Business Executives on Nonprofit Boards: Evidence on Fundraising, Capacity, and Mission

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Abstract

When public funding retrenches, nonprofits and private actors increasingly co-govern social issues, raising questions about how business executives are associated with the production of public goods. We study how appointing business executives to nonprofit boards relates to a necessary, though not sufficient, condition for social impact: acquiring and managing resources. Using a panel of IRS Form 990 filings for U.S. nonprofits from 2010 to 2021 and matched comparisons, we examine changes in organizations that newly appoint business executives to their boards. We estimate that fundraising revenue rises by about 12% on average, and that program service revenue also increases, with larger gains when appointees are senior executives. We find stronger cash holdings, net income, and program spending, alongside modest increases in overhead ratios and top executive pay. We observe modest shifts in mission-statement language and small increases in new program introductions, but no evidence that these post-appointment mission changes are associated with declines in fundraising. The patterns are consistent with board-capital and resource-dependence perspectives, in which business executives expand nonprofits' human and social capital and influence resource deployment in the co-governance of public goods.

Keywords: nonprofits, business executives, board service, governance, fundraising

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1 Introduction

Private and nonprofit organizations increasingly co-govern social issues alongside the state, taking on roles in designing, financing, and delivering public goods (Luo and Kaul, 2019; Mahoney et al., 2009). Recent work in strategy and organization theory emphasizes that such private involvement can both complement and potentially distort public-interest goals, depending on how governance arrangements are structured (Kivleniece and Quelin, 2012; Quélin et al., 2017). Private actors may bring capabilities, resources, and innovation to social challenges, but they may also reorient decision-making toward their own priorities or logics (Klein et al., 2010, 2013; Ahn et al., 2025). This duality raises a broad tension in co-governance: when private expertise and interests enter the governance of public goods, how do they shape the scale and allocation of resources that support social impact?

Nonprofit boards are one locus where this tension becomes concrete. Facing governance and managerial complexity in coordinating, financing, and delivering collective solutions—and persistent shortages of managerial human capital in the nonprofit sector—many nonprofits recruit business executives with private-sector leadership experience to their boards (BoardSource, 2021). Advocates contend that such appointments bring "business discipline" and professionalization, expanding board capital (Hillman and Dalziel, 2003) by adding social capital[1] (Nahapiet and Ghoshal, 2005), financial resources,[2] and managerial expertise to improve performance. Critics, however, warn that importing business logics into mission-driven organizations may shift priorities toward metrics and practices that satisfy donors and corporate stakeholders but weaken attention to beneficiaries and mission (Weisbrod, 2004; Greenwood et al., 2011; Pache and Santos, 2013; Battilana and Lee, 2014). These competing

[1] In the nonprofit sector, social capital is crucial for governance effectiveness. Board members leverage their networks to access resources, information, and influence, which can enhance the organization's capacity to fulfill its mission.

[2] In some instances, business executives may be able to lend organizational resources to a nonprofit as well. As the CEO of a consumer products company told us: "When Logos school was truly struggling, George Paz, then CEO of Express Scripts joined and he not only had some of his team to help, but found other business leaders to join and the place began to thrive financially and organizationally; we even now have an endowment."

views highlight different mechanisms through which business executives on boards might influence nonprofits: by expanding access to resources and managerial capabilities, or by reorienting how resources are allocated and how missions evolve. Yet there is little large-sample evidence on how this common governance choice is actually associated with nonprofits' observable fundraising, growth, financial management, and mission-related changes.

In this paper, we ask: *What happens to nonprofits' fundraising, growth, financial management, and mission-related activities when they appoint business executives to their boards?* To answer this question, we compile a panel of electronically filed IRS Forms 990 and 990EZ for U.S. nonprofits from 2010 through 2021, covering millions of organization–year observations. We identify 5,442 nonprofit organizations in our baseline matched estimation sample that, after at least two consecutive years with no business executives on their boards within the event window, appoint at least one business executive. For each treated nonprofit, we construct a set of otherwise similar organizations that never list a business executive as a board member in any observed year and that, in the same fiscal year, appoint new directors who are not identified as business executives in BoardEx. Using this matched sample, we estimate average treatment effects on the treated (ATT) by comparing changes in outcomes for nonprofits that add a business executive to changes for matched nonprofits that add only directors without BoardEx-identified private-sector executive careers, leveraging the panel structure of the data to control for time-invariant organizational characteristics.

We estimate that, relative to matched controls, the average nonprofit's fundraising, organization size, and financial health increase following the arrival of a business executive on its board. Contributions rise by about 12 percent in the years after the first appointment, and we also find increases in fundraising revenue and fundraising expenses, consistent with post-appointment investments in fundraising capacity. Program service revenue also increases, with larger gains when the appointed business leader is more senior. Total annual revenue rises accordingly, with stronger gains when nonprofits recruit more senior executives and when additional business leaders join the board. The arrival of a business executive also

coincides with strengthened financial position and expanded capacity: cash holdings rise, net income widens, and spending on programs, employment, and the volunteer base grows. At the same time, pay to top employees rises, and we find only modest evidence of shifts in spending composition in the short event window, consistent with professionalization and investment in administrative and managerial functions. Finally, we observe changes in mission statements and modest semantic drift after business leaders join, and we also examine new program introductions as a complementary indicator of programmatic change.

These findings inform broader debates in strategy and organization theory about how private actors participate in the governance of public goods. Nonprofit organizations play a central role in providing public goods and increasingly co-govern social issues alongside private actors (Luo and Kaul, 2019; Mahoney et al., 2009), especially when public funding retrenches. In this environment, boards must navigate both the opportunities and the tensions created by business involvement. Our analysis is guided by resource dependence and board capital perspectives: we focus on how changes in board composition affect the acquisition and management of external resources (Pfeffer and Salancik, 1978; Hillman et al., 2009) and, in turn, the fundraising, growth, and financial policies that underpin an organization's capacity to scale social impact. Donors face increasing pressure to "give effectively" and to use performance information and metrics when deciding whether and where to give (Ebrahim and Rangan, 2014; Exley, 2020), yet impact is difficult to define and measure, particularly across heterogeneous sectors that provide hard-to-quantify public goods (Ebrahim and Rangan, 2014; Kaul et al., 2025; Stone and Cutcher-Gershenfeld, 2002). We therefore concentrate on organization-level outcomes—fundraising, revenue growth, financial health, and mission-related changes—that prior work and our conceptual framework identify as key manifestations of how donors and managers respond to governance changes (Herman and Renz, 1999; Hillman and Dalziel, 2003; Bloom and Van Reenen, 2007).

Our setting also extends work on boards and director capital, typically conducted in corporate contexts, to a domain in which directors lack residual claims but exercise substantial

influence over public-good provision. Research on corporate boards emphasizes their dual roles as monitors and resource providers, with directors' human and social capital—board capital—central to both functions (Nahapiet and Ghoshal, 2005; Hillman and Dalziel, 2003; Hillman et al., 2008). In nonprofits, volunteer directors must oversee strategy, finances, and compliance and—crucially—fundraise and secure the resources required to scale social impact (Brown and Guo, 2010; Callen et al., 2003; Hodge and Piccolo, 2011). Recent experimental evidence further shows that strengthening nonprofit governance can increase operating efficiency and measured social impact (Fangwa et al., 2024). Non-pecuniary reasons for board service often include public service motivation (Perry and Wise, 1990), but can also encompass professional networking (Clary et al., 1998), status and reputational capital (Bénabou and Tirole, 2006), and community engagement that can directly benefit executives' firms (Marquis et al., 2007). These motives raise concerns that, for some directors, identification with their for-profit sector roles (Hillman et al., 2008) may unintentionally shift nonprofits away from their core missions, consistent with research on organizations navigating multiple institutional logics (Greenwood et al., 2011; Pache and Santos, 2013; Battilana and Lee, 2014). Appointing business executives to nonprofit boards may therefore alter both the scale and the allocation of resources, *a priori* with ambiguous implications for social impact.

Collectively, our study makes three contributions. First, we move beyond cross-sectional associations between static board characteristics and performance to examine how a specific governance choice—appointing business executives to nonprofit boards—relates to subsequent fundraising, growth, financial management, and mission-related changes, using large-scale panel data, matched comparisons, and organization-level fixed effects. Second, we extend research on boards and director capital by bringing a corporate-governance lens to nonprofits, a setting in which directors are volunteers, lack residual claims, and yet play central roles in mobilizing and allocating resources for public goods. Third, we contribute to work on nonprofit governance, donor behavior, and hybrid organizing by documenting both the scale effects of appointing business executives (on contributions, program revenues, and

organizational capacity) and potential side effects (on overhead, top pay, and mission-related changes). In doing so, we provide large-sample administrative evidence on how board-level governance choices shape the resources available for social impact and how private-sector expertise carries over into the co-governance of public goods.

2 Conceptual Framework and Governance Mechanisms

In this section, we develop a conceptual framework that links nonprofit board composition—and, in particular, the appointment of business executives—to donors' behavior and to organization-level outcomes. We situate nonprofit boards within theories of board capital and resource dependence, explain how donors use governance and financial structure as signals of effectiveness, introduce a simple model of donor utility that formalizes the role of governance in shaping giving, and derive qualitative implications for fundraising, growth, financial management, and mission-related changes.

2.1 Nonprofit Boards, Board Capital, and Resource Dependence

Research on corporate boards emphasizes their dual roles as monitors and providers of critical resources. Directors contribute to monitoring managers and shaping strategic decisions, but they also bring human and social capital that can expand a firm's access to information, networks, and opportunities (Nahapiet and Ghoshal, 2005; Hillman and Dalziel, 2003; Hillman et al., 2008). The human and social capital embedded in directors—board capital—is thus central to both agency and resource dependence perspectives: it shapes the board's capacity to discipline management and to help secure financing, partnerships, and other external resources.

