110
<i>Percentage of Independent Directors<sub>t</sub></i>	-0.007 0.397	0.010 0.488	-0.012 0.158
Industry & Year fixed effects	YES	YES	YES
N	31,799	31,799	31,799
Adjusted /Pseudo R <sup>2</sup>	0.1222	0.0563	0.3337
Model p value	0.000***	0.000***	0.000***

\*significant at 10% level, \*\*significant at 5% level, \*\*\*significant at 1% level (two-tailed)

All variable coefficients are standardized. See Table 1 for variable definitions

that *Log Direct Donations* is positively associated with *Operating Margin*, *Log Government Grants* positively associated with *ROA*, and *Log Program Service*

*Revenues* positively associated with all three profitability metrics. Overall it is not surprising that higher revenues are associated with increased profitability.<sup>34</sup>

One potential unintended consequence of basing incentive pay on profitability is that managers would reduce program spending, that is, lower expenses, to mechanically increase net income. To explore and attempt to rule out this possibility, in Table 12 we present additional analyses where we explore the association of bonus pay with the various components of net income. That is, we examine the association of *Log Bonus* with future government grants and program service revenues, as well as future program service expenses, management and general expenses, and fundraising expenses. In column I of Table 12 we find that bonus pay is negatively associated with *Log Government Grants*, consistent with our finding for direct donations above. In contrast, in column II we find a positive and significant association between *Log Bonus* and *Log Program Service Revenues*.

We also find a positive relationship between *Log Bonus* and *Log Program Service Expenses*, indicating that the link between bonus pay and increased profitability is not the result of shrinking mission-related activities. Finally, while we fail to find a relationship between *Log Bonus* and *Log Management and General Expenses*, we find a negative relation between *Log Bonus* and *Log Fundraising Expenses*. While the latter could result from incentive pay driving increased efficiency in fundraising, an alternative explanation is that managers receiving bonus pay are manipulating, that is, understating, their fundraising expenses. Indeed, in untabulated analyses, when we include *Log Bonus* in both the Krishnan et al. (2006) and Yetman and Yetman (2012) fundraising-expense models, we find bonus pay leading to increased misreporting of fundraising expense. To sum up this subsection, we find that incentive pay is associated with increased future profitability, with no evidence to suggest that this finding is driven by a reduction in mission related expenditures. In fact, we find that incentive pay is associated with increased future program service expenses.

## 6 Additional analyses

### 6.1 Controls for endogeneity

The possibility exists that our results are influenced by endogeneity. To control for this possibility, we run a three-stage least squares (3sls) model in which the dependent variables are the three components of compensation—*Log Bonus*, *Log Salary*, and *Log Other Compensation*—and the independent variables are those from model (1) as well as the contemporaneous values of the other two dependent variables and the lagged value of the dependent variable. Accordingly, in the model in which *Log Salary* is the dependent variable, we include contemporaneous *Log Bonus* and *Log Other Compensation* as independent variables, as well as lagged *Log Salary*, which would serve as the instrument following Boone et al. (2007).<sup>35</sup> Our

<sup>34</sup> Our results are robust to including concurrent, instead of lagged, control variables in the model.

<sup>35</sup> While others, such as Bruynseels and Cardinaels (2014) and Balsam et al. (2017), use lagged dependent variables as instruments, Larcker and Rusticus (2010) argue that lagged variables are not proper instruments.



