Regulating CEO Pay:
Evidence from the Nonprofit Revitalization Act *

Ilona Babenko
W. P. Carey School of Business,
Arizona State University

Benjamin Bennett
A. B. Freeman School of Business,
Tulane University

Rik Sen
UNSW Business School,
University of New South Wales

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ABSTRACT

Using compensation data for 14,765 nonprofit organizations during 2009-2017, we find that CEO pay dropped by 2-3% when new legislation adopted in New York reduced the ability of CEOs to influence their own pay. Despite cuts in pay, CEOs did not exert less effort. Further, nonprofit performance improved after the legislation, as reflected in larger donor contributions, more volunteers, and greater revenues. We show that these results are consistent with the predictions of a simple principal-agent model with compensation rigging. Overall, our results suggest that regulation that targets the pay-setting process can be effective at improving organizational outcomes at nonprofits.

Keywords: executive compensation, regulation, nonprofit organizations, managerial power

JEL codes: G30, G32

I. Introduction

The high level of CEO pay in the United States has been a hotly debated topic among practitioners, academics, and policymakers alike, with two prominent views emerging in the academic literature. The first view maintains that corporate governance failures and the ability of CEOs to influence their own pay have resulted in inefficiently high levels of executive compensation and allowed managers to extract rents (Bebchuk and Fried (2004), Kuhnen and Zwiebel (2009)). In contrast, an optimal contracting view attributes the rising CEO pay to the increasing demand for scarce managerial talent and greater importance of transferable human capital (see, e.g., Murphy and Zabojnik (2004), Gabaix and Landier (2008), and Tervio (2008)). Given potentially very different regulatory responses to high executive pay, and the common unintended consequences of regulation, understanding the forces that give rise to the observed pay practices therefore seems important.[1]

In this paper, we focus on CEO compensation at nonprofit organizations and examine how compensation is affected by regulatory changes in the pay-setting process. There are several reasons why it is particularly interesting to study nonprofits. First, nonprofits are an important part of the U.S. economy. Approximately one-fifth of all firms in the United States are incorporated under nonprofit status (Lakdawalla and Philipson (2006)), with nonprofits accounting for more than 10% of U.S. employment and $1.5 trillion in revenue (based on 2016 estimates). Moreover, an estimated one-quarter of the U.S. adult population volunteers at nonprofits, with the aggregate volunteer hours equivalent to 5 million full-time employees.[2] Second, because nonprofits are insulated from the takeover market and do not have shareholders who monitor their activities (Fama and Jensen (1983)), they can be particularly susceptible to malfeasance

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[1]For example, Murphy and Jensen (2018) analyze CEO pay regulation in the United States over the past century (e.g., the disclosure rules in the 1930s; Section 162(m) of the IRS Code; the Sarbanes-Oxley Act; the Dodd-Frank Act; CEO-employee pay ratio disclosure requirements; and Say-on-Pay) and conclude that many such regulations have led to practices that damaged rather than improved the efficacy of CEO pay.

[2]Source: https://nccs.urban.org/publication/nonprofit-sector-brief-2019.

by executives. Indeed, there are numerous accounts of exorbitant CEO pay and self-dealing practices at nonprofits.[3] An alternative view, however, is that nonprofit CEOs are passionate about their organizations' missions and are legally barred from distributing firm profits to themselves (Hansmann (1980), Glaeser and Shleifer (2001)), which makes nonprofit CEOs unlikely to extract rents. Third, nonprofits have to accommodate the interests of multiple stakeholders, including donors, government, employees, volunteers, and the recipients of their good works. Having many stakeholders could make it more difficult for nonprofit boards to effectively evaluate CEO performance and could result in excess pay or a failure to link pay to performance.

To examine whether CEO pay at nonprofits is set optimally or is an outcome of managerial rent extraction, we study how the level and structure of CEO pay responds to a regulation that decreases the ability of CEOs to influence their own pay. Specifically, the *Nonprofit Revitalization Act of 2013* (hereafter, the Act), which was passed in the state of New York, prohibits officers whose compensation is being deliberated or voted on from participating in board or committee meetings that include such deliberation or vote.[4] By removing the CEO from the room during the compensation deliberation and by preserving the confidentiality of board meetings, this regulation allows for more open communication among nonprofit directors (Malenko (2014)). Importantly, while the new legislation decreased the ability of CEOs to influence pay, it did not prescribe any specific changes to compensation arrangements or affect the contracting environment in any other material way.[5] Therefore, if compensation contracts were set optimally prior to the Act, we would expect no change in CEO pay after its passage.

To inform our empirical analysis, we first build a simple principal-agent model, in

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[3]See examples here: https://www.charitywatch.org/charity-donating-articles/charitywatch-hall-of-shame.

[4]The legislation was set in motion when stakeholders expressed concern that existing processes imposed unnecessary and expensive regulatory burdens on nonprofits. The final version of the Act contained several provisions, such as changing the financial reporting thresholds, simplifying incorporation process and nonprofit classification, requiring written conflict-of-interest and whistleblower policies, establishing a designated audit committee, and changing compensation deliberation procedures. We discuss these provisions in detail in Section III and show that our results also hold for firms in compliance with other governance provisions of the Act.

[5]For example, CEOs could still submit to the board any relevant information ahead of a board meeting.

which a risk-averse CEO exerts costly unobservable effort that results in a noisy signal of firm performance. We extend the standard setting by allowing for a state variable that determines whether the signal is informative about CEO effort. This state variable is observed by the board, but not by firm outsiders. Given these assumptions, an optimal compensation contract designed by an independent board relies both on the signal and on the state variable. A key feature of the model, however, is that some boards are compromised and act in the CEO's best interest. Such boards generally approve higher CEO pay but are constrained by public outrage (from regulators and watchdogs) in the spirit of Bebchuk, Fried, and Walker (2002), Morse, Nanda, and Seru (2011), and Dasgupta and Noe (2019). Specifically, compromised boards have to ensure that the CEO pay falls within the range that outsiders would expect an independent board to set, given the observed signal. The model provides a number of testable predictions. As the fraction of compromised boards decreases, on average, we expect: (i) lower CEO pay, (ii) higher CEO effort, (iii) better firm performance, and (iv) higher pay-performance sensitivity.[6] We interpret the passage of the Act in New York as a decrease in the fraction of compromised boards and test the model predictions.

Using nonprofit data for the period 2009–2017 from IRS Form 990 and the associated Schedule J, we find that total CEO pay decreases on average by 2-3% and by more than 5% in commercial nonprofits as a result of the Act. These estimates are of interest given the disagreement in the finance literature over whether governance reforms, such as the Sarbanes-Oxley Act, affect executive pay in for-profits (see, e.g., Chhaochharia and Grinstein (2009) and Guthrie, Sokolowsky, and Wan (2012)). Figure 1 displays the estimates from a difference-in-differences (DD) specification with firm and industry-year fixed effects. The blue solid line shows that after the Act, nonprofit CEO pay in New York dropped relative to that in other states. For comparison purposes, the

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[6]The effect of compromised boards on CEO pay is not obvious. Even though such boards increase CEO pay *ex post*, the CEO exerts lower effort *ex ante*, which has a negative effect on firm performance and expected incentive pay. We show that the former effect dominates, resulting in higher CEO pay.

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red dashed line shows the estimates for the sample of non-CEO executives, where we observe no effect of the Act on pay. We obtain similar results from the difference-in-differences-in-differences (DDD) specification with firm-year fixed effects, where we compare the pay of CEOs and other executives at the same nonprofit, located in New York and in other states, before and after the Act. In addition, we find that CEO pay becomes more sensitive to firm performance after the Act, which is consistent with the prediction of the model.
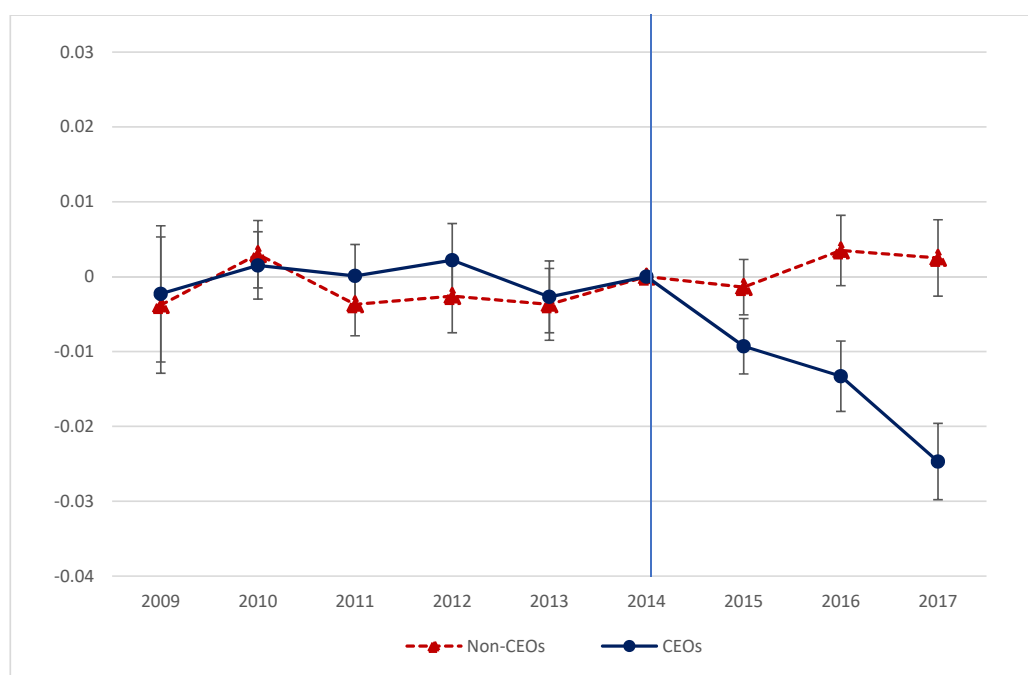
Figure 1. Compensation of CEOs and Other Executives. We estimate the annual change in pay of NY executives relative to that of non-NY executives in the same industry (with the base year of 2014). The estimates and 95% confidence intervals for CEOs are shown in blue, while the respective values for other nonprofit executives are shown in red.

The second contribution of the paper is to show how changes in pay affect CEO effort and firm outcomes. Here, the model predicts that when CEO influence on pay decreases, the compensation contract becomes more efficient, which leads to higher CEO effort and better firm outcomes. To test this prediction, we take advantage of nonprofit reporting requirements and measure the effort of executives by the number

of hours they work each week.[7] We find that after the Act and subsequent pay cuts, CEOs did not reduce the number of hours they spent at work, and in fact, worked slightly more hours.[8] Furthermore, we do not find any abnormal CEO turnover in New York relative to other states following the Act. These results provide support to the view that nonprofit CEOs extracted rents prior to the Act.

Our next set of tests focuses on firm performance after the adoption of new legislation. Since nonprofits do not pursue profit maximization, quantifying their performance is challenging (Eldenburg, Hermalin, Weisbach, and Wosinska (2004)). Following prior literature (see, e.g., Baber, Daniel, and Roberts (2002), Aggarwal, Evans, and Nanda (2012), and Balsam and Harris (2014)), we therefore use several measures of nonprofit performance—government grants and contributions by donors, the number of volunteers the organization attracts, administrative efficiency, and revenues generated per employee. Overall, we find an improvement in nonprofit performance, although some metrics show no change. Specifically, there is no significant change in the administrative efficiency of nonprofits. On the other hand, more volunteers choose to work for nonprofits after the legislation's passage, and there is an increase in donor contributions and grants. Finally, we find higher revenue generated per employee.

On balance, our results show that regulation that targets the pay-setting process reduces CEO pay and has positive effects on firm performance. Of course, given that we study nonprofits, it is unclear whether these conclusions can be generalized to for-profits. Nevertheless, the economic forces in the for-profit sector are likely to be similar,

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[7]Most of the literature on for-profits cannot measure CEO effort because of a lack of data. Notable exceptions include Yermack (2014), who identifies CEO absences when they travel to their vacation homes, and Biggerstaff, Cicero, and Puckett (2017), who measure effort by the amount of golf a CEO plays. Recently, Ben-Rephael, Carlin, Da, and Israelsen (2020) measured CEO effort by the amount of time spent on Bloomberg terminals. Their measure, however, does not capture the time executives spend in meetings with employees and investors, which is an important part of their job. For example, Bandiera, Guiso, Prat, and Sandun (2011) follow the activities of Italian CEOs and find that CEOs spend 85% of their time in meetings with other people.

[8]In theory, executives could misreport the number of hours worked. Nevertheless, the Act did not in any way make misreporting easier. Therefore, to explain our results by misreporting, one would have to explain why misreporting increased in New York but not in other states and why it increased for CEOs but not for other top executives. In addition, the results on better firm performance provide further support for greater CEO effort.

and our model is broad enough to apply in other settings. Further, our findings of greater pay reductions at more commercial and non-charitable nonprofits, which are more similar to for-profit firms, suggest some generalizability. Finally, by informing the debate on reform in other states and countries, our results have policy implications for the nonprofit sector—a sector that accounts for a significant share of employment and provides vital services to the rest of economy.

The remainder of this paper is organized as follows. The next section offers a review of the related literature. Section III provides details on the *Nonprofit Revitalization Act of 2013*. Section IV presents a principal-agent model that helps us formulate the empirical hypotheses. Section V describes sample construction and presents summary statistics. Section VI presents our empirical results, and the last section concludes.

II. Related Literature

Our paper contributes to the growing literature on nonprofits. The theoretical contributions focus on two unique features of nonprofits: a non-distribution constraint that bars people controlling the firm from distributing profits to themselves, and a prosocial motivation of nonprofit employees (Hansmann (1980), Glaeser and Shleifer (2001), Besley and Ghatak (2005)). For example, the ability of nonprofits to attract employees committed to a cause may allow these firms to pay lower wages (Besley and Ghatak (2005)). At the same time, high-powered incentives may be suboptimal in nonprofits because extrinsic incentives could crowd out the intrinsic motivation of agents or promote an undesirable focus on a narrow set of metrics (Bénabou and Tirole (2006), Holmstrom and Milgrom (1991)). Nevertheless, Hartzell, Parsons, and Yermack (2010) find that church ministers have significant pay-performance sensitivity—a setting where intrinsic motivation and commitment of agents are arguably high.

Several papers focus on the determinants of compensation policies at nonprofits. For example, Baber, Daniel, and Roberts (2002) find that changes in compensation

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are related to changes in spending on programs that advance organizational objectives, whereas Sedatole, Swaney, Yetman, and Yetman (2015) find that compensation is related to revenue and increases in net assets. A related literature examines the implications of high CEO pay and governance failures. Here, Balsam and Harris (2014), Harris, Petrovits, and Yetman (2015), and Balsam and Harris (2018) find that the disclosure of high CEO pay, weak governance, and high CEO bonuses are all associated with lower donations to nonprofits. Our study complements this literature by showing that, legislation that targets the pay-setting process leads to larger donations and grants. Further, we document the effect of such legislation on CEO effort, the number of volunteers, and revenue generation.