In nonprofits, board capital may matter at least as much as in for-profit firms, and possibly more. Nonprofits lack residual claimants and the disciplinary mechanisms that equity and takeover markets can provide. Instead, governance relies heavily on boards of volunteer

directors, who are charged with overseeing strategy, finances, and compliance and with ensuring that organizational resources support the mission (Brown and Guo, 2010; Callen et al., 2003; Hodge and Piccolo, 2011). From a resource dependence perspective, nonprofits operate in environments characterized by uncertain and often restricted funding streams and must cultivate relationships with donors, foundations, and public agencies (Pfeffer and Salancik, 1978; Hillman et al., 2009). Board members' connections and expertise help organizations navigate these dependencies and secure critical resources.

Empirical work on nonprofit governance documents systematic associations between board characteristics and organizational performance. Studies link board composition, practices, and size to measures of efficiency, contributions, program revenues, and executive incentives (e.g., O'Regan and Oster, 2005; Callen et al., 2003; Brown, 2005; Aggarwal et al., 2012). Other work shows that boards connected through interlocking directorates tend to be governed more effectively and receive higher donations (Bloch et al., 2020), and that governance indicators in Form 990 filings are positively related to fundraising (Harris et al., 2015). Recent experimental evidence further demonstrates that strengthening governance can increase operating efficiency and measured social impact in nonprofit healthcare providers (Fangwa et al., 2024). Taken together, these studies underscore that governance and board design are systematically related to resource flows and outcomes, even if most evidence is cross-sectional, sector-specific, or limited to particular regions.

Within this broader literature, appointing business executives to nonprofit boards represents a specific and potentially consequential change in board capital, especially when appointees hold more senior private-sector roles. Senior executives often have extensive networks, professional experience with complex financial and organizational decisions, and in some cases substantial personal wealth. When they join nonprofit boards, they can expand the organization's access to donors, corporate partners, and managerial expertise. At the same time, they may bring distinct priorities and logics shaped by their corporate experience, which can influence how resources are allocated and which activities are emphasized. We

therefore treat the arrival of a business executive as a shift in board capital that can affect both the scale of resources a nonprofit can mobilize and the way those resources are deployed, motivating our focus on fundraising, revenue growth, financial health, and mission-related changes.

2.2 Donor Behavior, Impact, and Governance Signals

Nonprofits depend on voluntary contributions and earned revenues to finance activities that generate social impact. Donors and other funders face growing pressure to "give effectively" and to use performance information and metrics when deciding whether, where, and how much to give (Ebrahim and Rangan, 2014; Exley, 2020). Donors typically care about both the act of giving and the impact their giving produces: they may derive intrinsic satisfaction from contributing to a cause and also place weight on the extent to which their contributions translate into valued outcomes for beneficiaries.

In practice, however, impact is difficult to define and measure, especially across heterogeneous sectors such as health, human services, education, arts, and environmental protection. Outcomes are multidimensional, unfold over time, and are often contested among stakeholders (Ebrahim and Rangan, 2014; Kaul et al., 2025; Stone and Cutcher-Gershenfeld, 2002). As a result, donors and funders rely heavily on proxies and signals of effectiveness and stewardship. These include observable governance practices, financial indicators, third-party ratings, and narratives about strategy and results. Board composition and financial structure are salient components of this signaling environment: the presence of experienced directors, formal governance practices, and prudent financial policies can signal that an organization is well governed and likely to manage resources responsibly (Herman and Renz, 1999; Hillman and Dalziel, 2003; Harris et al., 2015; Fangwa et al., 2024). Financial indicators such as program-spending ratios, overhead shares, reserves, and net income further shape perceptions of effectiveness, professionalism, and resilience (Fisman and Hubbard, 2005; Bloom and Chatterji, 2009; Ebrahim and Rangan, 2014).

From this perspective, appointing a business executive to a nonprofit board can alter donors' beliefs in several ways. It may increase perceived managerial competence and the organization's ability to acquire and deploy resources, raising expected impact per dollar. It may affect observable financial policies—such as cash holdings, net income, and the level and composition of spending—which in turn influence perceptions of effectiveness and stewardship. And it may change how the organization articulates its mission and program portfolio, potentially reinforcing or weakening donors' sense that the organization advances the causes they care about. Our conceptual framework and empirical analysis therefore focus on organization-level outcomes—fundraising, revenue growth, financial health, and mission-related changes—that capture how donors and managers jointly respond to changes in board composition.

2.3 A Simple Model of Donor Utility and Nonprofit Governance

To formalize the role of governance in shaping donations, we develop a simple model of donor utility. The goal is not to estimate structural parameters but to clarify how changes in board composition can affect giving through perceptions of effectiveness and mission alignment, and to highlight why the net effect is an empirical question. In our data, we observe organization-level revenue flows and mission narratives rather than donor-level choices, so the model guides the selection and interpretation of reduced-form outcomes rather than serving as an estimable structural framework.

Consider a donor i with wealth y_i who chooses a donation $d_i \geq 0$ to nonprofit organization k. The donor derives utility from private consumption, a warm glow from giving, and the social impact she believes her contribution generates:

$$U_i(d_i; \theta_k, m_k) = u(y_i - d_i) + \alpha_i w(d_i) + \beta_i h\left(\theta_k d_i, m_k\right), \tag{1}$$

where $u(\cdot)$ is increasing and concave, $w(\cdot)$ captures the warm glow from the act of giving

(with $w'(d_i) > 0$ and $w''(d_i) \leq 0$), and $h(\theta_k d_i, m_k)$ represents the perceived social impact of donor i's contribution d_i to organization k. The parameter θ_k summarizes the organization's effectiveness in converting resources into impact—impact per dollar contributed—and m_k denotes the organization's mission or programmatic focus. Donors differ in their taste for warm glow (α_i), their weight on impact (β_i), and their mission preferences.

Following work on hybrid organizations and mission drift, we assume that donors care about the alignment between the organization's mission and their own preferences (Weisbrod, 2004; Greenwood et al., 2011; Pache and Santos, 2013; Battilana and Lee, 2014). Let m_i denote donor i's ideal mission and $\Delta(m_k, m_i) \geq 0$ a distance metric with $\Delta(m_k, m_i) = 0$ when the organization's mission matches the donor's ideal. We interpret this mission distance not only for incumbent donors but also for potential donors who currently give little or nothing to organization k: individuals with high $\Delta(m_k, m_i)$ at a given (θ_k, m_k) may optimally choose $d_i^* = 0$, but can enter or expand giving if a mission shift reduces $\Delta(m_k, m_i)$ sufficiently. For tractability, suppose that perceived impact can be written as

$$h(\theta_k d_i, m_k; m_i) = [\theta_k - \kappa_i \Delta(m_k, m_i)]\, d_i, \tag{2}$$

where $\kappa_i \geq 0$ captures how strongly donor i penalizes mission misalignment. Substituting (2) into (1) yields

$$U_i(d_i; \theta_k, m_k) = u(y_i - d_i) + \alpha_i w(d_i) + \beta_i \left[\theta_k - \kappa_i \Delta(m_k, m_i)\right] d_i. \tag{3}$$

The donor chooses d_i to maximize U_i. The first-order condition for an interior optimum is

$$-u'(y_i - d_i^*) + \alpha_i w'(d_i^*) + \beta_i \left[\theta_k - \kappa_i \Delta(m_k, m_i)\right] = 0, \tag{4}$$

This condition highlights the two channels through which governance can affect giving. The term $\alpha_i w'(d_i^*)$ captures the marginal warm glow from giving, while $\beta_i[\theta_k - \kappa_i \Delta(m_k, m_i)]$

captures the marginal impact from an additional dollar, net of any penalty from mission misalignment.

Board composition enters the model through its effects on θ_k and m_k. Appointing a business executive may increase θ_k if donors believe that such boards are better at acquiring and deploying resources, improving effectiveness per dollar donated. At the same time, business executives may shift the organization's mission m_k toward projects that are more attractive to major donors, corporate partners, or business-oriented directors, potentially increasing $\Delta(m_k, m_i)$ for some donors while reducing it for others whose preferred missions lie closer to the new direction.

To understand donations at the organization level, it is useful to aggregate across the population of donors (both current and potential). Let $\mathcal{I}$ denote the set of individuals who could, in principle, donate to organization k, and let $d_i^*(\theta_k, m_k)$ be the optimal choice that solves (4), with $d_i^* = 0$ for individuals whose preferred bundle is not to give. Aggregate contributions can then be written as

$$D_k(\theta_k, m_k) = \sum_{i \in \mathcal{I}} d_i^*(\theta_k, m_k, m_i, \alpha_i, \beta_i, \kappa_i)\,. \tag{5}$$

Changes in θ_k or m_k affect D_k along two margins. On the *intensive margin*, existing donors adjust d_i^* upward or downward as perceived effectiveness and mission alignment change. On the *extensive margin*, some individuals' optimal donation switches between zero and positive as the organization's mission moves closer to or further from their ideal, or as their perceived effectiveness threshold is crossed. A shift in mission thus re-sorts donors in terms of both entry and exit and gift size, and the net effect on aggregate contributions is, in general, ambiguous *ex ante*. In particular, if mission distance increases for incumbent donors who care strongly about alignment, then mission change following a business-leader appointment can reduce contribution revenue even when perceived effectiveness rises.

Under standard regularity conditions, comparative statics on (4) imply that, for donors

at an interior solution,

$$\frac{\partial d_i^*}{\partial \theta_k} > 0 \quad \text{and} \quad \frac{\partial d_i^*}{\partial \Delta(m_k, m_i)} < 0 \quad \text{for} \quad \kappa_i > 0. \tag{6}$$

An increase in perceived effectiveness θ_k raises the marginal impact of giving and leads donor i to increase her optimal donation d_i^*. An increase in mission distance $\Delta(m_k, m_i)$ reduces the marginal impact term and thus lowers d_i^* for donors who care about mission alignment. Aggregating across donors, governance changes that alter θ_k and m_k can therefore increase or decrease total contributions depending on how they reshape the joint distribution of mission distance and impact perceptions across both incumbent and potential donors.