**Table 12** Impact of incentive compensation on components of net income

Dependent Variable: <i>Defined in column heading</i>	(I) <i>Log Government Grants<sub>t+1</sub></i>  Coefficient <i>p value</i>	(II) <i>Log Program Service Revenues<sub>t+1</sub></i>  Coefficient <i>p value</i>	(III) <i>Log Program Service Expenses<sub>t+1</sub></i>  Coefficient <i>p value</i>	(IV) <i>Log Manage-ment and General Expenses<sub>t+1</sub></i>  Coefficient <i>p value</i>	(V) <i>Log Fundraising Expenses<sub>t+1</sub></i>  Coefficient <i>p value</i>
<i>Constant</i>	-0.596*** 0.000	0.442*** 0.000	-0.243** 0.000	-0.449 0.454	-0.156*** 0.041
<i>Log Bonus<sub>t</sub></i>	-0.045*** 0.000	0.014** 0.016	0.011** 0.011	-0.006 0.340	-0.021*** 0.004
<i>Log Salary<sub>t</sub></i>	0.013** 0.036	0.003 0.565	0.007 0.110	0.002 0.648	-0.006 0.290
<i>Log Other Compensation<sub>t</sub></i>	-0.053*** 0.000	-0.021*** 0.000	-0.024*** 0.000	-0.009 0.158	0.015* 0.068
<i>Log Total Assets<sub>t</sub></i>	0.015 0.263	0.112*** 0.000	0.348*** 0.000	0.217*** 0.000	0.032** 0.010
<i>Administrative Efficiency<sub>t</sub></i>	0.036*** 0.000	0.017** 0.045	0.252*** 0.000	-0.229*** 0.000	0.022*** 0.004
<i>Log Fundraising Expenses<sub>t</sub></i>	0.056*** 0.000	-0.020** 0.025	-0.010 0.133	0.064*** 0.000	
<i>Log Direct Donations<sub>t</sub></i>	0.185*** 0.000	-0.074*** 0.000	0.126*** 0.000	0.159*** 0.000	0.454*** 0.000
<i>Log Government Grants<sub>t</sub></i>		0.070*** 0.000	0.086*** 0.000	0.094*** 0.000	0.041*** 0.000
<i>Log Program Service Revenues<sub>t</sub></i>	0.121*** 0.000		0.295*** 0.000	0.264*** 0.000	-0.024** 0.015
<i>Nonprofit Competition<sub>t</sub></i>	0.006 0.472	-0.008 0.141	0.011** 0.010	0.010* 0.095	-0.026*** 0.000
<i>For-profit Competition<sub>t</sub></i>	-0.046*** 0.000	-0.033*** 0.000	0.003 0.700	0.016* 0.053	-0.004 0.671
<i>Age<sub>t</sub></i>	0.009 0.363	0.110*** 0.000	0.020*** 0.000	0.038*** 0.000	0.050*** 0.000
<i>Leverage<sub>t</sub></i>	0.018* 0.094	0.207*** 0.000	0.067*** 0.000	0.053*** 0.000	-0.088*** 0.000
<i>Log Board Size<sub>t</sub></i>	0.071*** 0.000	0.031*** 0.002	0.024*** 0.001	0.049*** 0.000	0.225*** 0.000
<i>Perc of Independent Directors<sub>t</sub></i>	0.035*** 0.000	-0.009 0.253	-0.013* 0.059	0.005 0.678	0.028*** 0.002
<i>Log Net Income<sub>t</sub></i>	0.025*** 0.000	0.057*** 0.000	0.010** 0.012	0.018*** 0.001	-0.021*** 0.000

**Table 12** (continued)

Dependent Variable: <i>Defined in column heading</i>	(I) <i>Log Government Grants<sub>t+1</sub></i>  Coefficient <i>p value</i>	(II) <i>Log Program Service Revenues<sub>t+1</sub></i>  Coefficient <i>p value</i>	(III) <i>Log Program Service Expenses<sub>t+1</sub></i>  Coefficient <i>p value</i>	(IV) <i>Log Manage-ment and General Expenses<sub>t+1</sub></i>  Coefficient <i>p value</i>	(V) <i>Log Fundraising Expenses<sub>t+1</sub></i>  Coefficient <i>p value</i>
Industry & Year fixed effects	YES	YES	YES	YES	YES
N	31,799	31,799	31,799	31,799	31,799
Adjusted /Pseudo R <sup>2</sup>	0.2123	0.3564	0.2168	0.4222	0.5302
Model p value	0.000***	0.000***	0.000***	0.000***	0.000***

\*significant at 10% level, \*\*significant at 5% level, \*\*\*significant at 1% level (two-tailed)

All variable coefficients are standardized. See Table 1 for variable definitions

results, presented in Table 13, panel A, are generally consistent with those in Tables 6 and 7; for example, *Log Net Income* is positively associated with *Log Bonus*, but not *Log Salary* or *Log Other Compensation*.