More broadly, our paper contributes to the literature on rising CEO pay (Murphy (1999), Frydman and Jenter (2010), and Edmans, Gabaix, and Jenter (2017)). Several explanations for increasing CEO pay have been offered, including rent extraction by executives (Bebchuk and Fried (2004), Kuhnen and Zwiebel (2009), Bertrand and Mullainathan (2001), Yermack (1997)), technological change and increase in the marginal product of CEO (Cuñat and Guadalupe (2009), Garicano and Rossi-Hansberg (2006)), competition for CEOs with general skills (Murphy and Zabojnik (2004), Frydman (2019), Custódio, Ferreira, and Matos (2013)), increase in firm size (Gabaix and Landier (2008), Tervio (2008)), and various institutional changes. Our paper adds to this literature by showing that in a setting with no meaningful changes in the labor market for CEOs or adoption of new technologies, CEO pay drops when the pay-setting process is changed. Thus our evidence offers support for the view that through their influence over the pay-setting process, CEOs of nonprofits are able to extract rents.

Our paper also adds to the literature on the regulation of executive compensation. For example, Perry and Zenner (2001) find that greater disclosure requirements lead to lower CEO salaries and higher pay-performance sensitivity. In contrast, Rose and Wolfram (2002) find that legislation in 1993 that capped the tax deductibility of man-

agement compensation not qualified as "performance-based" had no effect on the total compensation. Dhole, Khumawala, Mishra, and Ranasinghe (2015) and Neely (2011) find that another state-level nonprofit law, the California's Nonprofit Integrity Act (NIA) of 2004, led to an increase in nonprofit CEO pay.[9] Chhaochharia and Grinstein (2009) examine how the Sarbanes-Oxley Act and the new stock exchange rules affected CEO pay at public firms and find a decrease in pay. However, their effect is attributed to the requirement of greater board independence and not to the independence of compensation committees. Further, Guthrie, Sokolowsky, and Wan (2012) find that removal of two outliers from the sample significantly reduces the magnitude of the effect.[10] Finally, by reviewing CEO pay regulations in the United States, Murphy and Jensen (2018) conclude that the best way for government to fix executive compensation is to stop trying to fix it. They argue that regulations have imposed enormous costs on organizations, their shareholders, and social welfare. Although we generally share their view that salary caps and preferential tax or accounting treatment can have large negative consequences, we nevertheless provide evidence that regulation of the pay-setting process can allow firms to contract more efficiently.

III. Nonprofit Revitalization Act of 2013

Our main identification comes from the *Nonprofit Revitalization Act of 2013*, which was signed into law by New York Governor Andrew M. Cuomo on December 18, 2013 and took effect on July 1, 2014. The Act was based on recommendations submitted to the Attorney General by a group of nonprofit leaders who sought to reduce unnecessary regulatory burdens while simultaneously enhancing governance and accountability. The legislation was meant to mitigate concerns that cumbersome procedures for incorporation and obtaining state approvals in New York prompt many charities to incorporate

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[9]In contrast to New York legislation that focused on the pay-setting process, California Nonprofit Integrity Act of 2004 required executive compensation to be "just and reasonable."

[10]Another related paper is by Vafeas (2003), who finds a positive correlation between insiders in compensation committees and CEO pay at public firms during the period 1991–1997.

in states with more favorable laws. Specifically, the Act increased the thresholds for financial reporting, removed the requirement to designate an entity as Type A, B, C, or D, removed the requirement to submit the list of activities in a certificate of formation and seek the approval of the Commissioner of Education for the incorporation of some nonprofits, and allowed the Attorney General to approve a modification of the purposes in a firm's certificate of incorporation in lieu of Supreme Court approval.[11]

The main governance changes effected by the Act were: (i) nonprofits were required to adopt a written whistleblower policy; (ii) nonprofits were required to establish a designated audit committee; (iii) nonprofits were required to adopt a conflict-of-interest policy; and (iv) nonprofits were required to change their compensation deliberation procedure by not allowing persons who benefit from a compensation arrangement to be present or participate in any deliberation or vote on their compensation.[12] We focus on this last provision of the Act, which essentially removes CEOs from the room when their compensation is being determined, whereas prior to the law they could be present and partake in discussions regarding their compensation package.

Anecdotal evidence suggests that CEOs often dictate the agenda of board meetings and leave little time for any contentious discussions. Further, the directors may be afraid to openly confront the CEO because they fear they might appear less knowledgeable or because of possible repercussions. By modeling board communication and voting decisions, Malenko (2014) shows that executive sessions that exclude the management

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[11]Figure IA.1 of the Internet Appendix shows that the trends in firm entry to New York and neighboring states were similar during the sample period. We also searched for any compensation-related scandals prior to the Act and found one such nonprofit scandal in New York in 2008-2009 ("Reaping Millions in Nonprofit Care for Disabled," *New York Times*, August 2, 2011). Even if this scandal had shaped the nonprofit legislation we study, it is highly unlikely that the results on lower CEO compensation after the Act can be attributed to the scandal since we find no differential compensation trends in NY when compared with other states in the period 2010-2014.

[12]Another important governance provision contained in the original Act was a prohibition against any employee serving as chair of the board of directors. However, this provision was not effective until January 1, 2016; then it was delayed to January 1, 2017, and later it was reversed (an employee of a nonprofit could serve as board chair if at least two-thirds of the board approved this decision). The provisions of the Act reducing the regulatory burden included, among other things, simplified classification of nonprofit types, elimination of the requirement to include a list of intended activities, reduction in reporting requirements, and simplification in authorization of real estate transactions.

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promote effective communication among board members. Therefore, removal of CEOs during the discussion of their own compensation can result in more open communication among board members and allow for the adoption of more efficient compensation policies.

At the same time, there are reasons to believe that the first three governance provisions of the Act are unlikely to affect executive compensation to a significant extent. First, either as a best practice or to ensure compliance with federal laws, most nonprofits had voluntarily adopted conflict-of-interest and whistleblower policies years prior to the Act. Indeed, 92% of NY-based nonprofits had a whistleblower policy in place before the Act, and 96% had a conflict-of-interest policy. Similarly, over 93% of NY-based nonprofits had a designated audit committee before the Act.[13] Second, we can directly control for the existence of and changes in these policies. Finally, our results are robust to focusing only on the sample of nonprofit organizations for which these three provisions of the Act did not apply by limiting the sample to those nonprofits that already had the newly required policies in place.

We focus on the CEOs in our empirical tests because they are the employees most affected by the Act. First, the CEO is typically the only employee on the board of directors. Second, CEOs are likely to have the most power over their compensation negotiation because of their central role in the decision-making process at the firm (see Adams, Almeida, and Ferreira (2005) on the role of CEO power in firm decisions).

IV. Model

Before turning to the empirical analysis, we develop a simple principal-agent model with compensation rigging. We consider two types of nonprofit boards—independent and compromised—and solve for the optimal CEO compensation contract in each case. The independent board maximizes the expected firm output less the compensation costs.

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[13]The Act required such committee to be made up of independent directors or the entire board of directors, with only independent directors participating in voting.

The decisions of the compromised board are modeled after Morse, Nanda, and Seru (2011). To mimic the independent board and not to reveal its type to firm outsiders, the compromised board pays the CEO an amount that could come from the independent board, given the information *observable to outsiders*. However, since the board has more information than firm outsiders about the CEO's contribution to firm performance, the contract by the compromised board is suboptimal. This feature of the model is similar to the pay-for-luck models of Bertrand and Mullainathan (2001) and Garvey and Milbourn (2006). The difference, however, is that in those models the "luck" (industry performance) is observable by outsiders and thus they are able to tell when the payment is for luck. This is not the case in our model. Also, pay-for-luck models do not formally derive the CEO's compensation contract under compromised boards.

We link the model to the data by considering how the Nonprofit Revitalization Act, which likely reduced the fraction of compromised nonprofit boards in New York, affects CEO compensation and firm performance. The model makes the following predictions. After the Act, on average, we expect: (i) lower CEO pay, (ii) higher CEO effort, (iii) better firm performance, and (iv) higher pay-performance sensitivity.

A. Setup

There is one period and two dates $t \in \{0, 1\}$. At the initial date $t = 0$, the nonprofit board hires a risk-averse CEO and offers her a compensation contract to motivate the costly effort provision. The CEO's effort e can take two values $e \in \{e_H, e_L\}$, where $e_H > e_L$. Following Burkart, Gromb, and Panunzi (1997), we assume that effort is unobservable and is associated with a personal non-pecuniary cost e to the CEO. Random and unobservable firm output $V(e)$ depends on the CEO's effort, and it is known that $E[V(e_H)] = V_H$ and $E[V(e_L)] = V_L$.

At date $t = 1$, but before any compensation is paid to the CEO, the board and firm outsiders observe a verifiable signal of firm performance Y. The agent also observes the

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signal only at that time or at least after she has put in her effort. The signal can be either *Good* or *Bad*, $Y \in \{Y_G, Y_B\}$, and can depend on the CEO's effort. Specifically, state $s \in \{0,1\}$ determines the relation between effort and the signal. In state $s = 0$, the CEO's effort has no effect on observable (or true) firm performance, with the two signal realizations Y_G and Y_B being equally likely. Hence, signal Y is uninformative about the CEO's effort in this state.

In contrast, in state $s = 1$ the signal is informative about the effort. If the effort is e_H, then the signal is Y_G with probability $p_H > 1/2$ and Y_B with probability $1 - p_H$. Similarly, if the effort is e_L, then the signal is Y_G with probability $p_L \leq 1/2$ and Y_B with probability $1 - p_L$. We assume the two states $s \in \{0,1\}$ are equally likely and that the state is observed by the board at $t = 1$, just before contract payments are made. The outsiders, however, do not observe the state and only see the signal of firm performance.

The board pays compensation $w(Y, s)$ to the CEO at $t = 1$ after observing signal Y and state s. The CEO has an outside opportunity that gives her utility U_R and maximizes her expected utility from compensation minus the cost of effort

$$\max_{e \in \{e_H, e_L\}} E\{U(w(Y, s))\} - e, \tag{1}$$

where $U(\cdot)$ is an increasing and strictly concave utility function of the CEO. For tractability purposes, we also make the following assumption.

Assumption 1. *Function $\frac{1}{U'(W)}$ is weakly convex.*

The weak convexity condition is satisfied by many commonly used utility functions, such as log-utility, $U(W) = log(W)$, CARA utility, $U(W) = -e^{-aW}$, and CRRA utility, $U(W) = \frac{W^{1-\eta}}{1-\eta}$ for $\eta > 1$.

As in Morse, Nanda, and Seru (2011), we consider boards of directors of two types— independent boards, which aim to maximize firm performance,[14] and compromised

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[14]Unlike public firms, which seek to maximize shareholder value, nonprofit firms have no clearly defined

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boards, which are subject to considerable influence by the CEO. We assume that a fraction θ of all nonprofit boards are compromised and study how the average CEO compensation, effort, and firm performance change when we vary this parameter. We next solve for the optimal compensation contract designed by an independent board.

B. Independent Board

The objective of the independent board is to maximize the expected output of the firm, V, minus the expected compensation costs. We assume that model parameters and values V_H and V_L are such that it is always optimal for the independent board to elicit a high level of effort. Formally, the board's problem is

$$\max_{w(.)} E\{V(e^*)\} - E\{w(Y, s)\}, \tag{2}$$

subject to the CEO's individual rationality and incentive-compatibility constraints.

When $s = 0$, the signal is uninformative about the CEO's effort. Because the CEO is risk-averse, it is optimal for the board to keep pay fixed in this state, irrespective of realized signal Y. Therefore, the possible payments $w(Y, s)$ made to the agent are

$$w(Y_G, 1) = w_G, \tag{3}$$

$$w(Y_B, 1) = w_B, \tag{4}$$

$$w(Y, 0) = w_0, \ \ Y \in \{Y_B, Y_G\}. \tag{5}$$

Given this compensation contract, it is optimal for the agent to apply a high level of effort $e^* = e_H$ if the incentive-compatibility constraint below is satisfied:

$$U(w_G) - U(w_B) \geq \frac{e_H - e_L}{\frac{1}{2}(p_H - p_L)}. \tag{6}$$

In addition, the individual rationality constraint for the CEO has to be met. For the optimal effort level e_H, this constant can be written as

$$\frac{1}{2}\left(p_H U(w_G) + (1 - p_H)U(w_B)\right) + \frac{1}{2}U(w_0) - e_H \geq U_R. \tag{7}$$

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owners, and their performance often cannot be summarized by a single metric. This feature of nonprofits can make it easier for the CEO to exert power over the board.

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Given all the constraints on the optimal contract, we obtain the following result.

Lemma 1. *The payoffs under the optimal contract designed by the independent board satisfy $w_G > w_0 > w_B$.*

C. Compromised Board

When the board is compromised, the CEO can set her own pay subject to the public *outrage* constraint. Essentially, the observed CEO pay has to be indistinguishable from an optimal pay structure (with an independent board) given all the information available to the public (the realization of signal Y). If this is not the case, then the outsiders (regulators, IRS, watchdogs) will recognize that there are governance failures at the firm and will impose substantial costs on the CEO and the board of directors.[15] Given the optimal contract by the independent board, a compromised board will pay the CEO amount w_G whenever performance is good (claiming the CEO was responsible for it) and amount w_0 whenever performance is bad (claiming it was outside of the CEO's control). The table below displays the CEO's payoffs for all scenarios.

		Independent Board		Compromised Board	
State	Signal	CEO Pay	Probability	CEO Pay	Probability
$s = 1$	$Y = Y_G$	w_G	$p_H/2$	w_G	$p_L/2$
$s = 1$	$Y = Y_B$	w_B	$(1 - p_H)/2$	w_0	$(1 - p_L)/2$
$s = 0$	$Y = Y_G$	w_0	$1/4$	w_G	$1/4$
$s = 0$	$Y = Y_B$	w_0	$1/4$	w_0	$1/4$

Proposition 1. *(**CEO Effort and Firm Performance**)*

(i) When the board is compromised, the CEO's optimal effort is $e^* = e_L$.

(ii) The average signal, $E[Y]$, is decreasing in the fraction of compromised boards, θ.

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[15]The optimal contract by the independent board can also be viewed as the "norm," deviations from which are costly. The costs can come from negative media coverage, state investigations of controversial pay practices, and reduction in donor grants. In a survey on executive pay, Edmans, Gosling, and Jenter (2021) find that 67% of directors of for-profit firms say they would sacrifice shareholder value to avoid controversy on CEO pay. In the case of nonprofits, the costs of deviations from the "norm" can also be explicit in the form of *excise taxes* levied by the IRS on the board and the executive receiving excessive pay.