Aggregating across donors, increases in average d_i^* translate into higher contributions at the organization level, while decreases translate into lower contributions. If donors treat charitable giving as budget-constrained, higher perceived effectiveness for organization k could crowd out donations to other nonprofits, implying that fundraising gains for treated organizations come at the expense of nearby peers. Alternatively, if donors are willing to expand their overall giving when they perceive higher impact per dollar, governance changes could increase resources at the sector level. These possibilities motivate our empirical analysis of focal organizations; we leave spillovers and local competition for future work.

2.4 Implications for Fundraising, Growth, Financial Management, and Mission

The framework above yields qualitative expectations for how appointing business executives to nonprofit boards may relate to organization-level outcomes. These implications guide, but do not fully determine, our empirical analysis: they structure the dimensions we examine and the direction of effects we consider plausible, without generating sharp, point-identifiable predictions about the relative strength of each mechanism. We focus on four outcome domains introduced in Section 1: fundraising and revenue growth; organizational capacity and

financial resilience; overhead and professionalization; and mission-related changes.

Fundraising and revenue growth. If appointing a senior business executive increases perceived effectiveness θ_k—because donors expect better governance, more disciplined financial management, or more capable deployment of resources—equation (4) implies that donations should increase on average for donors who care about impact. In addition, business executives may expand the organization's fundraising frontier directly through their own giving and through access to their networks. They may also help develop or scale revenue-generating programs, drawing on managerial experience with pricing, marketing, and operations. We therefore expect that, on average, appointing a business executive will be associated with higher contributions and higher program service revenues, with potentially stronger effects when appointees are more senior, and thus with growth in total revenues, even though the magnitudes and timing may vary by executive rank, wealth, and role on the board. These changes can arise on the intensive margin (larger gifts from existing donors) and on the extensive margin (new donors attracted or retained by improved governance and signals of effectiveness). With Form 990 data, we observe total contributions rather than donor-level flows, so our estimates capture the combined effect of these channels.

Organizational capacity and financial resilience. Governance and board capital can influence not only how much funding an organization receives but also how it invests and safeguards resources. Resource dependence theory emphasizes that organizations facing uncertain environments benefit from strategies that enhance their control over critical resources and buffer them from shocks (Pfeffer and Salancik, 1978; Hillman et al., 2009). In nonprofits, this can involve building reserves, maintaining revenues above expenses, and investing in staff and program capacity. Senior business executives may encourage more systematic financial planning, risk management, and performance monitoring, which in turn can support expansion of programs, employment, and volunteer engagement. We therefore expect that appointing a senior business executive will be associated with increases in program spending,

headcount, and volunteer involvement, along with stronger balance sheets reflected in higher cash holdings and net income (Fisman and Hubbard, 2005).

Overhead and professionalization. Investing in organizational capacity often entails higher administrative and managerial costs. Business executives may view spending on management systems, staff development, and fundraising infrastructure as necessary to support growth and effectiveness, even if such expenditures raise overhead ratios in the short term. At the same time, board members with corporate backgrounds may advocate for compensation structures that attract and retain capable managers, leading to higher pay for top employees. Donors and watchdogs sometimes view high overhead and executive pay skeptically, but governance improvements that increase perceived and actual effectiveness can offset these concerns (Ebrahim and Rangan, 2014; Bloom and Chatterji, 2009). In our framework, we therefore treat increases in overhead shares and top pay as indicators of professionalization and capacity building, and we examine whether such changes occur alongside growth in program spending and revenues rather than displacing them.

Mission-related changes. Finally, the framework highlights potential consequences for mission and for other nonprofits. Appointing business executives may shift priorities toward programs that are more legible to donors, easier to measure, or more aligned with corporate or elite interests (Weisbrod, 2004; Greenwood et al., 2011; Pache and Santos, 2013; Battilana and Lee, 2014). This could manifest in changes to mission statements, the introduction of new programs, or reallocation of resources across activities. Because we do not directly observe beneficiaries' welfare or detailed program content, we treat mission-statement revisions and the introduction of new programs in Form 990 as observable proxies for changes in mission and programmatic focus. Consistent with the utility framework above, such changes can raise mission distance $\Delta(m_k, m_i)$ for some donors and lower it for others—including individuals who previously gave little or nothing to the organization—so that mission shifts can simultaneously erode some relationships and create new ones on both the intensive and ex-

tensive margins. Whether such changes constitute "mission drift" in a negative sense depends on one's baseline view of the mission and on the perspectives of beneficiaries and donors. In line with our model, we treat mission-related changes as empirical outcomes rather than assuming *ex ante* that they are beneficial or harmful. The model implies that mission shifts can re-sort donors and change contributions through both intensive and extensive margins, but with organization-level Form 990 data we do not observe donor-level entry, exit, or mission preferences directly. We therefore treat mission-statement revisions and new program introductions as observable proxies for changes in organizational focus.

In sum, our conceptual framework suggests that appointing business executives to nonprofit boards can plausibly affect multiple aspects of organizational performance through changes in perceived effectiveness, mission alignment, financial policies, and professionalization. It also makes clear that the net effects on fundraising, capacity, and mission are ambiguous *ex ante* and ultimately empirical questions. In the sections that follow, we bring large-scale panel data on nonprofits' board composition, finances, and mission statements to bear on these questions.

3 Data and Empirical Setting

3.1 Institutional Background and Data Sources

Our empirical setting is the population of U.S. 501(c)(3) public charities, which account for the majority of tax-exempt organizations and play a central role in providing public goods.[3] These organizations file annual information returns with the Internal Revenue Service (IRS), primarily using Form 990 or the shorter Form 990EZ. The returns report detailed information on revenues, expenditures, assets, board members, and key employees, as well as narrative descriptions of organizational activities and mission statements. Because nonprofit boards are disclosed on these filings, the IRS data provide an unusually comprehensive window into

[3]Public charities comprised about 72% of all registered nonprofits in 2021 (Internal Revenue Service, 2022).

the governance, finances, and operations of U.S. nonprofits over time.

Our analysis combines these administrative filings with external data on individual careers and wealth in order to identify business executives serving on nonprofit boards and to characterize their backgrounds. Specifically, we link IRS Form 990/990EZ data to BoardEx, a proprietary database that tracks the employment histories and organizational affiliations of corporate executives and directors worldwide (BoardEx, 2025), and to Wealth-X data on very high net worth individuals (accessed via BoardEx). We also use the IRS Business Master File (BMF), accessed through the National Center for Charitable Statistics (NCCS), to obtain information on organizational age and National Taxonomy of Exempt Entities (NTEE) classifications.

3.2 IRS Form 990 Data and Nonprofit Sample

We use all electronically filed IRS Form 990 and Form 990EZ returns from tax years 2010 through 2021. These filings are the primary source of standardized nonprofit data in the United States and provide the backbone of our panel. Each organization is identified by a unique employer identification number (EIN). Form 990EZ is a simplified version of the full return and may be filed by smaller entities with gross receipts between $50,000 and $250,000. Both forms report total revenue and its components (contributions, program service revenue, investment income, and other revenue), total expenses, total assets, board members, and compensation of key employees. Certain items—including the decomposition of contribution revenue into government grants and other support, the decomposition of total expenses into fundraising, program, and management and general expenses, cash on hand, number of employees, and number of volunteers—are available only on the full Form 990.

We supplement the annual returns with the IRS Business Master File (BMF), which contains metadata on each tax-exempt organization, such as its classification and the year its exemption was granted. Using archived BMF snapshots from NCCS dating back to 1989, we infer each organization's year of formation from the first reported exemption year and

assign a nonprofit classification based on its most frequently observed NTEE code.

We impose several sample restrictions and data-cleaning steps to ensure comparability across organizations and to mitigate the influence of outliers. First, we focus on 501(c)(3) public charities and exclude hospitals and donor-advised funds, which differ systematically from other nonprofits in their revenue structures and regulatory environments.[4] Second, to avoid having a small number of very large organizations dominate estimates when we express effects at the sample mean, we drop organizations that report more than $250 million in total revenue in any year. This revenue-cap restriction is applied to the regression analyses; Table 1 is descriptive and therefore includes nonprofits above $250 million in annual revenue (see the note to Table 1). Third, we set negative values to zero for financial measures that do not have meaningful negative interpretations.

To prepare variables for modeling, we divide all dollar-denominated variables by 1,000 and apply a log-plus-one transformation to continuous and count variables, except those that may take negative values or are naturally bounded. Net income, which can be negative, is transformed using an ordered quantile normalization procedure (Peterson and Cavanaugh, 2020). The program expense ratio, which lies between zero and one, is transformed using a logit function. We winsorize fundraising return on investment (ROI) at the 99.9^{th} percentile and net income at the 0.1^{st} and 99.9^{th} percentiles. Fundraising ROI is calculated as fundraising revenue divided by fundraising expenses. When fundraising expenses are zero, we code ROI as zero to avoid mechanically inflating the measure.

In Section 4, we describe how we construct an event-time panel around the first observed appointment of a business leader to a nonprofit board and form a matched comparison group of nonprofits that add new directors but not business leaders. In our implementation, appointment is measured as the first year an individual appears in Part VII as an uncompensated director. We additionally require that the appointed business leader remains on

[4]Following Fisman and Hubbard (2005), we exclude hospitals because fundraising comprises a relatively small component of their revenue and their operating environment is distinct from that of most nonprofits. We exclude hospitals and donor-advised funds based on their NTEE codes: hospitals are E19, E2X, E30, E31, and E80; donor-advised funds are T2X, T3X, and T50, where X denotes any digit from 0 to 9.

the board for at least two consecutive post-appointment years to focus on appointments that plausibly generate sustained board involvement. When multiple business leaders join in the same appointment year, we designate as the focal appointee the individual with the greatest accumulated private-sector experience and control for the number of additional business leaders on the board in post-appointment years. For treated nonprofits, we restrict attention to the first qualifying appointment event.