In addition to modeling our three dependent variables simultaneously, we also model our bonus determinants and consequences models, that is, models (1), (2), and (3), using 3sls. Results presented in Table 13, panel B, confirm that bonuses are higher in more profitable organizations with lower direct donations and government grants, and higher in those facing more competition from other nonprofit organizations. In terms of consequences, our 3sls model continues to find *Log Bonus* negatively related to future *Direct Donations* and positively related to future *Log Net Income*.

## 6.2 Industry analysis

The efficacy and social acceptability of net income and incentive compensation vary by nonprofit mission. In this section, we perform additional analyses to examine this variation using industry to proxy for nonprofit mission. We focus specifically on hospitals and universities, two industries that have been examined extensively in the nonprofit literature (Ballou and Weisbrod 2003; Brickley and Horn 2002; Eldenburg and Krishnan 2003; Erus and Weisbrod 2003; Galle and Walker 2014; Harris 2014; Leone and Van Horn 2005; Parsons and Reitenga 2014; Roomkin and Weisbrod 1999), and for which industry-specific performance measures are available. That is, we augment our determinants model with industry-specific performance measures to examine whether their inclusion affects our inferences.

### 6.2.1 Hospitals

For our hospital subsample, we access Medicare readmission rates available for our sample period and incorporate three standardized measures into our model as additional, industry-specific, performance measures: 30-day readmission rates for

**Table 13** 3SLS models**Panel A: Determinants models**

Dependent Variable: <i>Defined in column heading</i>	(I) <i>Log Bonus<sub>t</sub></i>	(II) <i>Log Salary<sub>t</sub></i>	(III) <i>Log Other Compensation<sub>t</sub></i>
	Coefficient <i>p value</i>	Coefficient <i>p value</i>	Coefficient <i>p value</i>
<i>Constant</i>	0.075 0.970	9.090*** 0.000	-6.178*** 0.000
<i>Log Net Income<sub>t</sub></i>	0.019*** 0.000	0.000 0.979	0.000 0.993
<i>Log Total Assets<sub>t</sub></i>	0.182*** 0.000	0.061*** 0.000	0.058*** 0.000
<i>Administrative Efficiency<sub>t</sub></i>	-0.116 0.562	0.002 0.962	0.177* 0.070
<i>Log Direct Donations<sub>t</sub></i>	-0.023*** 0.000	-0.004*** 0.001	0.005** 0.030
<i>Log Government Grants<sub>t</sub></i>	-0.011*** 0.002	0.002** 0.032	-0.004** 0.014
<i>Log Program Service Revenues<sub>t</sub></i>	0.008* 0.064	0.003** 0.022	-0.003 0.120
<i>Nonprofit Competition<sub>t</sub></i>	0.043*** 0.008	0.004 0.317	0.003 0.707
<i>For-Profit Competition<sub>t</sub></i>	-0.008 0.796	0.009** 0.042	-0.018** 0.034
<i>Written Employment Contract<sub>t</sub></i>	0.030 0.574	0.025* 0.073	-0.033 0.199
<i>Compensation Committee<sub>t</sub></i>	0.241*** 0.000	0.026* 0.096	0.089*** 0.002
<i>Board Approval<sub>t</sub></i>	-0.727*** 0.000	-0.157*** 0.000	-0.105** 0.010
<i>Compensation Consultant<sub>t</sub></i>	0.612*** 0.000	0.100*** 0.000	0.060** 0.043
<i>Compensation Survey<sub>t</sub></i>	-0.140** 0.040	-0.010 0.579	0.130*** 0.000
<i>Other 990 Compensation Comparison<sub>t</sub></i>	-0.052 0.344	0.027* 0.056	0.057** 0.035
<i>Log Board Size<sub>t</sub></i>	0.089* 0.065	0.045*** 0.000	0.051** 0.032
<i>Percentage of Independent Directors<sub>t</sub></i>	-0.751*** 0.000	-0.386*** 0.000	0.138** 0.023
<i>Log Unrestricted Cash<sub>t</sub></i>	0.014*** 0.000	0.000 0.711	-0.006*** 0.002
<i>Log Salary<sub>t</sub></i>	-0.297*** 0.002		0.693*** 0.000
<i>Log Other Compensation<sub>t</sub></i>	0.221***	0.027***	