(iii) The average firm performance, $E[V]$, is decreasing in the fraction of compromised boards, θ.

The low effort of the CEO follows directly because the incentive-compatibility constraint (6) is binding under the optimal contract designed by the independent board. Therefore, any pay structure that reduces the payoff differential between the high and low effort of the agent causes her to switch to low effort, which in turn results in worse firm performance (both observable and actual).

Proposition 2. *(CEO Pay and Pay-Performance Sensitivity)*

(i) The average CEO pay is increasing in the fraction of compromised boards, θ.

(ii) The average pay-performance sensitivity of the CEO's compensation contract is decreasing in the fraction of compromised boards, θ.

When the board is compromised, the CEO always chooses the highest possible pay given the realized signal, Y, which increases her pay ex post. However, because the CEO exerts lower effort, the probability of observing signal Y_G is lower, which tends to decrease CEO pay. The above proposition shows that the ex post effect always dominates, and the CEO's expected pay is higher when the board is compromised.

We next take the model's predictions from Propositions 1 and 2 to the data.

V. Sample and Summary Statistics

A. Sample

We obtain nonprofit firm and executive data from the IRS.gov website. Specifically, we download data from IRS Form 990 and the respective Schedule J filed by nonprofit firms for all accounting periods between 2009 and 2017. These data are compiled by the IRS's Statistics of Income (SOI) program. Form 990 records firm-level accounting information, such as total assets, revenues, liabilities, and program expenses, for all nonprofits that have at least $50M in assets plus a random sample of smaller orga-

nizations. We merge data from Form 990 with data from Schedule J, which contains compensation information for executives earning more than $150,000 per year. While Schedule J reports information for individual executives, including their names and titles, the SOI does not digitize identifying information. Thus we are unable to identify the CEO among all listed executives using these data. Following prior literature (Frumkin and Keating (2010) and Balsam and Harris (2018)), we therefore classify the highest-paid officer as the CEO. To minimize the number of false positives, we remove from the sample all executives who mark the box "former" for their position in the firm, all executives who work part-time, and all firms that delegate CEO duties to a management company or other organization. In Section VI.H, we use an alternative source of data from Registry of Open Data on Amazon Web Services (AWS), which contains electronic 990 forms filed with the IRS, and classify CEOs based on their job titles. Our results become stronger when we use job titles to identify CEOs.[16]

The merging of Form 990 with Schedule J yields a sample of 554,288 executive-year observations from 2009 through 2017. Of these, 81,911 are CEO-year observations. We begin in 2009 because this is the first accounting period following an extensive change in the format and structure of the data collected from IRS Form 990.[17] We end the sample in 2017 because it is the last year for which the data are available.

B. Summary Statistics

Figure 2 shows the distribution of the different types of nonprofits in our sample. *Health General and Rehabilitative* and *Educational Institutions* are the most common categories, accounting for 27% and 19% of our sample, respectively. Summary statistics for all executives and CEOs are reported in Table 1, Panels A and B. The mean compen-

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[16]Because the AWS database does not collect data from paper filings, it covers fewer nonprofit organizations. In particular, we have 14,765 nonprofits in our main sample and 6,900 nonprofits in the electronic filers' sample.

[17]Prior to 2009, there were around 450 data items reported on Form 990, but this number increased to 700 in 2009. Further, the classification of executive compensation data changed between 2008 and 2009. Prior to 2009, nonprofits were only required to report three components of individual compensation. In 2009, the reported compensation categories grew to five (base compensation, bonus and incentive compensation, other reportable compensation, retirement plans and deferred compensation, and nontaxable benefits).

sation is $388K for all executives and $597K for CEOs. These values are considerably smaller than the respective values for all executives and CEOs of large public firms covered by the Execucomp database, who earn $2.1M and $5.4M, on average. This is to be expected since the nonprofit organizations we study are inherently different from public firms and are much smaller in size than the firms in Execucomp.[18]

The largest component of pay for both executives and CEOs is base compensation, which makes up 69.0% and 60.8% of the total for executives and CEOs, respectively. Bonus and incentive pay is the second largest component for both groups, making up 11.2% and 13.9%, respectively. Perquisite pay is quite large for CEOs, totaling $62K, on average, or 10.3% of total CEO pay. The treatment variable, Law, which is equal to one for firms located in New York when all or a majority of their fiscal year takes place after July 1, 2014, affects 4% of all executives in the sample. Finally, we observe that hours worked per week average 43.5 for all executives and 43.6 for CEOs.

In Panel C of Table 1, we present summary statistics for firm characteristics and governance variables in our sample. The average nonprofit organization has seven executives, reports $265M in total assets and $129M in revenues, and has 599 volunteers and a leverage ratio of 39%. An important metric for nonprofits emphasized by the prior literature is administrative efficiency (Baber, Daniel, and Roberts (2002)), which is calculated as program expenses scaled by total expenses. This is a measure of how much of an organization's expenses are spent on programs related to the nonprofit's core mission versus supporting services, such as management, salaries, and fundraising expenses. In our sample, the administrative efficiency is 65% on average.

We also report statistics on specific nonprofit governance variables. Board independence at nonprofits has a mean of 87%, which is substantially higher than the value at for-profit firms. The vast majority of firms have conflict-of-interest (94% of firms) and

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[18]There are many confounding factors that make the direct comparison of CEO pay in for-profit and nonprofit firms difficult, such as differences in risk of pay, frequency of CEO turnover, prominence of altruistic motives for accepting a job, and differences in CEO ability and performance. For example, regarding performance, Dahiya and Yermack (2019) show that nonprofit endowment funds significantly underperform market benchmarks.

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whistleblower policies (87% of firms) in place and have a formal audit committee (92% of firms). Family relationships (defined as family or business relationships between any officers, directors, trustees, or key employees) are much less prevalent, occurring in 22% of firms. In terms of the pay-setting process, approximately half of firms (55%) use a compensation committee and a quarter of firms (28%) hire an independent compensation consultant. Only a third of nonprofits (33%) enter into formal employment contracts with their executives, while two-thirds (65%) review other firms' 990 forms for compensation benchmarking purposes.

Table 2 presents the means of the total CEO compensation and its growth rate, as well as the means of some other variables prior to the Act. Both the level and growth rate of annual compensation are similar for CEOs located in New York state and those located in all other U.S. states. These results suggest that the 'parallel trends' assumption is more likely to be satisfied in our setting. Further, none of the variables we consider have statistically significant different means in New York and other states.[19]

VI. Results

Our main focus is on the effect of the New York Nonprofit Revitalization Act of 2013 on CEO pay. The model predicts that, as the power of CEOs to influence the pay-setting process decreases after the Act, the total CEO pay should also decrease.

To examine the relation between the Act and CEO pay, we employ difference-in-differences and triple-difference approaches. A simple way to examine how compensation is affected by new legislation would be to track changes in CEO pay in the state of New York around the adoption of the Act. However, this single-difference approach would not account for trends in CEO pay that are due to forces other than the adopted legislation. To better control for possible omitted trends in CEO compensation in nonprofits, we therefore use as a control group the nonprofit CEOs in other U.S. states,

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[19]In the Internet Appendix (Table IA.1), we show that our results are robust for controlling for any pre-law differences in contributions and grants and revenue per employee.

which yields a difference-in-differences (DD) estimate. In particular, we estimate the following model:

$$\log\left(CEO\ Pay_{it}\right) = \gamma_i + \delta_t + \beta_1 Law_{it} + Z'_{it}\beta + \varepsilon_{it}, \tag{8}$$

where the indices i and t refer to firms and years, respectively, and the unit of analysis is firm-year. The dependent variable is the logarithm of CEO pay for a nonprofit firm in a given year. Law_{it} is equal to one for firms located in New York state when all or a majority of their tax year occurs after the effective date of the Act (July 1, 2014). The coefficient of interest is β_1, which because of the log specification can be interpreted as a percentage change in CEO pay. Finally, the vector Z includes a set of controls. Our baseline set of controls includes firm size (*Log of Assets*) and policies that could potentially change as a consequence of the Act, which in turn could affect CEO pay. Specifically, we use three indicator variables that are turned on if the firm has a conflict-of-interest policy, a whistleblower policy, and an audit committee, respectively. We also consider a larger list of controls, which includes the baseline set of controls, as well as administrative efficiency, the logarithm of revenues, leverage captured by debt-to-assets ratio, the fraction of independent directors on the board, and an indicator for whether key employees have a family or business relationship.

We also employ a more stringent triple-difference specification that uses data on CEOs and other nonprofit executives. We take advantage of the fact that while the Act affected the way in which CEOs are able to negotiate their pay, it had little to no effect on the pay-setting process for other nonprofit executives. Specifically, we compare the DD estimate of CEO pay with the DD estimate of pay of other executives at the same nonprofits. This yields a difference-in-differences-in-differences (DDD) model that accounts for differential regional trends in executive pay, among other things. Specifically, we estimate the following model

$$\log\left(Pay_{ijt}\right) = \gamma_{it} + \delta_{jt} + \zeta_{ij} + \beta_1 Law_{it} \times CEO_{ijt} + \varepsilon_{ijt}, \tag{9}$$

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where the indices i, j, and t refer to firms, executives, and years, respectively, and the unit of analysis is firm-executive-year. The dependent variable is the logarithm of the total executive pay during the fiscal year, the variable CEO_{ijt} is equal to one if executive j is a CEO of firm i in year t. Law_{it} is defined in the same way as before. The coefficient of interest is β_1.

We include the following fixed effects in the specification: $Firm \times Year$, $Firm \times CEO$, and $Year \times CEO$. Specifically, $Firm \times Year$ fixed effects absorb all observed and unobserved heterogeneity at the firm-year level and therefore remove the effect of any factors that uniformly affect the compensation of CEOs and non-CEO executives of the same firm. $Firm \times CEO$ fixed effects absorb time-invariant heterogeneity in the differential pay between the CEO and other executives at a particular firm. Finally, $Year \times CEO$ fixed effects account for differential time trends in the pay of CEOs relative to other executives. Since the Law affects all the firms in a state at the same time, we should also account for possible correlation in observations across different firms in the same state. Therefore, we cluster standard errors at the state level.[20]

Finally, we show results using another DDD setting where we replace $Year \times CEO$ fixed effects with $Year \times Industry \times CEO$. This specification further allows us to control for industry variation in the time trends in the differential pay of CEOs relative to other executives.

A. Total Compensation

Table 3 reports the regression coefficients of the above models where the dependent variable is the log of total CEO compensation in Columns 1-3 and the log of total executive compensation in Columns 4-6. In the first three columns, we estimate equation (8) without any controls, then add the baseline set of controls, and finally add the extended set of controls. The coefficient on Law indicates that CEO pay is significantly

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[20]Our main results are also robust to clustering by firm.

lower following the passage of the Act. The coefficient on *Law* is almost identical when we add controls. Greater firm size, captured by total assets and revenues, is associated with higher executive pay. Further, nonprofits with family relationships among key employees, as well as those with lower board independence pay their CEOs more.

Column 4 presents estimates from the DDD regression in equation (9). Note that the high-dimensional fixed effects employed in this setting absorb all control variables since the latter vary only at the firm-year level. Similar to the results in the first three columns, we see that CEO pay is significantly lower after the Act even in comparison with the pay of other executives at the same firm. The effect appears to be economically significant. For example, based on estimates in Column 4, we see that nonprofit CEO pay falls by 2.0% after the Act. For the average CEO in our sample, this is equivalent to a reduction in pay of $12K.[21]

Figure 3 compares the temporal pattern in CEO pay in NY nonprofits to the patterns in other states. The corresponding regression estimates are reported in Table IA.2 of the Internet Appendix. There is no apparent trend in CEO pay from 2009 to 2014, supporting the parallel trends assumption required for a difference-in-differences identification. In contrast, we see a drop in pay in 2015, which continues over the next two years. That the drop in pay continues over several years is not surprising because some executives have employment contracts that are difficult to adjust quickly. The figure presented in the introduction shows that for non-CEO executives, in contrast, there are no significant differences in pay, both before and after the Act.

In Column 5 of Table 4, we restrict the sample to nonprofits located in New York state and bordering states (PA, NJ, CT, MA, and VT). If nonprofits located in these northeastern states are somehow different from the nonprofits located elsewhere (e.g., because of the dynamics of the local labor market), they could potentially have different

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[21]The average nonprofit is much smaller than the typical public firm covered by Execucomp. For the 500 largest nonprofits in the sample (by revenues), a 2.0% reduction in CEO pay would translate on average into $51K.

trends in the relative pay of CEOs and other executives. The specification that includes only NY and its neighboring-states helps to mitigate these concerns. The sample for these neighboring-state tests contains 28% as many observations as the full sample tests. Nevertheless, we find the neighboring-state results are consistent with those using the full sample.

One potential concern could be that the industry distribution of NY nonprofits differs from that in other states and that the relative pay of CEOs in comparison with that of other executives shows different trends across industries. Therefore, in Column 6, we control for $Year \times Industry \times CEO$ and find similar results. Thus, regardless of the setting, we find that CEO pay after the implementation of the Act was significantly lower, with the magnitudes of decrease ranging from 1.7% to 2.3%. In Section VI.H, we also present an alternative set of results for the sample of digital filers based on AWS data, where we are able to identify CEOs more precisely using their job titles. We find that our magnitudes increase and range from 2.2% to 3.1% using this alternative CEO classification.

Another potential concern is that the reduction in pay we observe is driven by a small fraction of highly paid CEOs. In Table C.1 of Appendix C, we therefore present the results from quantile regressions. We see that the Act reduces the median CEO pay by essentially the same magnitude as it does for the mean pay. Furthermore, pay for those in the 25th and 75th percentiles also goes down significantly. Taken together, these results show that the Act leads to a reduction in pay across a wide spectrum of nonprofit CEOs.

B. Compensation Components

We now examine how the structure of CEO pay is affected by the Act. More specifically, we investigate the effect of the Act on the five individual pay components reported in the

Schedule J: salary, bonus pay, perquisite pay, deferred pay, and nontaxable benefits.[22] The model predicts that the discretionary modes of pay are more likely to be affected by the Act, so we expect larger effects on bonus and perquisite pay.