To strengthen comparability of treated and control organizations in the matched design, we restrict the cohort-year pools used for matching to nonprofits that exhibit no material mission instability in the pre-appointment years. Specifically, we exclude nonprofits that modify their mission statement or display semantic mission drift prior to appointment within the relevant pre-treatment window. For filers on the full Form 990, we also exclude nonprofits that introduce a new program in the pre-appointment years, since this measure is not available on Form 990EZ and is intended to capture meaningful programmatic change.

3.3 Identifying Business Executives on Nonprofit Boards

Throughout the paper, we use the terms "business leader" and "business executive" interchangeably to denote individuals with private-sector leadership experience who serve on nonprofit boards. We identify these individuals using BoardEx, a global database that compiles detailed career information on more than 1.7 million executives and directors associated with over 2.2 million organizations (BoardEx, 2025). BoardEx provides structured employment histories, including start and end years, job titles, and organizational classifications for each recorded position.

We designate an individual as a *business leader* in a given year if, during or prior to that year, they held a position in a private-sector organization, defined as a private company, a publicly listed firm, or a partnership such as a law firm, accounting firm, consultancy, or venture capital partnership. This definition covers all business executives we observe on nonprofit boards in our data. In later analyses, we use the *ExecRank* measure (Section 3.3.1)

to distinguish more senior from less senior business executives and to examine whether rank is associated with differential effects. The private-sector organization classification leverages the organizational-type codes in BoardEx to distinguish private-sector employers from nonprofits, government entities, and other organizations.

To identify nonprofit board service by these business executives, we link individuals in BoardEx to the names of directors reported in Part VII of IRS Forms 990 and 990EZ. Part VII requires filers to list board members, key employees, and highly compensated employees. We perform the linkage in two stages. First, we match nonprofit organization names across BoardEx and IRS data using semantic similarity via FAISS with MiniLM sentence embeddings, retaining the top match for each organization.[5] Second, within matched organizations, we match individuals using cleaned names and a name-matching algorithm that requires exact agreement on last names, consistency of middle initials when present, and either exact or nickname-consistent first names (e.g., "Bill" and "William") or consistent combinations of first and middle names (e.g., "George Alexander Trebek" and "Alex Trebek"). To focus on board roles, we restrict attention to individuals listed in Part VII who report zero compensation from the filing nonprofit and related entities in that year, thus excluding paid executives and staff.

3.3.1 Executive Rank

We capture variation in seniority among business leaders by constructing an ordinal executive-rank variable, *ExecRank*, that ranges from one to six, with one representing the highest level of seniority. In Table 1, we report prevalence for three seniority groupings that correspond to *ExecRank* bins: CEO–Chairman (ExecRank 1–2), Other C-level–EVP–SVP (ExecRank 3–4), and VP–Other (ExecRank 5–6). For each individual and year, *ExecRank* is defined as the highest private-sector executive rank achieved by that year, based on titles reported in BoardEx. We classify titles into rank categories according to a coding rubric detailed in

[5] https://faiss.ai; https://huggingface.co/sentence-transformers/all-MiniLM-L6-v2.

Table A13. Broadly, the top category includes C-suite roles such as chief executive officer, chief financial officer, and other chief officer positions; subsequent categories capture executive vice presidents and similar roles, senior vice presidents and partners, and progressively more junior managerial positions.

3.3.2 Additional Business-Leader Characteristics

We further characterize business leaders along several dimensions that may shape their potential contributions and influence on nonprofit boards. First, we identify founder-entrepreneurs (*Entre*) as individuals whose role in a private or publicly listed company begins within two years of the earliest recorded start year for that organization across all BoardEx individuals and whose titles include terms such as "founder," "owner," "partner," "chief [. . .] officer," or "CXO." To avoid spurious matches in very small or inactive entities, we require that the organization appears in the career histories of at least one additional BoardEx individual.

Second, we identify female business leaders (*Female*) using the gender variable in the BoardEx Individual file, which takes values "M" or "F." Although gender is imperfectly recorded in many datasets, BoardEx provides reasonably consistent coding for the executives we study.

Third, we flag wealthy business leaders (*Wealth*) using the Wealth-X database, as recorded in the BoardEx Individual Achievements file. Individuals appearing in Wealth-X are typically very high net worth or ultra-high net worth individuals. This indicator allows us to explore heterogeneity in outcomes by the personal wealth of the appointed business leader, which our introduction suggests may be particularly relevant for fundraising outcomes.

3.4 Outcomes and Covariates

Our empirical analysis focuses on organization-level outcomes that map directly onto the conceptual domains introduced in Sections 1 and 2: fundraising and revenue growth, organizational capacity and financial resilience, overhead and professionalization, and mission-

related changes. For fundraising and revenue growth, we use contribution revenue (excluding government grants), program service revenue, and total revenue, as well as fundraising return on investment (fundraising revenue divided by fundraising expenses).

To capture organizational capacity and financial resilience, we draw on measures of program expenses, total expenses, net income, and cash holdings, together with headcount and the number of reported volunteers. Overhead and professionalization are measured using management and general expenses, fundraising expenses, the overhead ratio (management and general plus fundraising expenses divided by total expenses), and the average pay of the top five employees. In the main analyses, we operationalize changes in overhead using the program expense ratio, defined as program expenses divided by total expenses, which is one minus the overhead ratio. Finally, we proxy mission-related changes using indicators for changes in mission statements and for the introduction of new programs, constructed from narrative fields on Form 990.

These outcomes are complemented by a rich set of covariates used to construct matched samples and to control for pre-existing differences between nonprofits. Our propensity-score model (described in Section 4) includes categorical indicators for sector classification at the first-character NTEE level (NTEE1), state (including DC), and return type (Form 990 vs. 990EZ). In addition, it includes the organization's size and financial structure measured using log-plus-one transformations of total revenue and its components (contributions, program service revenue, investment income, and other revenue), total expenses and key expense categories (program, management and general, and fundraising), total assets and cash, board size, staffing and volunteer counts, organizational age, and average pay of the top five employees. We also include baseline measures that summarize financial performance and allocation—ordered-quantile-normalized net income, the logit-transformed program expense ratio, and fundraising return on investment (ROI)—and we incorporate lagged values of these covariates over the available pre-treatment years within the matching window. To further improve comparability of reporting regimes, we require exact agreement on return

type in the appointment year and in the pre-treatment years used for matching. Summary statistics for the full set of Form 990/990EZ filings and for the estimation sample, including covariate balance between treated and matched control units, are reported in Appendix Tables A1 and A2. We assess balance using standardized mean differences, with absolute values below 0.1 indicating satisfactory covariate balance (Austin, 2011a; Normand et al., 2001).

4 Empirical Strategy

Our objective is to estimate how appointing a business executive to a nonprofit's board is associated with subsequent changes in fundraising, revenue growth, financial management, and mission-related outcomes. Because business executives are not randomly assigned to nonprofit boards, our data are non-experimental. We therefore combine propensity-score matching with panel difference-in-differences specifications to move toward causal inference, while interpreting our estimates as average associations for treated organizations under maintained assumptions about selection on observables and parallel trends.

4.1 Treatment Definition and Observation Window

We define a nonprofit as "treated" when it first appoints a business executive—an individual who meets our BoardEx-based business-leader definition in Section 3.3—to its board, after a pre-treatment period in which no such executives are present in the observed event-time window. Formally, organization i is treated at time $t = 0$ if (i) it reports no business executives on its board in the pre-treatment years of the relevant event-time window (e.g., $t = -2$ and $t = -1$ in the baseline window); (ii) it reports at least one business executive as a board member in year $t = 0$; and (iii) the focal executive remains on the board in year $t = 1$, so that the appointment persists for at least two consecutive post-appointment years ($t = 0$ and $t = 1$). If more than one business executive joins in the same year, we

select as the focal appointee the individual with the most years of private-sector experience recorded in BoardEx by $t = 0$. Each nonprofit can enter the treated group at most once. We also construct a variable $Additional_{it}$ that counts the number of additional business leaders—those other than the focal business leader—on the nonprofit's board in each post-treatment year.

To study dynamic changes around the appointment, we construct a symmetric observation window around $t = 0$. Our baseline analyses use a five-year window centered on the first appointment, with two pre-treatment years ($t = -2$ and $t = -1$), the treatment year ($t = 0$), and two post-treatment years ($t = 1$ and $t = 2$). We require treated organizations and their matched controls to have non-missing Form 990/990EZ filings in each year of this window. In Appendix Table A3, we show that our results are robust to using an extended window with three pre-treatment years (down to $t = -3$) and two post-treatment years (up to $t = 2$).

4.2 Construction of the Comparison Group

The key challenge in constructing an appropriate comparison group is that nonprofits that appoint business executives may differ systematically from those that do not, both in observable characteristics and in unobserved propensities to change their boards. To mitigate selection on observable characteristics, we use propensity-score matching (PSM) to identify nonprofits that are similar to treated organizations prior to $t = 0$ but do not appoint business executives.

We define the pool of potential control organizations as nonprofits that (i) never report a business executive on their board in any observed year, and (ii) experience a board-change year in the same fiscal year as the treated organization's focal appointment. Operationally, we require that control organizations add at least one new (non–business executive) director in year $t = 0$, so that treated and control organizations both experience director turnover but differ in whether the new director is a business executive.

We implement matching separately by treatment cohort year. For each calendar year in which at least one nonprofit experiences its first business-executive appointment (i.e., the cohort's $t = 0$ year), we form a cohort-specific matching sample consisting of organizations with complete filings over the full event-time window and covariates measured in the pre-treatment period (years $t = -1$ and earlier within the window). This cohort-by-cohort approach ensures that treated organizations are compared to controls drawn from the same fiscal-year environment. Nonprofits may revise their missions or expand into new program areas for reasons unrelated to board composition, and these strategic changes can themselves affect revenues and expenses. To mitigate concerns that such shifts drive both the appointment of a business executive and subsequent outcome changes, we further restrict each cohort-year matching pool to organizations whose mission and program activity are stable in the pre-treatment years of the event window. Specifically, we exclude organizations that, in the pre-treatment period, (i) report a mission-statement modification, (ii) report a new program, or (iii) exhibit substantial semantic drift in mission-statement text relative to the baseline mission. This restriction is applied symmetrically to treated organizations and potential controls before matching.