**Table 13** (continued)

	0.000	0.000	
<i>Log Bonus<sub>t</sub></i>		0.013***	0.035***
		0.000	0.000
<i>Dependent Variable<sub>t-1</sub></i>	0.628***	0.214***	0.604***
	0.000	0.000	0.000
Industry & Year fixed effects	YES	YES	YES
N	31,799	31,799	31,799
Adjusted R <sup>2</sup>	0.5337	0.1577	0.4356
Model p value	0.000***	0.000***	0.000***
<b>Panel B: Consequences models</b>			
Dependent Variable: <i>Defined in column heading</i>	(I)	(II)	(III)
	<i>Log Bonus<sub>t</sub></i>	<i>Log Direct Donations<sub>t+2</sub></i>	<i>Log Net Income<sub>t+1</sub></i>
	Coefficient <i>p</i> value	Coefficient <i>p</i> value	Coefficient <i>p</i> value
<i>Constant</i>	-17.075***	-0.334	0.004
	0.000	0.455	0.994
<i>Log Net Income<sub>t</sub></i>	0.030***	0.030***	
	0.000	0.000	
<i>Administrative Efficiency<sub>t</sub></i>	0.258	0.023***	
	0.407	0.000	
<i>Log Direct Donations<sub>t</sub></i>	-0.046***		0.035***
	0.000		0.000
<i>Log Government Grants<sub>t</sub></i>	-0.034***	0.094***	0.004
	0.000	0.000	0.522
<i>Log Program Service Revenues<sub>t</sub></i>	0.017**	-0.051***	0.056***
	0.015	0.000	0.000
<i>Nonprofit Competition<sub>t</sub></i>	0.114***	0.009**	-0.005
	0.000	0.027	0.383
<i>For-Profit Competition<sub>t</sub></i>	0.004		-0.008
	0.884		0.303
<i>Written Employment Contract<sub>t</sub></i>	0.111		
	0.173		
<i>Compensation Committee<sub>t</sub></i>	0.754***		
	0.000		
<i>Board Approval<sub>t</sub></i>	-1.814***		
	0.000		
<i>Compensation Consultant<sub>t</sub></i>	1.794***		
	0.000		
<i>Compensation Survey<sub>t</sub></i>	-0.042		
	0.688		
<i>Other 990 Compensation Comparison<sub>t</sub></i>	-0.170		
	0.044		
<i>Log Board Size<sub>t</sub></i>	0.055		0.009
	0.455		0.236
<i>Percentage of Independent Directors<sub>t</sub></i>	-1.758***		-0.011

**Table 13** (continued)

	0.000		0.110
<i>Log Unrestricted Cash<sub>t</sub></i>	0.035***		
	0.000		
<i>Log Salary<sub>t</sub></i>	0.557***	−0.008*	0.009*
	0.000	0.075	0.098
<i>Log Bonus<sub>t</sub></i>		−0.028***	0.021***
		0.000	0.001
<i>Log Other Compensation<sub>t</sub></i>		−0.007	−0.017*
		0.353	0.067
<i>Log Total Asset<sub>t</sub></i>	0.564***	0.146***	0.002
	0.000	0.000	0.815
<i>Log Fundraising Expenses<sub>t</sub></i>		0.390***	
		0.000	
<i>Age<sub>t</sub></i>			0.006*
			0.331
<i>Leverage<sub>t</sub></i>			−0.091***
			0.000
Industry & Year fixed effects	YES	YES	YES
N	31,799	31,799	31,799
Adjusted R <sup>2</sup>	0.2255	0.3617	0.0252
Model p value	0.000***	0.000***	0.000***

\*significant at 10% level, \*\*significant at 5% level, \*\*\*significant at 1% level (two-tailed)