The results are presented in Table 4, with the five pay components ordered from the largest component (salary) to the smallest component (nontaxable benefits). We find that four out of five CEO compensation components decline significantly after the Act. Specifically, from Column 1 we see that CEO salary declines by approximately 1.7% after the Act. Further, the Act has a larger effect on CEO bonuses (Column 2), which decrease by 4.8%. In dollar terms, post-Act salaries and bonuses decrease by around $6,000 and $4,000 respectively. Column 3 shows that CEOs also experience a significant decrease in perquisite pay of approximately 8.8%. Moving on to smaller pay components, we find a significant 5.9% reduction in deferred pay and an insignificant effect on nontaxable benefits. We obtain largely similar results when we use a DDD setting similar to that in Column 4 of Table 3. These additional results are tabulated in Table IA.3 of the Internet Appendix. In sum, we find that most components of CEO pay are significantly affected by the Act, with larger percentage declines in more discretionary components of pay, such as bonuses and perquisites.

Our evidence so far indicates that nonprofits significantly reduced CEO pay after the Act. While this evidence shows that new legislation was effective at curbing CEO pay, it nevertheless is insufficient to allow us to draw any policy implications because firm outcomes may also have been affected. For example, changes in the level and structure of pay could have caused changes in CEO effort and/or the ability of firms to retain key talent, both of which are tied to firm performance. Using a sample of electronic filers that allows us to track CEO turnover, we show in Section VI.H that the Act did not

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[22] *Salary* represents non-discretionary payments agreed upon in advance; *Bonus Pay* includes payments based on satisfaction of a performance target or before services are rendered; *Perquisite Pay* includes payments under a severance plan, earnings in a nonqualified defined contribution plan, and awards based on length of service; *Deferred Pay* refers to deferrals of compensation under a retirement or deferred compensation plan; and *Nontaxable Benefits* represents benefits excluded from taxation under the Internal Revenue Code (e.g., health insurance, educational assistance, life insurance, disability benefits, and dependent care assistance).

lead to higher turnover. Furthermore, by including "spell fixed effects," we also show that the Act led to a reduction in CEO pay even when we hold the firm-person-role combination constant. Next, we examine how CEO effort was affected by the Act.

C. Average Hours Worked

To further our understanding of the implications of the Nonprofit Revitalization Act for the performance of nonprofits, we next examine how a direct input to firm performance— CEO effort—changed after the Act's passage. The model predicts that as the power of CEOs to influence the pay-setting process declines, we should expect to see more efficient compensation contracts for CEOs, and as a result greater CEO effort.

To measure the effort of a CEO and other nonprofit executives, we use the average number of hours they work per week. These data are reported in Schedule J of Form 990 and are available for all listed executives of a nonprofit organization. We therefore use difference-in-differences and the triple-difference specifications used in Section V.A. As before, the key variable of interest is the *Law* variable in DD model and the interaction term *Law×CEO* in DDD model.

The results of these tests are reported in Table 5. Columns 1-3 present results using a DD setting, while Columns 4-6 employ a DDD setting. The sample in Column 5 is restricted to nonprofits in NY state and neighboring states (PA, CT, MA, NJ, and VT). In Column 1, we find a positive and statistically significant coefficient of weekly hours worked on the *Law* dummy, indicating that CEO effort increased following the passage of the Act. The effect is economically modest: CEOs work on average 0.19 hours more per week, a 0.5% increase relative to the mean number of hours. We find similar effects in Columns 2 and 3, which include various controls. Column 4 shows the results using a DDD setting. Here the coefficient is still positive, but the magnitude is smaller and not statistically different from zero. When restricting the control sample to the neighboring states, in Columns 5 we find similar magnitudes as in Column 1. Thus, if we consider

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only nonprofits and their executives in the northeastern states, CEO effort increased by a small amount after the passage of the Act. Finally, Column 6, which controls for potential differential time trends across different industries, yields similar results.

In sum, our results show that CEO effort, measured by the number of hours at work, increased slightly after the Act. These results can be viewed through the lens of our model, which predicts higher CEO effort with a decrease in the fraction of compromised boards. Intuitively, when the CEO is allowed to be in the room during her pay discussion, she can influence the discussion, and this influence tends to reduce the sensitivity of CEO pay to effort. The lower compensation sensitivity translates into a lower incentive to exert effort–essentially the CEO could shirk and still persuade the board to approve a generous compensation package. Following the Act, however, the CEO is not present during the discussion of her compensation package, which allows the board to assess CEO performance more objectively and set pay appropriately. Therefore, CEOs could feel compelled to work longer hours after the passage of the Act and supply information on hours worked to the board for consideration during the discussion of their pay.

Of course, the number of hours one spends at work does not capture all dimensions of effort. For example, it could be that a CEO spends more hours at work but focuses on the wrong outcomes, such as improving the optics of her contributions to the success of organization or dealing with administrative issues related to other provisions of the Act.[23] We therefore directly examine firm performance next.

D. Firm Performance

If CEOs exerted undue influence over the terms of their compensation packages before the Act, then CEO compensation packages were suboptimal. Indeed, our model predicts

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[23]In general, the goal of the Act was to reduce, rather than increase, the administrative burden on nonprofits. However, it is possible that implementation of some provisions of the Act, such as adopting a new conflict-of-interest policy, requires extra effort by the CEOs. To address this concern, we verify that hours worked by CEOs increase in both the firms that needed to adopt new conflict-of-interest and whistleblower policies and the ones that already had them in place prior to the Act.

that, as the fraction of compromised boards decreases, the CEO compensation contract features a higher pay-performance sensitivity, which in turn leads to higher CEO effort and better firm performance. We test this prediction of the model next.

Since nonprofit organizations do not pursue profit maximization and have multiple stakeholders, evaluation of their performance can be challenging. We address this challenge by following the prior nonprofit literature and studying multiple metrics of firm performance. Specifically, we consider the following firm outcomes: the log of contributions and grants, the log of the number of volunteers, revenue generated per employee, and administrative efficiency.[24] For example, contributions and grants are informative about how important stakeholders of a nonprofit, namely its donors, view the nonprofit's performance. Similarly, the number of volunteers working for a nonprofit is informative about the views of yet another stakeholder group – volunteers. Another important performance metric is the administrative efficiency or program ratio, which is the percentage of the nonprofit's total expenses spent on its programs and services.[25] Finally, we include revenue per employee because this is a frequently used metric of performance in the for-profit literature and because it measures the financial health of the organization.

Following the relevant literature (e.g., Balsam and Harris (2018)), all outcome variables are for the following year (i.e., year $t + 1$ and not t as in previous tests).[26] The regressions are run at the firm level, and the main variable of interest is an indicator variable Law, which is equal to one for all NY-based nonprofits for fiscal years starting after July 1, 2014 (when the Act became effective). The baseline controls are the same as in Table 3 and include the log of assets, a conflict-of-interest policy dummy, a whistleblower policy dummy, and an audit committee dummy. As in our other tests,

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[24]For contributions and grants and the number of volunteers, we use the natural logarithm of one plus the relevant value; our results are also robust to using the levels of contributions and grants and the number of volunteers, as well as dropping zero values or not adding one before taking logarithms.

[25]This metric has been highlighted by prior literature (see, e.g., Baber, Daniel, and Roberts (2002)) and is featured by many popular websites that rate charities, such as *Charitynavigator.org.*

[26]The idea is that, unlike compensation or executive effort, firm performance reacts with a delay.

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all specifications include year and firm fixed effects.

Table 6 presents the results for firm performance. In Columns 1 and 2, we use the log of contributions and grants as the dependent variable. We find that contributions and grants increased significantly after the Act by approximately 3.9% relative to the mean. For the average nonprofit in our sample, this represents an increase of $525K in contributions per year. Columns 3 and 4 use the logarithm of the number of volunteers at the nonprofit as the outcome variable. The results show that the number of nonprofit volunteers increased by approximately 2.4% after the Act. The next two columns present the results for revenue generated per employee. Here too we observe that revenue generation increased significantly after the Act by approximately $15,000, which is equal to approximately 5% of the mean. Finally, Columns 7 and 8 use administrative efficiency as the dependent variable. We find that the Act had no effect on administrative efficiency as the estimated effect is very close to zero with a small standard error.

In sum, the firm-level outcomes affected positively were those associated with donor contributions, volunteer service, and revenue generation. These results suggest that the outside stakeholders generally had a better perception of NY nonprofits following the Act's passage, with volunteers and donors willing to donate more of their time and money. At the same time, the nonprofits' administrative efficiency was unaffected by the Act. Thus, it appears that the Act had some positive effects on firm performance and no significant negative effects.

E. Pay-Performance Sensitivity (PPS)

In earlier tests, we investigated the effects of the Nonprofit Revitalization Act of 2013 on executive compensation. Now we investigate how the Act affects the relation between compensation and firm performance. Our model predicts that, as the influence of a CEO on the pay-setting process decreases, her compensation contract becomes more

efficient, and, in particular, features a higher pay-performance sensitivity.

To estimate pay-performance sensitivities of compensation contracts for nonprofit CEOs, we need a measure of nonprofit performance. We use two measures that reflect firm performance: (i) grants and donor contributions and (ii) the number of volunteers the organization attracts. We measure firm performance either contemporaneously with compensation or lagged by one year. In these tests, pay-performance sensitivity (PPS) is the relation between CEO compensation and one of the two firm performance measures. To determine if the Act had an effect on a CEO's PPS, we interact the firm performance measures with the indicator variable *Law*. The resultant main variable of interest is *Law×Firm Performance*. The coefficient on this variable indicates the effect the law had on a nonprofit CEO's PPS in the presence of the appropriate control variables and fixed effects.

The results of the PPS tests are presented in Table 7. Columns 1-2 use grants and contributions, while Columns 3-4 use the number of volunteers as the performance measure. Note that these coefficients capture not just the direct sensitivity of pay to these performance measures, but also the sensitivity of pay to other measures of performance to which grantors and volunteers respond but that are not observed by the econometrician. For both measures of performance and regardless of whether we measure contemporaneous or past firm performance, we find that the sensitivity of nonprofit CEO pay to performance increased following the Act. These results are consistent with the prediction from our model and suggest that in addition to reducing the total pay, the Act also led to a change in the structure of pay.

F. Methods Used to Establish Compensation

Having established that both the level and structure of CEO pay changed after the Act, we now turn attention to the methods used by nonprofit boards to establish pay.

As mentioned previously, the Act did not require any changes in the methods used

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by nonprofits to determine executive pay. However, both before and after the Act, the IRS required executive compensation to be "fair and reasonable." If the IRS determines that executive compensation is excessive, it can levy fines (known as *excess benefit transaction excise taxes*) on both the executive who received the overpayment and the board members who approved the excessive compensation package. To shield itself from such fines, a nonprofit board could take a number of actions outlined by the IRS, such as approving compensation in advance, basing compensation decisions on comparability data, and carefully documenting its decision-making process. Since the Act removed the CEO from the room during the discussion of his or her own compensation package, board members could feel a greater sense of responsibility for any compensation decision and be more likely to follow the "best practices" that the IRS had always encouraged.

The specific methods for setting pay we examine are: compensation committee, compensation consultant, employment contract, review of other firms' 990s forms, and independent compensation review. Since these methods are reported at the firm-year level and are not broken down by executive, we estimate a DD model:

$$D_{it} = \gamma_i + \delta_t + \beta_1 Law_{it} + \varepsilon_{it}, \tag{10}$$

where the indices i and t refer to firms and years, respectively, and the unit of analysis is firm-year. The dependent variable D_{it} is equal to one if the company uses the indicated method to set pay (as disclosed in its Schedule J) and is equal to zero otherwise.

Table 8 reports the estimation results. In Column 1, we use a compensation committee indicator as the dependent variable. The coefficient on Law is positive and significant, indicating that firms are 2.1 percentage points more likely to set up compensation committees after the Act. We interpret this result as the pay-setting process becoming more structured, with clearer objectives and a better-defined framework.[27]

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[27] For NYSE-traded firms, a compensation committee must: (a) review and approve goals and objectives relevant to the CEO's compensation; (b) evaluate the CEO's performance in light of such goals and objectives; and (c) either as a committee or together with other independent directors determine and approve the CEO's compensation based upon such evaluation. We expect nonprofit compensation committees to have similar requirements and objectives resulting in a more structured and better-defined pay-setting process.

Similarly, we find a positive effect of the Act on a firm's likelihood of employing a compensation consultant (Column 2). Column 3 utilizes an employment contract indicator as its dependent variable. The coefficient on Law is positive and significant, revealing that nonprofit firms are more likely to use an explicit written employment contract with their executives after the Act.

We also observe that firms are significantly more likely to review other firms' 990 forms and benchmark executive pay to peers after the Act (Column 4). This result is interesting in light of the current for-profit literature, which finds that the use of compensation peer groups is associated with high executive pay. For example, Faulkender and Yang (2010) find that firms select highly paid peers to justify their CEO compensation and interpret it as self-serving behavior. In contrast, Bizjak, Lemmon, and Naveen (2008) view pay benchmarking as an efficient mechanism for gauging the market wages. Our results for nonprofit firms indicate that the more frequent use of compensation peer groups after the Act is associated with lower CEO pay.

Column 5 uses independent compensation review as its outcome variable. The variable is set to one if the process for determining compensation for executives includes a review and approval by independent persons, comparability data, and contemporaneous substantiation of the deliberation and decision. We find that an independent compensation review is significantly more likely following the passage of the Act. Overall, our results indicate that nonprofit boards changed the way in which they determine executive compensation after the Act, with the process becoming more systematized.

Given that we find significant changes in the pay-setting practices, a natural question is whether the change in CEO pay we observe after the Act is attributed to any of these changes. We therefore reestimate our specification 1 from Table 3, controlling for the contemporaneous changes in the pay-setting methods. Table IA.4 of the Internet Appendix presents these results. We observe that the coefficient on the Law variable is very similar to one in specification in Table 3. In fact, inclusion of compensation

committee or compensation consultant does not affect the coefficient of interest, whereas inclusion of compensation benchmarking methods (review of other firms' 990 forms and independent compensation review) lowers it only slightly, from 1.8% to 1.7%. Overall, these results indicate that the formal changes in the pay-setting process after the Act are not the only and perhaps not even the main reason for lower CEO pay.

G. Heterogeneity

So far, we have focused on the average effect of the Act. However, there is substantial heterogeneity among nonprofits, with some organizations pursuing philanthropic activities (e.g., providing free bowls of soup to the hungry), and others operating more commercially (e.g., assisted living facilities that charge residents a monthly fee), thereby resembling for-profit firms. These differences are interesting for several reasons. First, charitable organizations are more likely to employ altruistic people who care less about their pay that about the acuse they are supporting. If this is the case, we may expect less rent extraction in charitable nonprofits and smaller effects of the Act on CEO pay. Second, given the nature of their activities, some nonprofits may be better monitored by external constituencies (e.g., donors and governments), and their CEOs may have fewer opportunities for personal enrichment. Finally, it is interesting whether our results apply only to the nonprofit sector or could potentially be generalizable to the for-profit sector as well.