Propensity scores are estimated using a ridge-penalized logistic model that predicts whether an organization is treated in that cohort year as a function of sector, location, filing type, and lagged financial and organizational characteristics. The model includes indicators for first-character NTEE sector (NTEE1), state, and return type (Form 990 vs. Form 990EZ), and uses the full set of pre-treatment covariates in each pre-treatment year within the event window by including lagged values of these covariates. Covariates enter the propensity-score model in their transformed forms described in Section 3.2 (i.e., log-plus-one for nonnegative dollar and count measures; ordered-quantile normalization for net income; logit transformation for the program expense ratio).

We conduct nearest-neighbor matching using the logit of the estimated propensity score as the distance metric and impose a caliper of 0.2 standard deviations on this logit distance

(Austin, 2011b). To improve comparability in reporting structure, we require exact matching on return type (Form 990 vs. Form 990EZ), including exact agreement on return type in the relevant pre-treatment years used for matching. We additionally incorporate a near-exact distance component by matching on standardized baseline scale at $t = -1$ (specifically, the level of log total revenue) using a Mahalanobis metric, which helps ensure that treated and control organizations are closely aligned in baseline size at the time of matching.

Matching is conducted with replacement and uses one-to-one nearest-neighbor matches within cohort years. Because controls can be reused across treated organizations, we implement the matched sample as a set of treated–control links and weight observations by the implied matching weights, distributing each organization's total matching weight across its appearances when it is reused. We carry these weights forward when estimating treatment effects in the panel specifications. We assess covariate balance using standardized mean differences before and after matching and report balance diagnostics for the estimation sample in Appendix Table A2.

4.3 Difference-in-Differences Specification

Given the matched sample, we estimate treatment effects using an organization-level panel regression of the following form:

$$Y_{icst} = \alpha_i + \beta_1 \, TreatPost_{it} + \gamma_{ct} + \delta_{st} + \epsilon_{icst}, \tag{7}$$

where Y_{icst} denotes an outcome for organization i in NTEE1 category c, state s, and tax year t; α_i are organization fixed effects; γ_{ct} are category-by-year fixed effects; and δ_{st} are state-by-year fixed effects. The indicator $TreatPost_{it}$ equals one for treated organizations in years $t \geq 0$ within the observation window and zero otherwise.

We estimate equation (7) on the matched sample and weight observations using the matching weights implied by the propensity-score matching procedure (including reuse of

controls under matching with replacement). Under standard difference-in-differences assumptions for the matched sample, the coefficient β_1 can be interpreted as an average treatment effect on the treated (ATT) within the event-time window.

Standard errors are clustered two ways—by organization (EIN) and by tax year—to allow for serial correlation within organizations and common shocks across organizations within years. Organization fixed effects absorb all time-invariant differences across nonprofits, including baseline size, business model, and unobserved board characteristics. Category-by-year fixed effects control for time-varying shocks at the sector level (e.g., policy changes or demand fluctuations that differentially affect arts organizations, human services providers, and so on). State-by-year fixed effects control for location-specific shocks to the nonprofit environment and state economic conditions.

Our identification strategy relies on a conditional parallel-trends assumption: conditional on observables used in matching and on fixed effects, the outcomes of treated and matched control organizations would have followed similar trends in the absence of treatment. We assess this assumption using covariate balance and event-time diagnostics. First, we examine covariate balance for treated and matched control organizations using standardized mean differences (Appendix Table A2).

Second, we examine pre-treatment and post-treatment dynamics using an event-study presentation that is estimated in two pieces and then combined. Specifically, we estimate pre-treatment coefficients using only pre-treatment observations (e.g., $t \leq -1$) and normalize the reference period $t = -1$ to zero. We then estimate post-treatment coefficients using observations from $t \geq -1$ and again normalize $t = -1$ to zero, plotting the post-treatment coefficients for $t \geq 0$. We present the resulting coefficients as a single stitched series. This approach isolates pre-treatment dynamics from large post-treatment shifts in short event windows, which can otherwise mechanically affect the within-organization mean used by a fixed-effects event-study and make pre-period deviations appear spuriously negative. Across outcomes, these diagnostics reveal no systematic evidence of differential pre-trends between

treated organizations and their matched controls.

4.4 Heterogeneity and Mechanisms

To explore heterogeneity in treatment effects and illuminate potential mechanisms, we extend equation (7) by interacting the treatment indicator with characteristics of the appointed business executive:

$$Y_{icst} = \alpha_i + \beta_1 \, TreatPost_{it} + \beta_2 \, TreatPost_{it} \times LeaderChar_i + \gamma_{ct} + \delta_{st} + \epsilon_{icst}, \tag{8}$$

where $LeaderChar_i$ is a characteristic of the focal business leader for organization i, such as an indicator for holding a C-suite role (high *ExecRank*), an indicator for being listed in Wealth-X (*Wealth*), or entrepreneur and gender indicators. Because leader characteristics are constant for the focal appointment, we treat $LeaderChar_i$ as time-invariant and absorb its main effect in the organization fixed effect α_i.

In this specification, β_1 captures the average treatment effect for the omitted category of leaders, while β_2 captures incremental effects for organizations that appoint leaders with the specified characteristic. For example, when $LeaderChar_i$ is the wealth indicator, β_2 measures how much more contributions and other outcomes change, on average, when the new business executive is wealthy relative to when they are not. We interpret these heterogeneity patterns as suggestive evidence on the channels emphasized in our conceptual framework (e.g., fundraising networks and credibility for wealthy leaders, managerial expertise for highly ranked executives), while recognizing that we cannot separately identify intensive and extensive margins of donor behavior with organization-level data.

We also examine the role of additional business leaders by including the count variable $Additional_{it}$ and its interaction with treatment in extended specifications. These models test whether marginal effects diminish or amplify as more business executives join the board after the initial appointment.

5 Empirical Results

In this section, we estimate equation (7) (and its heterogeneous-treatment versions) to examine how appointing a business executive to a nonprofit board is associated with changes in fundraising, revenue, organizational capacity, financial health, overhead, and mission-related outcomes. We organize our analysis into four conceptually related outcome families: (i) *fundraising and revenue*, (ii) *organizational capacity and financial health*, (iii) *pay, overhead, and professionalization*, and (iv) *mission change*. Except where noted, the dependent variables are log-plus-one transformations of Form 990 and 990EZ entries (with dollar amounts in \$1,000) or simple transformations thereof (e.g., a logit transformation of the program expense ratio, or an ordered-quantile-normalized transformation of net income). For binary outcomes, coefficients are interpreted as percentage-point changes. Thus, for log-transformed outcomes, coefficients on $TreatPost_{it}$ and its interactions can be interpreted as approximate percentage differences between treated and control organizations.[6]

Our main specification uses the five-year window around the first year in which a business executive appears on the nonprofit's board ($t = -2$ to $t = 2$), with $TreatPost_{it} = 1$ for $t = 0, 1, 2$ and 0 otherwise, and a matched sample constructed using the propensity-score procedure described in Section 4.2. As described above, the cohort-specific matching pools are restricted to nonprofits with stable mission and program activity in the pre-treatment years of the event window, so that pre-existing strategic reorientation is less likely to confound post-appointment changes in financial and operational outcomes. This sample is well balanced on pre-treatment observables (Table A2), with standardized mean differences below 0.1 across the reported covariates. All regressions include EIN fixed effects as well as State-by–Tax-Year and NTEE1-by–Tax-Year fixed effects, and standard errors are clustered as described in Section 4.3. We complement these difference-in-differences estimates with event-study specifications that trace dynamics before and after treatment and provide visual

[6]The approximation is more accurate for smaller coefficients. For log-transformed outcomes, the exact percentage change is given by $\exp(\beta) - 1$.

checks for pre-treatment trends (Figures 1–9). Appendix Table A3 shows that the matched sample remains well balanced in the extended window ($t = -3$ to $t = 2$). Appendix Tables A4–A9 report the corresponding extended-window estimates, which preserve the main qualitative patterns in the baseline results.

Throughout, we interpret effect sizes in the context of the prevalence and distribution of business-executive board service documented earlier in the paper. In 2021, 8.2% of nonprofits filing Form 990/990EZ had at least one business leader on their board; prevalence rises sharply with nonprofit size and is especially high in higher education (40.4%) and science (18.0%), with health (excluding hospitals) at 10.8% (Table 1).

5.1 Fundraising and Revenue Effects

We begin by documenting how appointing a business executive relates to fundraising outcomes and revenues. Table 2 reports estimates of equation (7) for contribution revenue and related fundraising measures.

Column (1) shows that *Log (Contribution Revenue)* increases by 0.116 on average after a business executive joins the board ($p < .001$), corresponding to an increase of roughly 12% in contribution revenue. Column (2) adds interactions capturing additional business executives on the board, the appointee's Wealth-X status, and executive rank; in these specifications, the post-appointment contribution gains remain positive, but the interaction terms are not estimated precisely.

Columns (3) and (4) examine *Log (Government Grants)*. The estimated post-appointment effect is small and not statistically distinguishable from zero, and we do not find clear heterogeneity by board exposure or executive characteristics in this outcome.

Columns (5) and (6) examine *Log (Fundraising Revenue)* (private support net of government grants). The baseline *TreatPost* coefficient in column (5) is 0.107 ($p < .001$), corresponding to an increase of roughly 11%.

We next examine fundraising mechanisms by considering fundraising productivity and

inputs. Column (7) shows that *Log (Fundraising ROI)* increases by 0.047 ($p < .05$), indicating modest improvements in fundraising productivity. Columns (9) and (10) show that *Log (Fundraising Expenses)* rise by 0.119 ($p < .001$) on average after appointment. In the specification with interactions (column (10)), *TreatPost* × *Additional* is 0.087 ($p < .01$), implying that nonprofits with additional business executives on the board increase fundraising spending more sharply, consistent with post-appointment investments in fundraising capacity.