Donations and Net Income model variable coefficients are standardized. See Table 1 for variable definitions

heart attack patients, 30-day readmission rates for heart failure patients, and 30-day readmission rates for pneumonia patients. We choose these measures because the Center for Medicare and Medicaid Services is using them as quality metrics under its Hospital Readmissions Reduction Program and penalizing hospitals if the rates are too high (Joynt and Jha 2013). Unfortunately these standardized measures are not available for our full sample period nor for all sample organizations; nonetheless, we are able to find data for 2301 organization-year observations for this additional analysis.<sup>36</sup>

Results for our hospital subsample are presented in Table 14, column I.<sup>37</sup> Here we observe that the three industry-specific hospital variables are not associated with *Log Bonus*. However, we continue to find that *Log Net Income* remains positive and significantly related to *Log Bonus*. While it is puzzling that the industry-specific measures do not influence bonus, our findings are consistent with those of Ballou and Weisbrod (2003), who provide evidence consistent with hospitals being more likely to reward financial performance than quality of care, and Brickley and Van Horn (2002), who find that nonprofit hospitals tie rewards to profitability. We also find that *Log Bonus* is positively related to efficiency, program service revenues, and for-profit competition.

<sup>36</sup> These results are robust to using lagged independent variables. However, this reduces are sample size even further.

<sup>37</sup> Control variables are included in our industry-specific models but not tabulated for brevity.

**Table 14** Industry-specific performance measures

Dependent Variable: <i>Log Bonus<sub>t</sub></i>	<i>Hospital Subsample (I)</i> Coefficient <i>p</i> value	<i>University Subsample (II)</i> Coefficient <i>p</i> value
<i>Constant</i>	−36.842*** 0.000	−82.801*** 0.000
<i>Readmission Rate for Heart Attack<sub>t</sub></i>	0.216 0.431	
<i>Readmission Rate for Heart Failure<sub>t</sub></i>	0.270 0.715	
<i>Readmission Rate for Pneumonia<sub>t</sub></i>	−1.095 0.293	
<i>Retention Rate<sub>t</sub></i>		−0.634 0.393
<i>Enrollment Rate<sub>t</sub></i>		0.463 0.762
<i>Graduation Rate<sub>t</sub></i>		−0.042 0.275
<i>Percent Admitted<sub>t</sub></i>		−0.067** 0.028
<i>Number of Completions<sub>t</sub></i>		−0.617 0.651
<i>Award Levels<sub>t</sub></i>		0.412 0.675
<i>Log Net Income<sub>t</sub></i>	0.129*** 0.002	0.142** 0.018
<i>Administrative Efficiency<sub>t</sub></i>	13.675*** 0.000	−2.590 0.724
<i>Log Direct Donations<sub>t</sub></i>	−0.071 0.302	−0.570*** 0.005
<i>Log Government Grants<sub>t</sub></i>	−0.023 0.572	−0.036 0.763
<i>Log Program Service Revenues<sub>t</sub></i>	1.765*** 0.000	5.193*** 0.000
<i>Nonprofit Competition<sub>t</sub></i>	0.367 0.242	0.456 0.469
Controls included	YES	YES
Year fixed effects	YES	YES
N	2301	3031
Adjusted R <sup>2</sup>	0.0240	0.0338
Model p value	0.000***	0.000***

\*significant at 10% level, \*\*significant at 5% level, \*\*\*significant at 1% level (two-tailed)

See Table 1 for variable definitions

### 6.2.2 Universities

For our subsample of nonprofit universities, we collect industry specific performance measures from the Integrated Postsecondary Education Data System (IPEDS) and add them to our model as additional performance measures. Specifically, we focus on the following six performance measures suggested by prior literature (Harris 2014, Parsons and Reitenga 2014): retention rate, enrollment rate, graduation rate, percentage admitted, number of completions, and award levels. Once again, data is not available for all university firm-year observations in our sample; we are however, able to find data for 3031 organization-year observations.<sup>38</sup>

Results for our university subsample are presented in Table 14, column II. We fail to find a significant relationship between *Log Bonus* and five of the six industry-specific performance measures. We do find a significant negative association between *Log Bonus* and *Percent Admitted*, which is consistent with higher bonuses paid to CEOs in more selective schools. Nevertheless, we continue to find a positive and significant coefficient on *Log Net Income*. We also find that *Log Bonus* is positively related to program service revenues and negatively associated with direct donations.