We therefore next examine firm heterogeneity, focusing in particular on the fraction of income nonprofits generate from commercial activities and the classification of nonprofits as charities under section 501(c)(3) of the code. These results are provided in Table 9. We find that the negative effect of the Act on CEO pay is more pronounced in the more commercial organizations and those that are classified as non-charitable. For example, CEO pay drops by 4.8-5.2% in commercial nonprofits and by 3.0-3.4% in non-charitable nonprofits. These results indicate that CEOs of nonprofits that operate on

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a more commercial basis are more affected by the Act, suggesting that our conclusions may be generalizable to the for-profit sector.

H. Sample of Electronic Filers

H.1. Identification of CEOs Based on Job Title

One potential concern about the interpretation of our results is that we identify the CEO as the highest-paid employee, which could sometimes result in misclassification.[28] In general, such misclassification introduces noise into the estimation and should bias down the coefficient of interest. Nevertheless, it is worthwhile to show that indeed the employees affected by the Act are the ones responsible for steering the organization and participating board discussions (e.g., a highly paid football coach is unlikely to be on a nonprofit board). We therefore next use a sample of electronic filers from AWS (6,900 unique nonprofits), which allows us to track the name and title of each nonprofit executive and hence identify the CEOs more precisely. We report the summary statistics for this sample in Table IA.5 of the Internet Appendix.

To identify the most senior executive in each firm based on the job titles disclosed in the electronically filed Form 990, we use the following procedure. We first identify the executive titles *CEO*, *President*, and *Executive Director*. So as not to capture other related titles or people who hold the position in a temporary capacity, we drop executives holding titles that contain the following keywords: *vice*, *VP*, *deputy*, *regional*, *group*, *admin*, *assistant*, *secretary*, *ex-officio*, *emeritus*, *past*, *interim*, *acting*, *thru*, and *until*. For educational institutions, we define the most senior executive as the one holding the title of *President*, *head of school*, or *headmaster* (or abbreviations and slight variations thereof). For the remaining nonprofits, if there is an executive who has the title *CEO*, she is considered the most senior executive. If there is no executive with that title, we check whether any executive has the title *President* and define her

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[28]Nevertheless, there are certain benefits of examining the effect of the Act on the highest-paid employees, such as avoiding the need to take a stand on the job titles equivalent to CEO (e.g., university presidents).

as the most senior. If we are not successful at this point in defining the most senior executive and if any executive has the title *Medical Director* in general health and mental health related nonprofit (NTEE classification E and F), we then define her as the most senior executive. Failing this classification, we define an executive holding the title of *Executive Director* as the most senior. Finally, for "youth-related" nonprofits, if the above steps did not identify the senior-most executive, we define a *Scout Executive* as the senior-most executive, whenever present.

The results based on this alternative CEO classification are provided in Table 10. As expected, we find larger magnitudes of CEO pay reductions after the Act, ranging from 2.2 to 2.3% in the difference-in-differences setting and from 2.6 to 3.1% in the triple-difference setting.

H.2. CEO Turnover and Results with Spell Fixed Effects

Next we examine the extent to which our results are attributable to CEO turnover after the Act. For example, a nonprofit board could reduce its CEO's pay, which causes the CEO to leave the organization, and then hire a new CEO at a lower pay. Our results on improved performance outcomes after the Act suggest that even when CEO turnover takes place, it appears to affect the organization positively. Nevertheless, if boards achieve better outcomes by finding a better CEO match for their organizations, the results have a different interpretation. It is not that the departed CEOs exerted undue influence over their pay, but simply that they were not a good match for their organizations.

We find that this alternative interpretation is not supported by the data. In particular, we show in Table 11 that CEO pay is reduced after the Act even when we include "spell fixed effects," which hold the firm-person-title combination constant. Further, the Act does not appear to cause a significant increase in CEO turnover.[29]

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[29]This finding is consistent with the survey results by Edmans, Gosling, and Jenter (2021), who report that 93% of directors admit that the CEO did not leave the firm after the quantum of pay was lowered.

I. Falsification Test and Additional Results

In this section, we present additional results that address various empirical concerns. We examine whether our results are robust to: (i) removing the industry with the highest-paid executives (health nonprofits); (ii) limiting the sample to firms that had been in compliance with other governance provisions of the Act prior to the passage of legislation—i.e., nonprofits that already had a designated audit committee, conflict-of-interest policy, and whistleblower policy; (iii) excluding higher education nonprofits, for which CEOs are less precisely identified; and (iv) removing from the sample firms that could be affected by Executive Order 38 passed in New York in 2012, which imposed additional reporting requirements and limitations on the use of state funds.

These additional results are presented in Table C.2 of the appendix. Columns 1 and 2 show that the results are unaffected if we exclude health nonprofits. In Columns 3 and 4, we show that for a sample of firms that were unaffected by other governance provisions of the Act, such as requirements to have a designated audit committee and conflict-of-interest and whistleblower policies, there is still a negative effect of the Act on CEO pay. The magnitude of the effect declines only slightly from our base estimates in Table 3 (from -1.8% to -1.6% in the DD setting and from -2.0% to -1.9% in the DDD setting).

Another issue is that we do not always precisely identify the CEO from all of the listed executives. For example, at some universities the highest-paid employee may be not the executive in charge of running the university but the head football coach. To mitigate this concern, we drop all higher education nonprofits from the sample and repeat the analysis. As expected, our main results become stronger in this specification. Finally, to ensure that EO38 is not affecting our results, we limit the sample to nonprofits unaffected by EO38 (i.e., those with a two-year average amount of state or government funds of less than $500,000) and repeat our main analysis. Columns 7-8 show that our results strengthen slightly in this sample.

In the Internet Appendix, we also present the results from a placebo test in California, a state similar to New York in size, but which did not pass any nonprofit legislation during the sample period (see Table IA.6). We do not find changes similar to those in NY.

VII. Conclusion

In this paper, we examine how CEO pay and firm performance change when the power of CEOs to capture the pay-setting process decreases. Using individual compensation of top executives employed by 14,765 nonprofit organizations, we find that CEO pay dropped by 2-3% when the Nonprofit Revitalization Act of 2013 adopted in the state of New York decreased the ability of CEOs to influence their pay. CEO pay also became more sensitive to firm performance.

We also document that nonprofit boards tend to adopt a more formal approach to determining executive compensation after the legislation's passage. Specifically, they are more likely to enter into employment contracts with their executives, use compensation committees to set pay, benchmark pay to other firms, and perform an independent compensation review.

Despite cuts in pay, CEOs do not appear to exert less effort after the legislation's passage, measured by the number of hours they work per week. Further, we find improvements in several measures of firm performance, such as donor contributions, the number of volunteers the organization attracts, and revenue generated per employee. Overall, our results show that regulation that targets the pay-setting process can be effective at reducing CEO pay while improving organizational outcomes.

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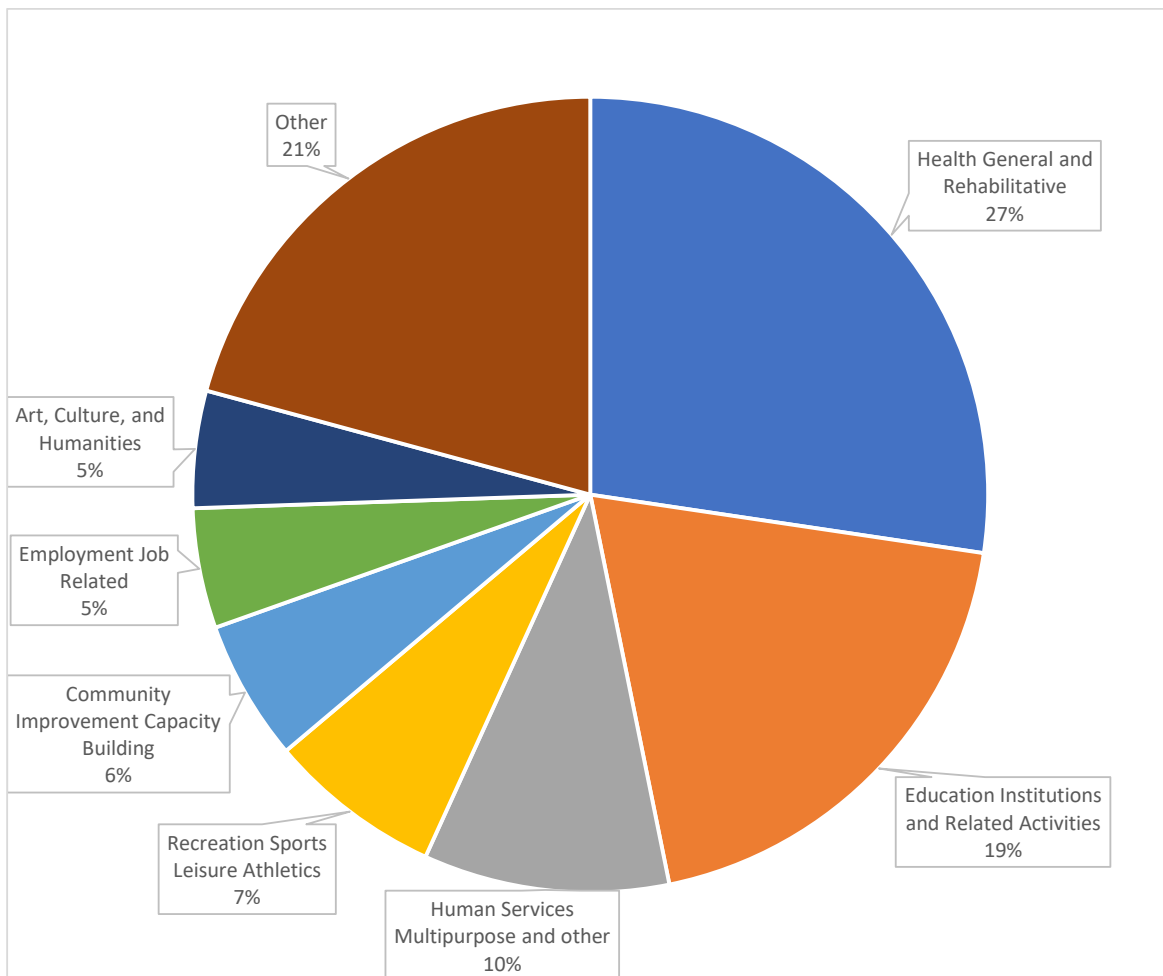
Figure 2. Types of Nonprofit Organizations. This pie chart shows different categories of nonprofit organizations in the United States and their representation (in %) in the sample.

40
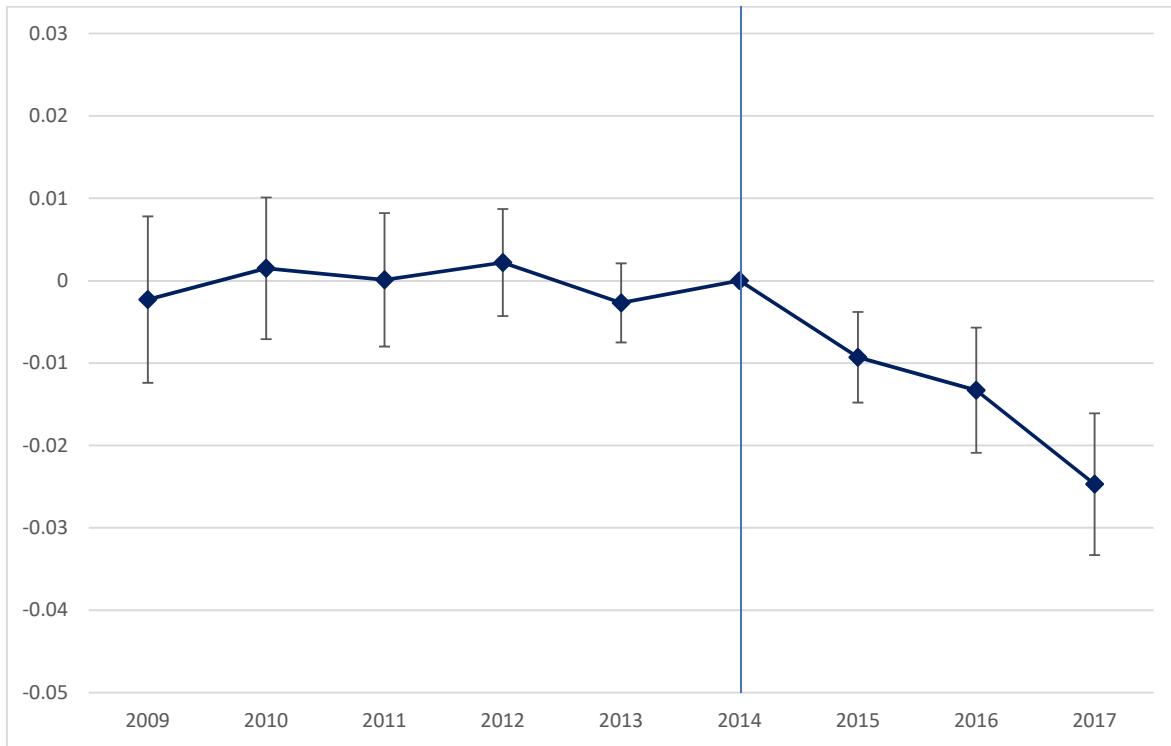
Figure 3. Total CEO Compensation in Nonprofit Organizations. This figure displays the OLS regression coefficients β_k and their respective standard errors, estimated from the following model: $\log\left(Pay_{ijt}\right) = \alpha_i + \nu_{jt} + \sum_{k=2009}^{k=2017} \beta_k \times NY_{it} \times D_k + \varepsilon_{ijt}$, where the dependent variable is the log of total CEO pay. The model includes firm and industry-year fixed effects, variable NY_{it} is equal to one if a firm i is in New York in year t, and D_k is an indicator variable equal to one for observations in the fiscal year k. The sample includes CEOs of nonprofit organizations in the sample.

Table 1. Summary Statistics

This table reports summary statistics for the variables in our sample. The sample consists of 14,765 unique nonprofit organizations that filed Form 990 with the *Department of the Treasury Internal Revenue Service* in the period 2009–2017. Panel A provides summary statistics for the full sample of executives (firm-year-executive level); Panel B is for the sample of CEOs only (firm-year level). Panels C provides summary statistics for firm characteristics and governance variables (firm-year level). All variable definitions are provided in Table B.1.