Figure 1 presents event-study estimates for the five fundraising-related outcomes. The plots show relatively flat pre-treatment trends and discrete increases in the treatment year ($t = 0$), with persistence into subsequent years.

Table 3 extends the analysis to program service revenue and total revenue. Column (1) shows that *Log (Program Service Revenue)* rises by 0.039 ($p < .05$) after a business executive joins the board, and this estimate is similar when we add interactions for additional executives and wealth (columns (2)–(3)). Column (4) adds an interaction with executive rank. The interaction *TreatPost* × *ExecRank* is negative and marginally significant (–0.018, $p < .05$), suggesting that program-service revenue gains are larger when nonprofits recruit more senior executives.

For total revenue, column (5) shows that *Log (Total Revenue)* increases by 0.099 ($p < .001$), corresponding to roughly a 10% increase. Revenue gains are larger when additional business executives join the board: *TreatPost* × *Additional* is about 0.035–0.037 ($p < .01$) across columns (6)–(8). Wealth is not systematically associated with larger total-revenue gains in these specifications. Column (8) again shows a negative interaction with executive rank (–0.009, $p < .05$), consistent with larger revenue gains when nonprofits appoint more senior executives.

Figure 3 plots event studies for *Log (Program Service Revenue)* and *Log (Total Revenue)*. As in Figure 1, we see little evidence of pre-treatment trends and clear upward breaks at $t = 0$, which persist in the post-treatment period. Taken together, Tables 2 and 3 indicate that appointing a business executive is associated with higher private fundraising and higher

total revenues, with especially pronounced increases when additional business executives join the board.

5.2 Organizational Capacity and Financial Health

Higher revenues expand nonprofits' potential capacity to deliver services and to sustain operations, but they do not guarantee such outcomes. We therefore examine how business-executive board service relates to measures of program spending, staffing, volunteers, net income, and cash holdings.

Tables 4 and 5 report estimates for service output and financial health outcomes, including *Log (Program Expenses)*, *Log (Employees)*, *Log (Volunteers)*, *Log (Cash)*, and normalized net income. Because several inputs (including program expenses, employees, volunteers, and cash) are reported only on the full Form 990, the corresponding specifications use the Form 990 subsample.

In the baseline specifications, appointing a business executive is associated with increases in program expenses (0.044, $p < .001$), employees (0.043, $p < .001$), and volunteers (0.112, $p < .001$) (Table 4). Table 5 shows that total assets increase (0.052, $p < .001$), cash holdings increase (0.086, $p < .01$), and net income rises on the normalized scale (0.063, $p < .01$). Taken together, these patterns suggest that the revenue gains documented above coincide with expansion in operating scale and with improved short-run financial slack.

The heterogeneous specifications show that expansion is larger when nonprofits add more than one business executive. The interaction with *Additional* is positive for program expenses (0.024, $p < .01$) and volunteers (0.091, $p < .001$), and is marginally positive for employees (0.015, $p < .10$) (Table 4). Table 5 shows weaker and less precise interactions with *Additional* for assets and cash, though the interaction for normalized net income is marginally positive (0.026, $p < .10$). Differences by executive rank are modest in these outcomes, and the *TreatPost* $\times$ *ExecRank* interactions are generally imprecisely estimated.

Figures 5 and 7 present event-study plots for service output and financial health outcomes,

including program expenses, employees, volunteers, net income, and cash holdings.

5.3 Pay, Overhead, and Professionalization

We next examine how appointing business executives affects compensation of top employees and the overhead share of spending. Rising executive pay and overhead are often viewed as potential symptoms of governance problems or agency costs, especially in nonprofits. At the same time, higher pay may help attract and retain talented managers, and investments in administrative and fundraising capacity can enhance long-run effectiveness.

Table 6 reports results for *Log (Average Pay of Top 5 Employees)* and the logit transformation of the program expense ratio. Because the program expense ratio is available only on the full Form 990, those specifications use the Form 990 subsample, whereas the top-pay outcome is available for the full matched sample.

Columns (1)–(4) show that appointing a business executive is associated with higher top pay. In the baseline specification, *Log (Average Pay of Top 5 Employees)* increases by 0.045 ($p < .01$). This increase is similar when we add controls for additional business leaders and wealth (columns (2)–(3)). In column (4), which adds the interaction with executive rank, the post-appointment effect remains positive (0.076, $p < .05$), while the rank interaction is not precisely estimated, suggesting limited evidence of systematic heterogeneity in top-pay changes by leader seniority.

Columns (5)–(8) examine the program expense ratio (on the logit scale). Across specifications, the estimated *TreatPost* coefficient is small and not statistically distinguishable from zero, indicating limited evidence of systematic post-appointment shifts in the program share of spending in this window. In column (8), the interaction with executive rank is negative and marginally significant (–0.016, $p < .10$), suggesting that any changes in spending composition may be somewhat more pronounced when nonprofits recruit more senior executives, though the magnitude is modest.

Figure 3 presents event-study plots for *Log (Average Pay of Top 5 Employees)* and the

logit of the program expense ratio. Top pay shows a discrete jump at $t = 0$ with no visible pre-trend, while the program expense ratio exhibits at most a modest decline in the post-treatment period.

Taken together, the pay and overhead patterns are consistent with professionalization and capacity building: nonprofits expand program activity and staffing while also increasing managerial and fundraising investments, rather than reallocating sharply away from mission-related spending.

5.4 Mission Change

We now turn to outcomes that speak more directly to whether business executives are associated with shifts in nonprofits' stated mission and program portfolio. Because Form 990 does not identify donors or beneficiaries, we do not observe donor–mission alignment directly. Instead, we use changes in mission narratives and reported program activity as observable proxies for shifts in organizational focus. A natural concern is that such shifts could reduce donor willingness to give if they are perceived as mission drift or reduced alignment with beneficiaries. We therefore complement the mission-outcome estimates with an analysis that directly relates post-appointment mission change to changes in contribution revenue within the treated sample.

Table 7 reports estimates for three mission-related measures using a subsample restricted to nonprofits with stable mission activity in the pre-treatment years of the event window. The table examines (i) *Any Change in Mission Statement*, a cumulative indicator that equals one once a nonprofit makes a post-appointment mission-statement change; (ii) *Mission Semantic Change*, which measures the semantic distance of the mission statement from its baseline at $t = -1$; and (iii) *New Program*, a cumulative indicator for introducing a new program in the post-appointment period (available for Form 990 filers).

The results indicate meaningful post-appointment changes in both discrete mission revisions and semantic distance. In columns (1)–(2), *Any Change in Mission Statement* increases

by about 0.165 ($p < .001$), indicating that treated nonprofits are substantially more likely to revise their mission statement in the post-appointment years. The likelihood of mission revision is higher when nonprofits have greater exposure to business leaders on the board: *TreatPost* × *Additional* is positive (0.024, $p < .01$). The interaction with the leader's Wealth-X status is positive but only marginally significant in this specification (0.039, $p < .10$).

By contrast, the semantic measure shows a clear, though modest, shift. In columns (3)–(4), *Mission Semantic Change* increases by about 0.034–0.038 ($p < .001$), implying that post-appointment mission statements become roughly 3–4 percentage points more semantically distant from the baseline at $t = -1$ (i.e., they remain about 96–97% similar on average). This semantic drift is slightly larger when additional business executives join the board (*TreatPost* × *Additional* = 0.008, $p < .05$), while wealth and rank-category interactions are not precisely estimated in this outcome.

Finally, columns (5)–(6) indicate a small positive association between appointment and *New Program* (0.014, $p < .05$), suggesting modest increases in program introduction in the post-appointment period among Form 990 filers in the matched sample. The interactions with additional business leaders, wealth, and executive rank are not precisely estimated for this outcome.

Figure 9 complements these estimates with event-study plots. Consistent with the sample construction, pre-treatment values are flat by design, and the post-treatment patterns show small but detectable changes concentrated in the post-appointment years.

A natural concern is that these mission-related changes could come at the expense of fundraising if they reduce donor–mission alignment. To assess this possibility, Table 8 relates post-appointment mission change to contribution revenue within the treated sample using two complementary designs. In the EIN-level specification, nonprofits that change their mission statement (or exhibit greater maximum mission drift) do not experience weaker post–pre contribution growth. In treated-only panel specifications, year-to-year contribution growth is not lower in years when mission change occurs or when mission distance is higher.

Taken together, these results provide no evidence that mission change following business-leader appointments carries a fundraising penalty in the event window we study.

5.5 Robustness and Additional Heterogeneity

Finally, we summarize robustness checks and additional heterogeneity analyses. First, we re-estimate the main specifications on an extended window with three pre-treatment years and two post-treatment years ($t = -3$ to $t = 2$), using a matched sample constructed with the same propensity-score procedure (Appendix Table A3). Across this longer window, the core fundraising and total-revenue patterns persist (Appendix Tables A4 and A5). Contribution revenue and fundraising revenue remain positive and precisely estimated, and fundraising expenses continue to increase. Total revenue remains positive but somewhat smaller than in the five-year window. For service output and financial health, volunteer counts continue to rise strongly, while employee and program-expense estimates are generally smaller and less uniform across specifications than in the baseline window (Appendix Tables A7 and A6). Top-pay increases remain positive but are modestly smaller, and the program expense ratio becomes modestly more negative in the extended window (Appendix Table A8). Mission semantic change remains positive, and mission-statement changes remain more likely post-appointment; new-program introduction remains positive but small (Appendix Table A9).

Second, to connect with literatures on board diversity and entrepreneurial experience, we examine whether estimated effects differ by the gender or entrepreneurship experience of the focal business executive. Appendix Table A10 augments the baseline specification with an interaction between *TreatPost* and an indicator for whether the focal executive is female, and Appendix Table A11 performs an analogous exercise for entrepreneurship experience. We treat these patterns as exploratory and interpret them cautiously given the number of outcomes examined.