### 6.2.3 Determinants analysis by industry

In our next analysis, we rerun our determinants model (model 1) after partitioning by the six industry groupings in Table 3, Panel A. While we do not tabulate this analysis (for brevity), we find that profitability appears to be important in setting incentive pay across all sectors. For example, the coefficient on net income is positive in all six industries, albeit with varying levels of significance. With respect to our other performance measures, we find less consistency across industries, and to some extent this “inconsistency” can help explain some of our earlier results. In our main model, that is, Table 6, we find a negative and significant coefficient on *Direct Donations*. While this is an association, not a causal relationship, the result is somewhat incongruous: that is, raising more in donations reduces your compensation. When we examine our industry analyses, we find this negative and significant association only in the religion and other categories. Perhaps not coincidentally, these are also the industries that receive the largest percentage of their revenues from donations.

## 6.3 Size analysis

For completeness, in additional untabulated analyses, we partition our sample into size quartiles based on *Log Total Assets*. Here we also consistently find a positive relationship between *Log Bonus* and profitability in all four size quartiles of our sample. In contrast, the relationship between *Log Bonus* and our competition variables varies in a systematic manner across size quartiles. That is, nonprofit competition is only

<sup>38</sup> Once again, these results are robust to using lagged independent variables. However, once again, this would further reduce our sample size.

associated with higher bonuses in the three smallest size quartiles, while for-profit competition is associated with higher bonuses in the largest size quartile. One inference from this finding is that the largest nonprofits are more likely to compete in the broader executive talent pool. This finding is consistent with that of Roberts and Zamora (2014), who find that larger nonprofits are more likely to have board members who are executive officers in S&P 1500 companies.

#### 6.4 Alternative competition variables

As an alternative to the competition measures included in our main determinants analyses, we use the mean amount of bonus paid in each size/industry (and, for nonprofits, MSA) combination. That is, in place of our frequency measure, we include the mean *Log Bonus* paid by competitors in similar size quartiles and industries (and, for nonprofit competition, geographical locations). We use these variables, which we feel more closely measures the labor market alternatives for CEOs services, as an alternative way of examining the impact of labor market competition on nonprofit bonuses.<sup>39</sup> In untabulated analyses, while we find mean nonprofit bonus pay provided by competing organizations is positively related to the amount of bonus paid, we once again do not find a significant association with mean for-profit bonus pay. We conjecture this is driven by the lack of for-profit competition for most of our nonprofits.

We also test as a second alternative measure of competition: an organization's share of revenues in its MSA/industry combination. Our expectation is that the higher this ratio, the lower competition. We first define this alternative competition variable as an organization's total revenues, scaled by aggregate nonprofit and for-profit total revenues in its MSA/industry combination, and then calculate a similar ratio using just program service revenues, given that for-profit organizations are unlikely to generate donations or grants. In untabulated analyses, we find bonus pay inversely related to market share. Consistent with our earlier results, we interpret this result to mean that organizations with a larger market share (less competition) are less apt to use bonus pay to incentivize their executives. We note that, using either alternative measure of competition, we continue to find a positive and significant relationship between bonus pay and profitability.

#### 6.5 Taxable and nontaxable income

In further untabulated supplementary analyses, we decompose *Log Net Income* into its taxable and non-taxable components. We do so based on the premise that nonprofits with taxable activities are more business-like in nature, and therefore more likely to pay a bonus.<sup>40</sup> In our model of bonus determinants, we find that both taxable and non-taxable *Log Net Income* are positively associated with bonus. When we partition our sample using the existence of taxable revenues, we continue

<sup>39</sup> As reported in footnote 11 we do not use this measure in our primary analysis due to the ensuing reduction in sample size.

<sup>40</sup> We exclude these variables from our main analysis because relatively few entities report taxable revenues (about 16% of our sample) and mean taxable revenues are relatively low (about \$417,000).



to find *Log Net Income* positively associated with bonus whether the nonprofit has taxable program service revenues or not.