Panel A: All Executives

Variable	Mean	SD	p10	p50	p90	Obs.
Total Compensation (\$ 1000s)	387.78	325.74	167.46	272.62	734.16	554,288
Salary (\$ 1000s)	267.38	173.52	132.96	208.30	479.17	554,288
Bonus Pay (\$ 1000s)	43.27	96.88	0	0	119.47	554,288
Perquisite Pay (\$ 1000s)	22.69	62.11	0	1.51	52.20	554,288
Deferred Pay (\$ 1000s)	28.77	49.21	0	14.70	62.40	554,288
Nontaxable Benefits (\$ 1000s)	17.14	13.16	1.83	15.60	31.29	554,288
CEO	0.11	0.32	0	0	1	554,288
Law	0.04	0.20	0	0	0	554,288
Average Hours/Week	43.50	6.97	40	40	55	554,288

Panel B: CEOs

Variable	Mean	SD	p10	p50	p90	Obs.
Total Compensation (\$ 1000s)	597.21	694.28	182.89	350.00	1,270.05	81,911
Salary (\$ 1000s)	363.19	265.65	152.31	272.63	703.94	81,911
Bonus Pay (\$ 1000s)	82.79	214.33	0	0	231.75	81,911
Perquisite Pay (\$ 1000s)	61.72	215.18	0	0.55	115.36	81,911
Deferred Pay (\$ 1000s)	48.71	111.99	0	15.20	113.83	81,911
Nontaxable Benefits (\$ 1000s)	19.70	19.80	0	15.78	39.94	81,911
Law	0.04	0.19	0	0	0	81,911
Average Hours/Week	43.57	7.40	40	40	55	81,911

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Panel C: Firm Characteristics

Variable	Mean	SD	p10	p50	p90	Obs.
Number of Executives	7	7	1	5	16	81,911
Assets ($ million)	265.13	1,532.15	10.28	59.43	444.49	81,911
Revenue ($ million)	129.49	612.79	4.92	27.73	257.83	81,911
Debt/Assets	0.39	0.33	0.04	0.32	0.82	81,873
Administrative Efficiency	0.65	0.35	0	0.82	0.93	81,907
Board Independence	0.87	0.23	0.63	0.98	1	81,866
Conflict-of-Interest Policy	0.94	0.24	1	1	1	81,911
Whistleblower Policy	0.87	0.34	0	1	1	81,911
Audit Committee	0.92	0.26	1	1	1	81,911
Family Relationship	0.22	0.41	0	0	1	81,911
Compensation Committee	0.55	0.50	0	1	1	81,911
Compensation Consultant	0.28	0.45	0	0	1	81,911
Employment Contract	0.33	0.47	0	0	1	81,911
Review Other Firms' 990s	0.65	0.48	0	1	1	81,911
Independent Compensation Review	0.89	0.31	0	1	1	81,911
Contributions & Grants ($ million)	13.47	39.54	0	1.63	28.47	81,911
Number of Volunteers (100s)	5.84	21.39	0	0.50	9.27	81,911
Revenue/Employee	0.31	0.70	0.04	0.11	0.61	81,911

Table 2. CEO Compensation and Other Variables Prior to the Act

The table reports the means of the total CEO compensation, *Log(TDC1)*, its growth rate, and of control variables for nonprofits located in the state of New York and in all other U.S. states. The means are calculated using data prior to the effective date of the *Nonprofit Revitalization Act of 2013*. *p*-values for the difference in means based on the standard errors clustered by firm are reported below. Variable definitions are in Table B.1.

	State of New York	*Other U.S. states*	*p*-value
Log(Total Compensation)	6.09	6.06	0.13
Growth Rate, Total Compensation	0.03	0.03	0.41
Log(Assets)	4.21	4.19	0.76
Log(Revenue)	3.55	3.52	0.66
Administrative Efficiency	0.66	0.69	0.98
Debt/Assets	0.39	0.38	0.39
Conflict-of-Interest Policy	0.94	0.95	0.42
Whistleblower Policy	0.90	0.89	0.21
Audit Committee	0.94	0.95	0.65
Board Independence	0.88	0.87	0.35
Family Relationship	0.25	0.23	0.21

Table 3. Total Pay of Nonprofit Executives

The table reports the OLS estimates from regressions, in which the dependent variable is the log of total annual pay for nonprofit executives, *Log(TDC1)*. *Law* is an indicator variable equal to one if a nonprofit is based in NY and all or a majority of a firm-year occurs after July 2014 (the effective date of the *Nonprofit Revitalization Act of 2013*); zero otherwise. Specifications (1)-(3) use the sample of CEOs only; specifications (4)-(6) use the full sample of executives. In specification (5) the sample is limited to executives in the state of New York and neighboring states (PA, CT, MA, NJ, and VT); other specifications use data from all the states. *T*-statistics based on standard errors clustered by state are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Table B.1.

Dependent Variable:	Log(TDC1)					
Executives Included:	CEOs	CEOs	CEOs	All	All	All
States Included:	All	All	All	All	Neighbors	All
	(1)	(2)	(3)	(4)	(5)	(6)
Law	-0.018***	-0.017***	-0.017***			
	[-4.76]	[-4.69]	[-4.88]			
Law x CEO				-0.020***	-0.021**	-0.023***
				[-5.38]	[-3.85]	[-6.05]
Log(Assets)		0.080***	0.059***			
		[8.49]	[6.82]			
Conflict-of-Interest Policy		-0.001	0.000			
		[-0.05]	[0.00]			
Whistleblower Policy		-0.011*	-0.011*			
		[-1.92]	[-1.78]			
Audit Committee		0.018**	0.017**			
		[2.48]	[2.26]			
Administrative Efficiency			-0.053			
			[-1.60]			
Log(Revenue)			0.044***			
			[9.11]			
Debt/Assets			0.016			
			[1.02]			
Board Independence			-0.095***			
			[-4.34]			
Family Relationship			0.021***			
			[2.75]			
Observations	81,911	81,863	81,628	554,288	154,049	554,286
R-squared	0.930	0.930	0.931	0.706	0.728	0.706
Firm FE	Y	Y	Y	N	N	N
Year FE	Y	Y	Y	N	N	N
Firm-Year FE	N	N	N	Y	Y	Y
Firm-CEO FE	N	N	N	Y	Y	Y
CEO-Year FE	N	N	N	Y	Y	N
CEO-Industry-Year FE	N	N	N	N	N	Y

Table 4. Components of Nonprofit CEO Pay

The table reports the OLS estimates from regressions, in which the dependent variable is one of the five reported components of annual compensation for nonprofit executives: *log(base compensation)*, *log(bonus and incentive compensation)*, *log(other reportable compensation and perquisites)*, *log(retirement and deferred compensation)*, and *log(nontaxable benefits)*. *Law* is an indicator variable equal to one if a nonprofit is based in NY and all or a majority of a firm-year occurs after July 2014 (the effective date of the *Nonprofit Revitalization Act of 2013*); zero otherwise. The sample includes CEOs of nonprofit organizations and all states. The last row in the table shows the average fraction of the specific component of executive pay in total executive pay. *T*-statistics are based on standard errors clustered by state are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Table B.1.

Dependent Variable:	Salary	Bonus Pay	Perquisite Pay	Deferred Pay	Nontaxable Benefits
Executives Included:	CEOs	CEOs	CEOs	CEOs	CEOs
	(1)	(2)	(3)	(4)	(5)
Law	-0.017***	-0.048**	-0.088***	-0.059***	-0.017
	[-4.21]	[-2.43]	[-5.92]	[-2.82]	[-1.65]
Observations	81,911	81,911	81,835	81,847	81,904
R-squared	0.811	0.754	0.725	0.709	0.677
Firm FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y
Average % of Total Pay	68%	13%	8%	8%	3%

Table 5. Average Hours Worked Per Week

The table reports the OLS regression estimates, in which the dependent variable is average hours worked per week by a nonprofit executive. *Law* is an indicator variable equal to one if a nonprofit is based in NY and all or a majority of a firm-year occurs after July 2014 (the effective date of the *Nonprofit Revitalization Act of 2013*); zero otherwise. Specifications (1)-(3) use the sample of CEOs only; specifications (4)-(6) use the full sample of executives. In specification (5) the sample is limited to executives in the state of New York and neighboring states (PA, CT, MA, NJ, and VT); other specifications use data from all the states. *T*-statistics based on standard errors clustered by state are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Table B.1.

Dependent Variable:	*Average Hours/Week*					
Executives Included:	*CEOs*	*CEOs*	*CEOs*	*All*	*All*	*All*
States Included:	*All*	*All*	*All*	*All*	*Neighbors*	*All*
	(1)	(2)	(3)	(4)	(5)	(6)
Law	0.187***	0.211***	0.206***			
	[3.17]	[3.62]	[3.50]			
Law x CEO				0.058	0.184*	0.141***
				[1.20]	[2.10]	[3.27]
Log(Assets)		0.219	0.240			
		[1.58]	[1.61]			
Conflict-of-Interest Policy		-0.391	-0.438*			
		[-1.48]	[-1.77]			
Whistleblower Policy		-0.410**	-0.391**			
		[-2.67]	[-2.50]			
Audit Committee		0.560***	0.542***			
		[4.32]	[4.22]			
Administrative Efficiency			1.132*			
			[1.98]			
Log(Revenue)			-0.064			
			[-0.91]			
Debt/Assets			-0.262			
			[-1.36]			
Board Independence			-1.030***			
			[-4.10]			
Family Relationship			0.089			
			[0.74]			
Observations	81,911	81,863	81,628	554,290	154,049	554,288
R-squared	0.786	0.786	0.787	0.834	0.860	0.834
Firm FE	Y	Y	Y	N	N	N
Year FE	Y	Y	Y	N	N	N
Firm-Year FE	N	N	N	Y	Y	Y
Firm-CEO FE	N	N	N	Y	Y	Y
CEO-Year FE	N	N	N	Y	Y	N
CEO-Industry-Year FE	N	N	N	N	N	Y

Table 6. Firm Performance

The table reports the OLS regression estimates, in which the dependent variable is one of four measures of firm performance in the next year. The performance measures considered are: *log(contributions & grants)*, *log(number of volunteers)*, *revenue/employee*, and *administrative efficiency* (program expenses scaled by total expenses). *Law* is an indicator variable equal to one if a nonprofit is based in NY and all or a majority of a firm-year occurs after July 2014 (the effective date of the *Nonprofit Revitalization Act of 2013*); zero otherwise. *T*-statistics based on standard errors clustered by state are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Table B.1.

Dependent Variable:	Contributions & Grants		Number of Volunteers	
	(1)	(2)	(3)	(4)
Law	0.039***	0.039***	0.025***	0.024***
	[4.63]	[5.18]	[5.20]	[4.98]
Log(Assets)		0.295***		0.046***
		[12.29]		[5.62]
Conflict-of-Interest Policy		-0.032**		0.007
		[-2.31]		[0.43]
Whistleblower Policy		0.013		0.034**
		[0.81]		[2.09]
Audit Committee		-0.002		0.011
		[-0.18]		[1.44]
Observations	81,911	81,863	81,911	81,863
R-squared	0.938	0.939	0.931	0.931
Firm FE	Y	Y	Y	Y
Year FE	Y	Y	Y	Y

Dependent Variable:	Revenue/Employee		Administrative Efficiency	
	(5)	(6)	(7)	(8)
Law	0.014***	0.015***	0.000	0.000
	[4.02]	[4.42]	[0.15]	[0.17]
Log(Assets)		0.125***		0.008**
		[10.74]		[2.22]
Conflict-of-Interest Policy		-0.008		-0.000
		[-0.53]		[-0.13]
Whistleblower Policy		-0.005		0.000
		[-0.69]		[0.21]
Audit Committee		-0.007		-0.000
		[-1.06]		[-0.19]
Observations	81,911	81,863	81,906	81,858
R-squared	0.893	0.894	0.986	0.986
Firm FE	Y	Y	Y	Y
Industry-Year FE	Y	Y	Y	Y

Table 7. Pay-Performance Sensitivity

The table reports the OLS estimates from regressions, in which the dependent variable is the log of total annual pay for nonprofit CEOs, *Log(TDC1)*. *Law* is an indicator variable equal to one if a nonprofit is based in NY and all or a majority of a firm-year occurs after July 2014 (the effective date of the *Nonprofit Revitalization Act of 2013*); zero otherwise. T-statistics based on standard errors clustered by the firm are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Table B.1.

Dependent Variable:	*Log(TDC1)*			
	(1)	(2)	(3)	(4)
Performance Variable Timing:	Contemp.	Lagged	Contemp.	Lagged
Log(Grants & Contributions) x Law	0.037***	0.036***		
	[5.31]	[6.40]		
Log(Grants & Contributions) x Post	0.000	-0.011*		
	[0.01]	[-1.96]		
Log(Grants & Contributions) x NY	-0.005	-0.014***		
	[-1.15]	[-3.19]		
Log(Grants & Contributions)	0.010***	0.019***		
	[2.72]	[4.76]		
Log(Number of Volunteers) x Law			0.442***	0.250***
			[6.90]	[3.18]
Log(Number of Volunteers) x Post			-0.033	0.070
			[-0.51]	[0.88]
Log(Number of Volunteers) x NY			-0.143***	-0.035
			[-3.75]	[-0.62]
Log(Number of Volunteers)			0.052	-0.028
			[1.37]	[-0.50]
Observations	80,039	62,132	80,039	62,132
R-squared	0.950	0.953	0.950	0.953
Firm-Pre/Post FE	Y	Y	Y	Y
Year-NY FE	Y	Y	Y	Y

Table 8. Methods Used to Establish Compensation

The table reports the OLS estimates, in which the dependent variable is one of five dummy variables indicating a particular method used by the firm to establish executive compensation or the sum of these five variables. The five methods include: compensation committee, independent compensation consultant, formal employment contract, reviewing other firms' 990 filings, and independent compensation review. *Law* is an indicator variable equal to one if a nonprofit is based in NY and all or a majority of a firm-year occurs after July 2014 (the effective date of the *Nonprofit Revitalization Act of 2013*); zero otherwise. *T*-statistics based on standard errors clustered by state are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Table B.1.

Dependent Variable:	Comp. Committee (1)	Comp. Consultant (2)	Employment Contract (3)	Review Other Firms' 990s (4)	Independent Comp. Review (5)
Law	0.021***	0.011***	0.023***	0.017***	0.017***
	[4.42]	[3.15]	[5.71]	[2.85]	[3.22]
Observations	81,911	81,911	81,911	81,911	81,911
R-squared	0.846	0.851	0.849	0.822	0.785
Firm FE	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y

Table 9. Firm Heterogeneity and Total Pay of Nonprofit Executives

The table reports the OLS estimates from regressions, in which the dependent variable is the log of total annual pay for nonprofit executives, *Log(TDC1)*. *Law* is an indicator variable equal to one if a nonprofit is based in NY and all or a majority of a firm-year occurs after July 2014 (the effective date of the *Nonprofit Revitalization Act of 2013*); zero otherwise. *T*-statistics based on standard errors clustered by state are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Table B.1.