Taken together, extending the panel window supports the robustness of the paper's core fundraising and total-resource findings, while indicating that some capacity and profession-

alization outcomes are more sensitive to window length and are estimated with less precision in the extended-window specifications.

6 Discussion

Senior business executives are believed to possess personal wealth, social capital, and a portfolio of managerial skills that can be valuable for nonprofits, which play a central role in science, higher education, and healthcare in the United States, as well as in the delivery of a wide range of public services.

Nonprofits that successfully recruit business leaders to their boards of directors subsequently experience significant increases in contribution revenue and private fundraising revenue, along with higher fundraising expenditures. These patterns are consistent with post-appointment investments in fundraising capacity rather than a pure efficiency improvement in fundraising inputs. We also find that revenue gains are larger when additional business leaders join the board, and that program service revenue gains are larger when the appointed business leader is more senior. Overall, the estimates indicate meaningful increases in total revenue following appointment. Given that board service is time-limited and advisory, the magnitude of these associated revenue changes underscores why executives' networks, credibility, and managerial experience are often viewed as valuable forms of board capital in the nonprofit sector.

These increases in revenue appear to coincide with an expansion in nonprofits' capacity to deliver services. Program spending, staffing levels, and volunteer involvement *all* increase. Net income rises and cash holdings increase, consistent with an improved short-run financial position in the post-appointment years. We interpret this as improving the financial sustainability of the nonprofit, although other interpretations are possible. We also find that pay to top employees increases, and we observe only modest evidence of shifts in spending composition in the baseline window. While some would argue that this reflects declining

governance quality, we would argue that the picture is more nuanced.

We also observe signs that the appointment of business executives to nonprofit boards is associated with shifts in mission-related narratives. Nonprofits are more likely to revise their mission statements following such appointments and exhibit modest semantic drift relative to baseline mission language. We also observe small increases in new program introductions, although the magnitudes are modest. Importantly, in the treated sample we do not find evidence that these post-appointment mission changes are accompanied by declines in contribution revenue (Table 8).

6.1 Limitations

Our estimation strategy seeks to compare the performance of nonprofits that recruit business leaders to their boards for the first time with those that are similar along many observable dimensions but instead recruit non-business leaders to their boards.

6.1.1 Our estimates are based on the first business leader to join the board

By construction, we focus on the first business leader to join the board. Our main estimates (*TreatPost*), then, should be interpreted in this light. They represent the average changes in nonprofits when going from zero to one business leader on the board, rather than the average changes to any board, many of which already include business leaders. The *TreatPost*Additional* estimates are closer to the incremental impact of adding a business leader to a board that already has one or more of them, but we note that it addresses the special case in which the board had no business leaders in the pre-treatment years of the event window prior to acquiring one.

6.1.2 Matching and Selection

The event-study diagnostics show no systematic evidence of differential pre-trends between treated and matched control groups prior to appointment (see Figures in Section 8). There

may, however, be unobserved ways in which our treatment and control groups differ. It is possible that these groups differ in their strategic decision-making capabilities, or perhaps in the strength of their board's existing social capital. Moreover, the contribution of the business leader to the nonprofit's performance could be complementary to these capabilities or social capital strength. Recognizing that our data do not originate from a randomized control trial or natural experiment, we are careful to label our empirically estimated comparisons as 'changes in performance' rather than 'impact on performance.'

At the same time, we have interviewed a number of nonprofit founders and business executives about their experiences recruiting for nonprofit boards and being recruited by them. Our interviews suggest that there is no one-size-fits-all approach to recruiting board members. A number of themes, however, emerge that speak to selection issues in our data. First, observers agree that boards differ widely in their capabilities and in the degree to which they follow systematic and effective processes for sourcing new board members. Second, they report that nominating committees or governance committees frequently work with a nonprofit's fundraising team to construct a short list of potential new board members from existing donors, members, and volunteers; these committees subsequently work from this list to isolate a handful of leaders to whom they will make offers to join the board. These offers are frequently declined, especially by top executives. For many nonprofits, two to three years of volunteer work for an important committee below the board level is highly preferred for the nominations committee to put an executive on the short list.[7] Even these organizations, however, can waive this prerequisite for leaders of very large organizations or for those who promise to be major donors. Third, our interviewees suggested that nominating or governance committees often look for board members with experience in law, accounting, or public relations to fill specific skills gaps in an organization. Executive skills are not uniformly

[7]One CEO that we interviewed remarked, "I hit the ceiling at [redacted], and they never selected me for the full board [although they knew I would have accepted]. The full board had people running bigger organizations than mine with national scope."

recognized as valuable by nonprofits.[8] One founder of two educational nonprofits said: "My main concern in finding board members is fundraising. I want them to make contributions to the organization and to give me a list of people that I can fundraise from. Beyond that, I need my board to reflect the lived experience in the community." This quote also reflects a final consideration that the majority of our interviewees mentioned: the desire for demographic diversity on a board. The CEO of an industrial manufacturing and engineering company said, "the most desirable board member is a female C-suite executive." While these interviews do not indicate that an omitted variable, like board quality, is completely absent from our setting, they suggest to us that there is substantial variation in practices and outcomes unrelated to our dependent variables that makes it unlikely that the correlations we uncover are purely spurious.

We also acknowledge that business leaders who join nonprofit boards are the ones that may be most comfortable dealing with the different institutional logics in the private versus nonprofit sector. Quélin et al. (2017), for example, highlight how objectives, structures, and routines differ between the public and private sectors, creating challenges for collaboration between sectors in general and for the creation of social value in particular. If the group of business leaders who choose to join nonprofit boards are different from those who do not in this regard, then we would expect different results from business leaders who might be compelled to join a nonprofit board.

[8]The CEO of a Midwestern manufacturing company who had served on two nonprofit boards said, "Even well-functioning governance committees have a blind spot. If the organization has legal problems, they look for lawyers. If they have an image problem, they look for marketing people. If they have fundraising problems, they look for people with skills in sales or experience at fundraising for other nonprofits. But these governance committees generally don't think about bringing more executive function and operational excellence skills onto the board. In part, that is because these are the executive director's responsibility. However, nonprofits executive directors can become more effective [coached or supported or monitored by a business leader with these skills]. Often, the executive director himself is on the governance committee, so these issues may be hard to discuss. And since the board itself is responsible for executive function and operational excellence, it can be tough to acknowledge a deficit in this area."

6.1.3 Narrow definition of business leader

We also note that our definition of a business leader is narrow. Executives in the nonprofit segment of the healthcare industry are not in our set of business leaders, nor are university presidents, top government officials, federal agency administrators, senior military leadership, or executives in other nonprofits. These leaders, whose administrative responsibilities, capabilities, and experience may be quite similar to those of business executives, are present in the control set of organizations for the purposes of our analysis. To the extent that these organizational leaders outside the for-profit sector are providing similar skills and resources to nonprofits on whose boards they serve, our methods will underestimate the importance of these factors.

6.2 Implications

Collectively, our empirical examination paints a positive, but complex, picture of the impact that senior business executives have on nonprofit organizations. Our analysis is consistent with the view of many observers that executive skills developed in the for-profit setting are valuable in the nonprofit sector and relatively scarce. The scarcity of these skills has been noted by industry associations such as BoardSource (BoardSource, 2021). Our analysis is also consistent with the view that financial resources and the network of connections possessed by these executives can lead to more effective fundraising. Because we do not observe donor identities or donor-level mission preferences in Form 990 data, we do not attempt to measure donor–mission alignment directly; instead, we study how revenues, financial policies, and mission narratives change following executive appointments.

For nonprofits seeking to build boards strategically, our work provides a benchmark of the types of improvements that could be expected when finding a willing business executive to serve on the board. We note that our estimates come from nonprofits that recruit these executives for the first time. Organizations that already have business executives on their boards may not expect the improvements that we estimate by adding more executives to the

board. At the same time, we address concerns that business executives may be associated with changes in mission orientation. Our analysis shows that mission-statement revisions become more likely post-appointment, while semantic changes and new-program introductions are modest in magnitude.

For business leaders who may themselves consider this service work, or comparing its impact to simply writing a check, we provide some guidance on how their involvement can impact these organizations and how much. For many executives, the possibility that board service is associated with economically meaningful increases in nonprofit revenues may be appealing.

For policymakers and those concerned with nonprofit governance in general, we provide what we believe is the first large-scale evidence that for-profit business leaders contribute positively to nonprofit organizations not simply through philanthropy but through board service as well. As budget cuts at the federal level create gaps in public services, the active participation of these business leaders in nonprofit organizations will become increasingly essential.

Our paper also has implications for the growing literature on public entrepreneurship, which focuses on the potential impact of applying entrepreneurial concepts and skills to management and innovation in the public sector (Klein et al., 2010, 2013; Hayter et al., 2018).[9] The limited empirical research on this topic that has been performed to date has focused mainly on the impact of these concepts and skills on government (Demircioglu and Chowdhury, 2021) and public-private partnerships (Kivleniece and Quelin, 2012). Like Fangwa et al. (2024), our work focuses on the nonprofit sector.[10] While their work shows that incorporating established managerial practices can impact nonprofit performance, ours suggests the possibility that an effective mechanism for improving these practices may come from

[9]One concrete outcome of this movement is the creation of courses like this one: Public Entrepreneurship (HBS)

[10]Nonprofit sector employment (13 million) is smaller than the government sector (22 million across federal, state, and local levels). However, in the past decade, nonprofit employment has increased by 33%, while total government employment has increased by 8%.

importing business leaders from the private sector to serve on the board of directors. At the same time, we recognize that our study does not pin down exactly when or precisely how nonprofits change as a result of these top business leaders' board service. Of particular interest is the degree to which board members add value to nonprofits via monitoring and oversight, by bringing new resources to the table, or both (Boivie et al., 2016). We believe that these questions will provide fruitful territory for future research.