## 6.6 Performance noise

In untabulated analyses we also incorporate controls for the noise in our performance metrics following Sedatole et al. (2015). Sedatole et al. (2015) posit and find that incentive weights are decreasing in the noise of performance measures, consistent with predictions of compensation theory (Banker and Datar 1989; Lambert and Larcker 1987). To control for this possibility, we interact each performance metric with its standard deviation. Following this literature, our expectation is that the coefficients on these interactions should be negative. Surprisingly, we find little evidence of this. However, after incorporating this interaction, we continue to find a positive and significant relationship between *Log Bonus* and profitability.

## 6.7 Impact of cross-sectional acceptability of bonus pay on donations

Nonprofit organizations may emulate the compensation practices of their for-profit competitors to attract and retain top employees. In an untabulated analysis we examine whether the negative relationship between bonus compensation and direct donations observed in Table 9 is mitigated by the existence of for-profit competitors. We thus partition our sample between organizations operating with for-profit competition and those without. In this untabulated analysis, we find that donations are negatively related to bonus pay when for-profit competition is *not* present, but that result disappears in the presence of for-profit competition. This is consistent with the proposition that the presence of for-profit competition may make bonus payments more palatable to donors.

## 6.8 Affiliated organizations

Organizations have the incentive to disguise or obscure the amount of compensation paid (Bebchuk and Fried 2004b). One way of doing so would be to create unconsolidated affiliate organizations, which would then make the payments on behalf of the nonprofit. As including these nonprofits could add noise to our analyses, we test the consistency of our results to excluding organizations that report the existence of affiliated organizations, roughly 3.6% of our sample. All of our model results are robust to this alternative specification.

## 6.9 State controls

Differences across states exist in both regulatory environment and economic performance. To control for these differences and to further test the robustness of our results, we re-run our main models including controls for both state fixed effects as well as real income by state. Our real income control variable is drawn from U.S. Census bureau statistics, aggregated by state for our sample period. In untabulated analyses, we find that all of our main results persist after including state fixed effects as well as real income.

## 6.10 Impact of breadth of bonus payments

In our main analyses we focus on the top-paid employee for each firm-year observation in our sample. In untabulated analysis we examine measures of both the number of employees paid a bonus, as well as the sum of bonuses paid to all employees, for each firm-year.<sup>41</sup> We begin by examining the determinants of these two alternative variations of bonus, finding similar results to those reported above; for example, number of employees receiving a bonus, and sum of bonuses paid, are both positively associated with profitability and nonprofit competition. In our consequences analyses, when we examine the impact of these alternative test variables, we continue to find an inverse relationship between bonus pay and future donations as well as a positive association with future profitability.

## 7 Conclusions

Using data available from the redesigned Form 990 Schedule J, we examine the determinants and consequences of bonuses in the nonprofit sector. We find evidence consistent with bonuses being higher and more likely in nonprofits that are more profitable and have greater competition from other nonprofit organizations. While the former is consistent with nonprofits on average, seeking and rewarding profitability, the latter is consistent with competition for the executives' services driving up equilibrium compensation. We also find existence and amount of bonus payments positively associated with available cash, the use of a compensation committee, compensation consultants, and compensation surveys, and negatively associated with monitoring in the form of board approval of bonus pay, charitable nature, and board independence.

In examining the consequences of nonprofit compensation, we find evidence consistent with contributors reacting to bonus pay by reducing future donations, although subsequent analyses provide evidence consistent with sophisticated donors viewing bonuses positively. In contrast, we find that bonus pay is positively associated with future profitability, even after considering the reduction in donations. To provide some comfort that incentivizing executives to increase net income does not lead to unintended consequences, such as a reduction in program services, we examine the association of incentive pay with the major components of net income, finding bonuses associated with increases in both program service revenues and program service expenses. Our results are robust to alternative measures of incentive pay and profitability.

We believe that these are important findings for both academic researchers and nonprofit practitioners interested in understanding and developing effective CEO pay packages in this vital, yet relatively under-studied, sector of our economy. With this study, we intend to lay the groundwork for future research in this area, especially as more detailed and plentiful compensation data becomes available for U.S. nonprofit organizations.

<sup>41</sup> This analysis is limited by the fact that Schedule J reporting is only required for employees earning \$150,000 or more. Therefore, we may be missing bonus pay provided to employees with total compensation below this threshold.

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