Dependent Variable:	Log(TDC1)			
	(1)	(2)	(3)	(4)
Law x CEO	-0.009**	-0.011***	-0.014***	-0.018***
	[-2.51]	[-2.95]	[-3.46]	[-4.20]
Law x CEO x Commercial Nonprofit	-0.039***	-0.041***		
	[-4.98]	[-6.21]		
Law x CEO x Non-Charity Nonprofit			-0.020***	-0.012**
			[-2.98]	[-2.26]
Observations	554,288	554,275	508,801	508,787
R-squared	0.706	0.706	0.707	0.707
Firm-Year FE	Y	Y	Y	Y
Firm-CEO FE	Y	Y	Y	Y
CEO-Year-Interaction FE	Y	N	Y	N
CEO-Industry-Year-Interaction FE	N	Y	N	Y

Table 10. Total Pay: Identification of CEOs Based on Job Titles

The table reports the OLS estimates from regressions, in which the dependent variable is the log of total annual pay for nonprofit executives, *Log(TDC1)*. The sample is based on an Amazon database of electronic filings of Form 990 (6,900 organizations), and CEOs are identified by their job titles. *Law* is an indicator variable equal to one if a nonprofit is based in NY and all or a majority of a firm-year occurs after July 2014 (the effective date of the *Nonprofit Revitalization Act of 2013*); zero otherwise. Specifications (1)-(3) use the sample of CEOs only; specifications (4)-(6) use the full sample of executives. In specification (5) the sample is limited to executives in the state of New York and neighboring states. *T*-statistics based on standard errors clustered by state are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Table B.1.

Dependent Variable:	*Log(TDC1)*					
Executives Included:	*CEOs*	*CEOs*	*CEOs*	*All*	*All*	*All*
States Included:	*All*	*All*	*All*	*All*	*Neighbors*	*All*
	(1)	(2)	(3)	(4)	(5)	(6)
Law	-0.022***	-0.023***	-0.023***			
	[-3.72]	[-4.25]	[-4.47]			
Law x CEO				-0.026***	-0.031***	-0.031***
				[-4.04]	[-6.10]	[-4.37]
Log(Assets)		0.115***	0.096***			
		[7.22]	[5.98]			
Conflict-of-Interest Policy		0.032	0.032			
		[1.00]	[0.99]			
Whistleblower Policy		-0.004	-0.004			
		[-0.26]	[-0.26]			
Audit Committee		0.007	0.006			
		[0.39]	[0.32]			
Administrative Efficiency			-0.024			
			[-0.54]			
Log(Revenue)			0.037***			
			[4.23]			
Debt/Assets			-0.031			
			[-0.84]			
Board Independence			-0.010			
			[-0.32]			
Family Relationship			-0.005			
			[-0.60]			
Observations	33,016	33,004	32,999	291,897	89,973	291,894
R-squared	0.862	0.863	0.863	0.667	0.683	0.667
Firm FE	Y	Y	Y	N	N	N
Year FE	Y	Y	Y	N	N	N
Firm-Year FE	N	N	N	Y	Y	Y
Firm-CEO FE	N	N	N	Y	Y	Y
CEO-Year FE	N	N	N	Y	Y	N
CEO-Industry-Year FE	N	N	N	N	N	Y

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Table 11. Total CEO Pay with Spell Fixed Effects and CEO Turnover

The table reports the OLS estimates from regressions. The sample is based on an Amazon database of electronic filings of Form 990 (6,900 organizations), and CEOs are identified by their job titles. The dependent variable in specifications (1)-(3) is the log of total annual pay for nonprofit executives, *Log(TDC1)*, and specifications include spell fixed effects (based on Firm-Person-Title). The dependent variable in specifications (4)-(6) is CEO turnover, which is equal to one if the CEO of the firm changes from the prior year and zero otherwise. *Law* is an indicator variable equal to one if a nonprofit is based in NY and all or a majority of a firm-year occurs after July 2014 (the effective date of the *Nonprofit Revitalization Act of 2013*); zero otherwise. *T*-statistics based on standard errors clustered by state are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variable definitions are in Table B.1.

Dependent Variable:	Log(TDC1)			CEO Turnover		
	(1)	(2)	(3)	(4)	(5)	(6)
Law	-0.015***	-0.016***	-0.016***	0.006	0.006	0.006
	[-2.69]	[-2.87]	[-2.92]	[1.18]	[1.20]	[1.23]
Log(Assets)		0.063***	0.052***		-0.024*	-0.013
		[4.22]	[3.76]		[-1.77]	[-0.88]
Conflict-of-Interest Policy		0.062	0.060		-0.020	-0.019
		[1.51]	[1.48]		[-0.53]	[-0.52]
Whistleblower Policy		-0.024**	-0.024**		-0.013	-0.012
		[-2.07]	[-2.04]		[-0.51]	[-0.48]
Audit Committee		0.011	0.011		0.004	0.006
		[0.55]	[0.55]		[0.22]	[0.30]
Administrative Efficiency			-0.066			-0.035
			[-0.87]			[-0.47]
Log(Revenue)			0.023***			-0.021**
			[2.81]			[-2.15]
Debt/Assets			-0.026			0.035
			[-0.88]			[1.30]
Board Independence			-0.035			-0.014
			[-1.11]			[-0.36]
Family Relationship			0.002			0.007
			[0.34]			[0.76]
Observations	27,260	27,248	27,243	30,385	30,373	30,364
R-squared	0.951	0.951	0.951	0.243	0.243	0.243
Firm FE	N	N	N	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y
Firm-Person-Title FE	Y	Y	Y	N	N	N

Appendix A. Proofs

Proof of Lemma 1. The principals maximize objective (2). Because it is optimal to induce high effort, e_H, this problem amounts to minimizing the expected compensation costs, $E\{w(Y, s)\}$, subject to constraints (6) and (7). Note that because $U(.)$ is an increasing function, it follows from constraint (6) that $w_G > w_B$. The Lagrangian for the board's problem is

$$
L = \frac{p_H w_G}{2} + \frac{(1 - p_H) w_B}{2} + \frac{w_0}{2} - \lambda_1 \left(U(w_G) - U(w_B) - \frac{2 (e_H - e_L)}{p_H - p_L} \right) \tag{11}
$$
$$
- \lambda_2 \left(\frac{p_H U(w_G)}{2} + \frac{(1 - p_H) U(w_B)}{2} + \frac{U(w_0)}{2} - U_R - e_H \right).
$$

By optimizing with respect to w_0, w_G, and w_B, we can solve for the two Lagrange multipliers and obtain the condition for the optimal contract

$$
\frac{1}{U'(w_0)} = \frac{p_H}{U'(w_G)} + \frac{1 - p_H}{U'(w_B)}. \tag{12}
$$

Because function $1/U'(x)$ is weakly convex, it follows from (12) that

$$
w_0 \geq p_H w_G + (1 - p_H) w_B, \tag{13}
$$

which in combination with $w_G > w_B$ implies $w_0 > w_B$. Hence, the optimal contract is characterized by

$$
w_G > w_0 > w_B. \tag{14}
$$

$\square$

Proof of Proposition 1. Under the optimal contract by the independent board, the IC-constraint just binds

$$
U(w_G) - U(w_B) = \frac{2 (e_H - e_L)}{p_H - p_L}. \tag{15}
$$

With the compromised board, the CEO will choose low effort if

$$
U(w_G) - U(w_0) < \frac{2 (e_H - e_L)}{p_H - p_L}. \tag{16}
$$

Because $w_0 > w_B$, this condition always holds, and hence the CEO chooses low effort. When the fraction of compromised board is θ, the average firm performance is

$$
E[V(e)] = \theta V_L + (1 - \theta) V_H, \tag{17}
$$

which is clearly decreasing in θ. $\square$

Proof of Proposition 2. The expected CEO pay when the board is independent is

$$
Pay^I = \frac{p_H w_G}{2} + \frac{(1 - p_H) w_B}{2} + \frac{w_0}{2}. \tag{18}
$$

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The expected CEO pay when the board is compromised is

$$Pay^C = \frac{p_L w_G}{2} + \frac{(1 - p_L) w_0}{2} + \frac{w_G}{4} + \frac{w_0}{4}. \tag{19}$$

When a fraction θ of boards is compromised in the nonprofit sector, the average CEO pay is $\theta Pay^C + (1 - \theta) Pay^I$, which can be written as

$$
\begin{aligned}
E[Pay] &= Pay^I + \theta \left(Pay^C - Pay^I \right) \\
&= Pay^I + \frac{\theta}{2} \left((w_0 - w_B)(1 - p_H) - (p_H - p_L)(w_G - w_0) + \frac{1}{2}(w_G - w_0) \right),
\end{aligned} \tag{20}
$$

It follows from (13) that

$$(1 - p_H)(w_0 - w_B) \geq p_H(w_G - w_0), \tag{21}$$

and hence we can obtain from (20) the following inequality

$$E[Pay] \geq Pay^I + \frac{\theta}{4}(p_L + 1/2)(w_G - w_0), \tag{22}$$

Since the first term above is independent of θ, and the second term is directly proportional to θ, with $w_G > w_B$, the average CEO pay is linearly increasing with θ.

The pay-performance sensitivity is calculated as the covariance of pay with Y, divided by the variance of Y. Because signal Y has a distribution with support over two points, it simplifies to the following

$$PPS = \frac{E(w|Y = Y_G) - E(w|Y = Y_B)}{Y_G - Y_B}. \tag{23}$$

Therefore, PPS for the compromised board is

$$PPS^C = \frac{w_G - w_0}{Y_G - Y_B}, \tag{24}$$

whereas PPS for the independent board is

$$PPS^I = \frac{\frac{p_H(w_G - w_0)}{p_H + 1/2} + \frac{(w_0 - w_B)(1 - p_H)}{1 - \frac{1}{2}(p_H + 1/2)}}{Y_G - Y_B}, \tag{25}$$

which using (21) translates into

$$PPS^I > \frac{w_G - w_0}{Y_G - Y_B} \frac{1}{\left(1 - \frac{p_H}{2}\left(1 + \frac{1}{2p_H}\right)\right)\left(1 + \frac{1}{2p_H}\right)}. \tag{26}$$

The denominator of the second term $\left(1 - \frac{p_H}{2}\left(1 + \frac{1}{2p_H}\right)\right)\left(1 + \frac{1}{2p_H}\right) < 1$ if

$$1 < \left(p_H + \frac{1}{2}\right)^2, \tag{27}$$

which is true because $p_H > 1/2$. Hence, $PPS^I > PPS^C$. Finally, the average PPS is

$$E[PPS] = \theta PPS^C + (1 - \theta) PPS^I = PPS^I - \theta\left(PPS^I - PPS^C\right), \tag{28}$$

which is increasing in the fraction of compromised boards θ. $\qquad \square$

Appendix B. Variable Definitions

Variable Name	Description
CEO	Equal to one if the executive is the CEO; zero otherwise.
Law	Equal to one if the nonprofit firm is located in New York state and all or a majority of a firm-year occurs after July 2014; zero otherwise.
Log(TDC1)	The logarithm of the executive's total compensation.
Log(Salary)	The logarithm of the executive's base compensation.
Log(Bonus Pay)	The logarithm of the executive's bonus and incentive compensation.
Log(Perquisite Pay)	The logarithm of the executive's other compensation in a given year, where other is total compensation less base compensation and bonus and incentive compensation.
Log(Deferred Pay)	The logarithm of the executive's earnings in nonqualified defined contribution plans and deferred compensation plans.
Log(Nontaxable Benefits)	The logarithm of the executive's nontaxable benefits in a given year (educational assistance, life insurance, medical insurance, dependent care assistance, disability benefits, etc.).
Log(Assets)	The logarithm of total assets.
Log(Revenue)	The logarithm of total revenue.
Revenue/Employee	The annual revenue divided by the number of employees.
Log(Grants & Contributions)	The logarithm of one plus the dollar value of contributions and grants in million.
Log(Number of Volunteers)	The logarithm of one plus the number of volunteers who provided services to the organization during the year (in hundred).
Debt/Assets	Total debt scaled by total assets.
Administrative Efficiency	Program expenses scaled by total expenses.
Average Hours/Week	The average hours an executive works per week during the year.
Board Independence	The number of independent directors scaled by the total number of directors.
Conflict-of-Interest Policy	Equal to one if the nonprofit has a conflict-of-interest policy in place; zero otherwise.
Whistleblower Policy	Equal to one if the nonprofit has a whistleblower policy in place; zero otherwise.
Family Relationship	Equal to one if any key employee has a family or business relationship with another key employee; zero otherwise.
Commercial Nonprofit	Equal to one if the program service revenue divided by the total revenue is in the top quartile of the distribution; zero otherwise.

Table continued

Variable Name	Description
Non-Charity Nonprofit	Equal to one if the nonprofit is not classified as 501(c)(3) organization by the IRS; zero otherwise.
Audit Committee	Equal to one if the nonprofit has an audit committee; zero otherwise.
Compensation Committee	Equal to one if the nonprofit used a compensation committee to establish executive compensation in a given year; zero otherwise.
Compensation Consultant	Equal to one if the nonprofit used a compensation consultant to establish executive compensation in a given year; zero otherwise.
Employment Contract	Equal to one if the nonprofit used an employment contract to establish executive compensation in a given year; zero otherwise.
Review Other Firms' 990s	Equal to one if the nonprofit reviewed other firms' 990 forms to establish executive compensation in a given year; zero otherwise.
Independent Compensation Review	Equal to one if the process for determining compensation for listed persons includes a review and approval by independent persons, comparability data, and contemporaneous substantiation of the deliberation and decision; zero otherwise.

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Appendix C: Additional Results

Table C.1. Total Pay of Nonprofit Executives: Quantile Regressions

The table reports the estimates from quantile regressions using the 25th, 50th, and 75th percentiles of the data. The dependent variable is the log of total annual pay for nonprofit CEOs, *Log(TDC1)*. *Law* is an indicator variable equal to one if a nonprofit is based in NY and all or a majority of a firm-year occurs after July 2014 (the effective date of the *Nonprofit Revitalization Act of 2013*); zero otherwise. *T*-statistics based on standard errors clustered by state are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable:	Log(TDC1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Quartile	*p25*	*p25*	*p50*	*p50*	*p75*	*p75*
Law	-0.025***	-0.024***	-0.018***	-0.017***	-0.010***	-0.011***
	[-7.15]	[-7.26]	[-5.37]	[-5.66]	[-3.21]	[-3.55]
Log(Assets)		0.067***		0.059***		0.052***
		[9.36]		[9.04]		[8.09]
Conflict-of-Interest Policy		-0.003		0.000		0.003
		[-0.31]		[0.00]		[0.38]
Whistleblower Policy		-0.009		-0.011**		-0.012*
		[-1.63]		[-1.97]		[-1.92]
Audit Committee		0.025***		0.017***		0.009
		[3.52]		[2.64]		[1.37]
Administrative Efficiency		-0.050**		-0.053**		-0.056***
		[-1.97]		[-2.41]		[-2.60]
Log(Revenue)		0.050***		0.044***		0.038***
		[15.33]		[14.69]		[9.43]
Debt/Assets		0.007		0.016		0.025***
		[0.50]		[1.43]		[2.69]
Board Independence		-0.093***		-0.095***		-0.097***
		[-5.74]		[-5.45]		[-4.79]
Family Relationship		0.022***		0.021***		0.020***
		[3.93]		[3.62]		[3.01]
Observations	81,911	81,650	81,911	81,650	81,911	81,650
Firm FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

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Table C.2. Subsample Evidence

The table reports OLS estimates from regressions, in which the dependent variable is the log of total annual pay for CEOs (Columns 1, 3, 5, 7) or nonprofit executives (Columns 2, 4, 6, 8). *Law* is an indicator variable equal to one if a nonprofit is based in NY and all or a majority of a firm-year occurs after July 2014 (the effective date of the *Nonprofit Revitalization Act of 2013*); zero otherwise. Specifications 1-2 drop health organizations (NTEE 1-digit industry code "E") from the sample. Specifications 3-4 restrict the sample to firms that were unaffected by other governance provisions of the Act, i.e., firms that had designated audit committee, as well as conflict-of-interest and whistleblower policies. Specifications 5-6 drop educational institutions (NTEE 1-digit industry code "B") from the sample. Specifications 7-8 exclude firms potentially affected by New York Executive Order 38. *T*-statistics based on standard errors clustered by state are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable:				Log(TDC1)				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sample:	Exclude Hospitals		COI/Whistleblower/Audit		Exclude Education		Exclude EO38 Nonprofits	
Executives Included:	CEOs	All	CEOs	All	CEOs	All	CEOs	All
Law	-0.018*** [-6.15]		-0.016*** [-4.96]		-0.025*** [-5.82]		-0.028*** [-7.91]	
Law x CEO		-0.019*** [-5.40]		-0.019*** [-3.99]		-0.026*** [-5.97]		-0.027*** [-7.35]
Observations	59,232	295,397	60,243	455,008	65,582	457,442	79,135	530,073
R-squared	0.912	0.760	0.927	0.701	0.936	0.693	0.931	0.703
Controls	Y	N	Y	N	Y	N	Y	N
Firm FE	Y	N	Y	N	Y	N	Y	N
Year FE	Y	N	Y	N	Y	N	Y	N
Firm-Year FE	N	Y	N	Y	N	Y	N	Y
Firm-CEO FE	N	Y	N	Y	N	Y	N	Y
CEO-Year FE	N	Y	N	Y	N	Y	N	Y

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Internet Appendix to *"Regulating CEO Pay: Evidence from the Nonprofit Revitalization Act"*
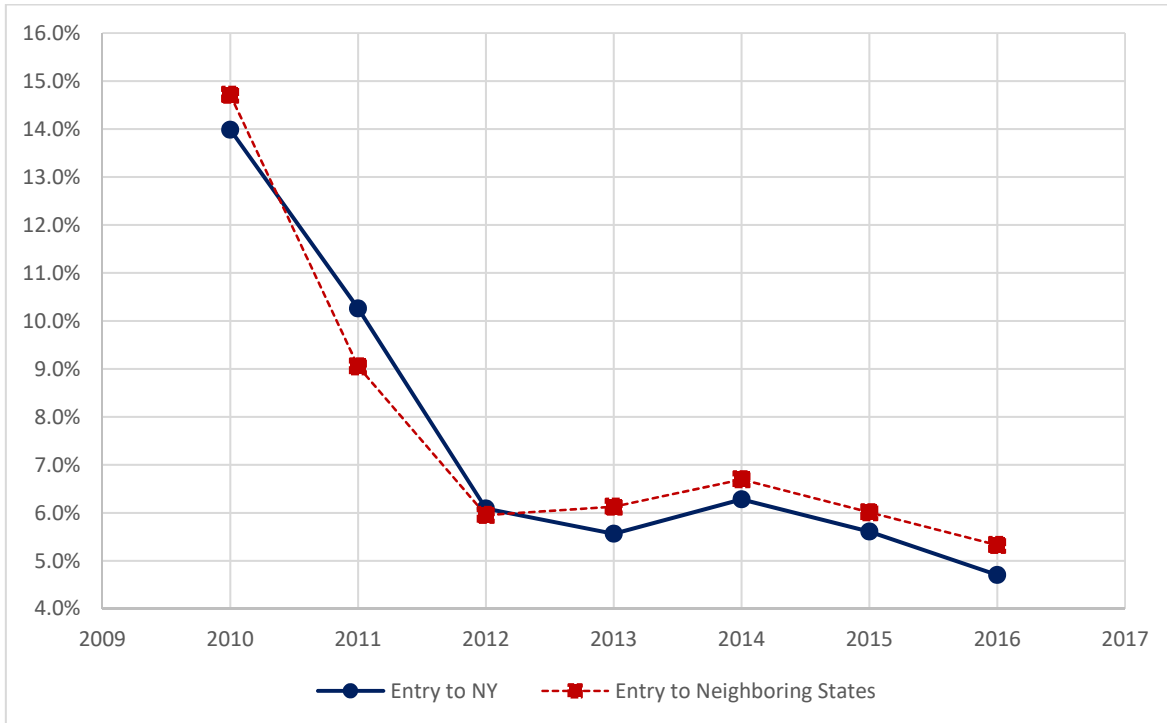
Figure IA.1. Nonprofit Firm Entry to New York State and Neighboring States.
The figure displays the trend in the number of nonprofits entering the state of New York as a fraction of the total number of nonprofits in New York (blue solid line) and the corresponding trend in the number of nonprofits entering the five states bordering New York (PA, CT, VT, NJ, and MA) as a fraction of the total number of nonprofits in these states (red dashed line).

Table IA.1. Total Executive Pay Controlling for Differences Prior to the Act

The table reports the OLS estimates, in which the dependent variable is the logarithm of one plus the total executive compensation. *Law* is an indicator variable equal to one if a nonprofit is based in NY and all or a majority of a firm-year occurs after July 2014 (the effective date of the *Nonprofit Revitalization Act of 2013*); zero otherwise. *T*-statistics based on standard errors clustered by state are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable:	Log(TDC1)	
	(1)	(2)
Law x CEO	-0.022***	-0.019***
	[-5.77]	[-5.06]
Observations	493,825	493,825
R-squared	0.710	0.710
Firm-Year FE	Y	Y
Firm-CEO FE	Y	Y
CEO-Revenue/Employee Quartile-Year FE	Y	N
CEO-Contributions & Grants Quartile-Year FE	N	Y

Table IA.2. Total Pay of Nonprofit CEOs: Difference-in-Differences Estimates

The table reports the OLS regression coefficients β_k, estimated from the following model: $\log\left(Pay_{ijt}\right) = \alpha_i + \delta_t + \nu_{jt} + \sum_{k=2009}^{k=2017} \beta_k \times NY_{it} \times D_k + \varepsilon_{ijt}$, where the dependent variable is the log of total CEO pay. The model includes firm, year, and industry-year fixed effects, variable NY_{it} is equal to one if a firm i is located in New York in year t, and D_k is an indicator variable equal to one for observations in the fiscal year k. The sample includes CEOs of nonprofit organizations in the sample. T-statistics based on standard errors clustered by state are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable:	Log(TDC1)
	(1)
2009 x NY	-0.002
	[-0.38]
2010 x NY	0.002
	[0.29]
2011 x NY	0.000
	[0.02]
2012 x NY	0.002
	[0.57]
2013 x NY	-0.003
	[-0.94]
2015 x NY	-0.009***
	[-2.81]
2016 x NY	-0.013***
	[-2.95]
2017 x NY	-0.025***
	[-4.83]
Observations	75,021
R-squared	0.922
Firm FE	Y
Ind-Year FE	Y

Table IA.3. Components of Nonprofit Executive Pay

The table reports the OLS estimates from regressions, in which the dependent variable is one of the five reported components of annual compensation for nonprofit executives: *log(base compensation)*, *log(bonus and incentive compensation)*, *log(other reportable compensation and perquisites)*, *log(retirement and deferred compensation)*, and *log(nontaxable benefits)*. *Law* is an indicator variable equal to one if a nonprofit is based in NY and all or a majority of a firm-year occurs after July 2014 (the effective date of the *Nonprofit Revitalization Act of 2013*); zero otherwise. The sample includes the full sample of nonprofit executives and data from all states. The last row in the table shows the average fraction of the specific component of executive pay in total executive pay. *T*-statistics based on standard errors clustered by state are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable:	Salary	Bonus Pay	Perquisite Pay	Deferred Pay	Nontaxable Benefits
Executives Included:	All	All	All	All	All
	(1)	(2)	(3)	(4)	(5)
Law x CEO	-0.024***	-0.023	-0.068***	-0.058***	0.014**
	[-5.58]	[-1.38]	[-4.06]	[-5.25]	[2.30]
Observations	554,283	554,276	552,605	553,653	554,236
R-squared	0.573	0.705	0.647	0.719	0.615
Firm-Year FE	Y	Y	Y	Y	Y
Firm-CEO FE	Y	Y	Y	Y	Y
Year-CEO FE	Y	Y	Y	Y	Y
Average % of Total Pay	60%	15%	13%	9%	3%

Table IA.4. Total CEO Pay and Methods Used to Establish Compensation

The table reports the OLS estimates, in which the dependent variable is the logarithm of one plus the total CEO compensation. *Law* is an indicator variable equal to one if a nonprofit is based in NY and all or a majority of a firm-year occurs after July 2014 (the effective date of the *Nonprofit Revitalization Act of 2013*); zero otherwise. *T*-statistics based on standard errors clustered by state are reported in brackets. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable:	Log(TDC1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Law	-0.018***	-0.018***	-0.017***	-0.018***	-0.017***	-0.018***
	[-5.09]	[-5.07]	[-5.00]	[-5.20]	[-5.12]	[-5.27]
Compensation Committee	0.004					0.007
	[0.43]					[0.83]
Compensation Consultant		0.025***				0.029***
		[2.87]				[3.49]
Review Other Firms' 990s			-0.016*			-0.027***
			[-1.69]			[-3.67]
Employment Contract				0.016*		0.024***
				[1.68]		[3.00]
Independent Compensation Review					-0.030**	-0.031**
					[-2.35]	[-2.58]
Observations	81,911	81,911	81,911	81,911	81,911	81,911
R-squared	0.930	0.930	0.930	0.930	0.930	0.930
Firm FE	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y

Table IA.5. Summary Statistics for the Sample of Electronic Filers

This table reports summary statistics for variables in our electronic filers sample. The sample consists of 6,900 unique nonprofit organizations that electronically filed Form 990 with the *Department of the Treasury Internal Revenue Service* in the period 2009–2017. Panel A provides summary statistics for the full sample of executives (firm-year-executive level); Panel B is for the sample of CEOs only (firm-year level). Panels C provides summary statistics for firm characteristics and governance variables (firm-year level). All variable definitions are provided in Table B.1.

Panel A: All Executives

Variable	Mean	SD	p10	p50	p90	Obs.
Total Compensation,$K	360.68	276.90	165.67	262.87	670.16	304,032
Salary,$K	262.07	165.82	135.02	207.01	459.62	303,912
Bonus Pay,$K	37.20	83.69	0	0.50	102.74	280,682
Perquisite Pay,$K	19.02	52.21	0	1.21	44.65	286,192
Deferred Pay,$K	23.32	36.77	0	13.68	46.03	295,308
Nontaxable Benefits,$K	16.76	12.87	2.19	15.10	30.68	299,043
CEO	0.11	0.32	0	0	1	304,032
Law	0.05	0.21	0	0	0	304,032
Average Hours / Week	42.75	6.31	38	40	50	303,626

Panel B: CEOs

Variable	Mean	SD	p10	p50	p90	Obs.
Total Compensation, $K	474.33	359.98	185.54	353.11	924.76	34,036
Salary, $K	327.64	187.70	157.04	275.57	570.00	34,021
Bonus Pay, $K	54.88	108.47	0	0.00	171.25	30,983
Perquisite Pay, $K	33.46	75.47	0	3.27	91.01	31,323
Deferred Pay, $K	37.50	57.24	0	17.25	102.65	32,706
Nontaxable Benefits, $K	20.41	17.94	2.11	16.18	44.92	33,024
Law	0.04	0.19	0	0	0	34,036
Average Hours / Week	42.88	6.67	38	40	55	33,983

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Panel C: Firm Characteristics

Variable	Mean	SD	p10	p50	p90	Obs.
Number of Executives	8	7	1	6	17	32,101
Assets	341.72	1,428.00	21.91	89.06	609.50	32,101
Revenue	164.37	486.09	10.17	45.15	333.65	32,101
Debt/Assets	0.39	0.30	0.06	0.33	0.78	32,087
Administrative Efficiency	0.83	0.10	0.72	0.85	0.93	32,100
Conflict-of-Interest Policy	0.99	0.09	1	1	1	32,101
Whistleblower Policy	0.95	0.23	1	1	1	32,101
Audit Committee	0.97	0.16	1	1	1	32,101
Contributions & Grants	22.63	71.23	0.09	4.24	43.31	32,101
Number of Volunteers	789	2,581	0	106	1303	32,101
Revenue/Employee	0.24	0.55	0.04	0.09	0.43	32,101
Board Independence	0.90	0.16	0.73	0.97	1	32,100
Family Relationship	0.25	0.43	0	0	1	32,101
Compensation Committee	0.67	0.47	0	1	1	32,101
Compensation Consultant	0.36	0.48	0	0	1	32,101
Employment Contract	0.41	0.49	0	0	1	32,101
Review Other Firms' 990s	0.79	0.41	0	1	1	32,101
Independent Compensation Review	0.96	0.19	1	1	1	32,101

Table IA.6. Placebo Test Using California

The table reports the OLS estimates from regressions, in which the dependent variable is the log of total annual pay for nonprofit executives, *Log(TDC1)*. *Law Placebo (California)* is an indicator variable equal to one if a nonprofit is based in CA and all or a majority of a firm-year occurs after July 2014 (the effective date of the *Nonprofit Revitalization Act of 2013*); zero otherwise. *T*-statistics based on standard errors clustered by state are reported in brackets. Specification (1) uses data from all states; in specification (2) the sample is limited to executives from the state of California and neighboring states. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable:	*Log(TDC1)*	
States Included:	*All*	*Neighbors*
	(1)	(2)
Law Placebo (California) x CEO	0.002	-0.005
	[0.46]	[-0.85]
Observations	554,288	63,775
R-squared	0.706	0.723
Firm-Year FE	Y	Y
Firm-CEO FE	Y	Y
CEO-Year FE	Y	Y