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7 Tables

Table 1
Prevalence of Business Leaders on Nonprofit Boards of Directors, by Size and Sector (2021)

					At Least One Business Leader in Category				
	Number of Non-profits	Number of Business Leaders	Average Business Leaders / Nonprofit	At Least One Business Leader	CEO-Chairman	Other C-Level-EVP-SVP	VP-Other	Female	Entre
All Nonprofits	350,189	70,487	.201	8.2%	4.0%	3.2%	4.5%	3.6%	3.2%
By Size (Total Annual Revenue):									
More than $250M	535	3,117	5.826	50.7%	44.9%	40.0%	39.1%	40.9%	40.2%
$100 – 250M	1,031	4,066	3.944	53.2%	45.0%	36.7%	37.9%	36.6%	38.2%
$25 – 100M	5,702	10,202	1.789	41.3%	28.1%	23.3%	25.0%	23.1%	23.3%
$10 – 25M	9,326	9,307	.998	30.9%	18.3%	14.7%	17.6%	15.9%	14.4%
$2.5 - 10M	27,634	16,861	.610	24.0%	12.6%	10.3%	13.4%	11.4%	9.9%
$1 - 2.5M	31,468	10,116	.321	15.8%	6.9%	6.0%	8.8%	7.0%	5.4%
Less than $1M	274,493	16,818	.061	4.1%	1.6%	1.2%	2.1%	1.4%	1.2%
By Sector:									
Higher Education	2,059	4,723	2.294	40.4%	31.5%	26.3%	25.2%	23.3%	27.7%
Science	3,021	1,614	.534	18.0%	9.8%	7.6%	10.1%	8.3%	8.8%
Health (excl. Hospitals)	26,349	5,937	.225	10.8%	5.4%	4.0%	5.4%	4.5%	4.3%
All Others	318,760	58,213	.183	7.7%	3.7%	3.0%	4.3%	3.4%	2.9%

Note: Higher Education includes NTEE codes B40, B41, B42, B43, and B50. Science includes NTEE codes that begin with U or V. Health includes NTEE codes that begin with G, H, or E, excluding the hospital categories omitted from the analysis sample (E19, E2X, E30, E31, and E80) and excluding donor-advised funds (T2X, T3X, and T50). CEO–Chairman corresponds to ExecRank 1–2, Other C-level–EVP–SVP to ExecRank 3–4, and VP–Other to ExecRank 5–6. Shares are computed as percentages within each row. Unlike the regression sample, this prevalence table includes nonprofits that exceed $250M in total revenue in any observed year.

Table 2
Business Leader Arrival and Changes in Contribution Revenue and Fundraising

	Log (Contrib. Rev.)		Log (Gov. Grants)		Log (Fundr. Rev.)		Log (Fundr. ROI)		Log (Fundr. Exp.)	
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TreatPost	.116***	.109**	–.016	–.016	.107***	.089*	.047*	.065	.119***	.109**
	(.015)	(.031)	(.024)	(.047)	(.017)	(.030)	(.018)	(.037)	(.014)	(.029)
TreatPost*Additional		.015		.023		.014		.004		.087***
		(.015)		(.020)		(.018)		(.019)		(.020)
TreatPost*Wealth		.044		.063		.049		.075		.024
		(.046)		(.057)		(.053)		(.052)		(.050)
TreatPost*ExecRank		–.000		–.003		.003		–.007		–.003
		(.006)		(.010)		(.008)		(.007)		(.006)
Fixed Effects										
EIN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NTEE1 × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	.918	.918	.910	.910	.895	.895	.760	.760	.927	.927
Adjusted R^2	.896	.896	.885	.885	.867	.867	.695	.695	.907	.908
Treated Units	5,442	5,442	4,662	4,662	4,662	4,662	4,662	4,662	4,662	4,662
Control Units	5,062	5,062	4,224	4,224	4,224	4,224	4,224	4,224	4,224	4,224
Observations	54,420	54,420	46,196	46,196	46,196	46,196	46,196	46,196	46,196	46,196

Note: Estimates are from propensity score matched difference-in-differences regressions in the $t = -2$ to $t = 2$ window around the first appointment of a business leader. Matching is performed within cohort years using lagged covariates and exact matching on return type (Form 990 vs. Form 990EZ, including lagged return type); nearest-neighbor matching is with replacement on the logit of the propensity score with a 0.2 SD caliper and observations are weighted by matched-set weights. The cohort-year matching pools exclude organizations with pre-treatment mission-statement changes or semantic mission drift, and additionally exclude Form 990 filers that introduce a new program in the pre-treatment years. Dependent variables are log-plus-one transformations of the indicated measures (dollar amounts are in $1,000). Government Grants, Fundraising Revenue, Fundraising Expenses, and Fundraising ROI are available only on Form 990, so those specifications use the Form 990 subsample. TreatPost equals one for post-appointment years ($t = 0, 1, 2$) and zero otherwise. All specifications include EIN, state-by-tax-year, and NTEE1-by-tax-year fixed effects. Standard errors are two-way clustered by EIN and tax year. $^{+}\, p < .10$, $^{*}\, p < .05$, $^{**}\, p < .01$, $^{***}\, p < .001$.

Table 3
Business Leader Arrival and Changes in Program Service Revenue and Total Revenue

	Log (Program Service Revenue)				Log (Total Revenue)			
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TreatPost	.039*	.037*	.037*	.108**	.099***	.092***	.089***	.125***
	(.014)	(.015)	(.016)	(.030)	(.009)	(.009)	(.009)	(.019)
TreatPost*Additional		.009	.009	.007		.037**	.036**	.035**
		(.021)	(.020)	(.020)		(.009)	(.009)	(.009)
TreatPost*Wealth			.004	−.015			.035	.026
			(.057)	(.055)			(.023)	(.024)
TreatPost*ExecRank				−.018*				−.009*
				(.007)				(.004)
Fixed Effects								
EIN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NTEE1 × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	.960	.960	.960	.960	.947	.947	.947	.947
Adjusted R^2	.949	.949	.949	.949	.932	.932	.932	.932
Treated Units	5,442	5,442	5,442	5,442	5,442	5,442	5,442	5,442
Control Units	5,062	5,062	5,062	5,062	5,062	5,062	5,062	5,062
Observations	54,420	54,420	54,420	54,420	54,420	54,420	54,420	54,420

Note: Estimates are from propensity score matched difference-in-differences regressions in the $t = -2$ to $t = 2$ window around the first appointment of a business leader. Matching is performed within cohort years using lagged covariates and exact matching on return type (Form 990 vs. Form 990EZ, including lagged return type); matching uses one-to-one nearest neighbors with replacement on the logit of the propensity score with a 0.2 SD caliper and observations are weighted by matched-set weights. The cohort-year matching pools exclude organizations with pre-treatment mission-statement changes or semantic mission drift, and additionally exclude Form 990 filers that introduce a new program in the pre-treatment years. Dependent variables are log-plus-one transformations of the indicated measures (dollar amounts are in $1,000). TreatPost equals one for post-appointment years ($t = 0, 1, 2$) and zero otherwise. All specifications include EIN, state-by-tax-year, and NTEE1-by-tax-year fixed effects. Standard errors are two-way clustered by EIN and tax year. $^{+}\, p < .10$, $^{*}\, p < .05$, $^{**}\, p < .01$, $^{***}\, p < .001$.

Table 4
Business Leader Arrival and Changes in Service Output

	Log (Program Expenses)		Log (Employees)		Log (Volunteers)	
Variable	(1)	(2)	(3)	(4)	(5)	(6)
TreatPost	.044***	.070**	.043***	.056**	.112***	.108*
	(.008)	(.020)	(.009)	(.017)	(.019)	(.042)
TreatPost*Additional		.024**		.015+		.091***
		(.007)		(.007)		(.018)
TreatPost*Wealth		.054+		.008		–.025
		(.029)		(.024)		(.052)
TreatPost*ExecRank		–.010+		–.004		–.003
		(.004)		(.003)		(.009)
Fixed Effects						
EIN	Yes	Yes	Yes	Yes	Yes	Yes
State × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes
NTEE1 × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes
R^2	.949	.949	.969	.969	.866	.866
Adjusted R^2	.936	.936	.960	.960	.830	.830
Treated Units	4,662	4,662	4,662	4,662	4,662	4,662
Control Units	4,224	4,224	4,224	4,224	4,224	4,224
Observations	46,196	46,196	46,196	46,196	46,196	46,196

Note: Estimates are from propensity score matched difference-in-differences regressions in the $t = -2$ to $t = 2$ window around the first appointment of a business leader. Matching is performed within cohort years using lagged covariates and exact matching on return type (Form 990 vs. Form 990EZ, including lagged return type); matching uses one-to-one nearest neighbors with replacement on the logit of the propensity score with a 0.2 SD caliper and observations are weighted by matched-set weights. The cohort-year matching pools exclude organizations with pre-treatment mission-statement changes or semantic mission drift, and additionally exclude Form 990 filers that introduce a new program in the pre-treatment years. Program expenses, employees, and volunteers are available only on Form 990, so these specifications use the Form 990 subsample. TreatPost equals one for post-appointment years ($t = 0, 1, 2$) and zero otherwise. All specifications include EIN, state-by-tax-year, and NTEE1-by-tax-year fixed effects. Standard errors are two-way clustered by EIN and tax year. $^{+}\, p < .10$, $^{*}\, p < .05$, $^{**}\, p < .01$, $^{***}\, p < .001$.

Table 5
Business Leader Arrival and Changes in Financial Health

	Log (Total Assets)		Log (Cash)		Norm (Net Income)	
Variable	(1)	(2)	(3)	(4)	(5)	(6)
TreatPost	.052***	.073*	.086**	.131*	.063**	.073*
	(.011)	(.025)	(.025)	(.044)	(.016)	(.031)
TreatPost*Additional		.019		.032		.026+
		(.012)		(.027)		(.014)
TreatPost*Wealth		.072*		.042		.009
		(.029)		(.070)		(.046)
TreatPost*ExecRank		–.008		–.015		–.004
		(.005)		(.009)		(.007)
Fixed Effects						
EIN	Yes	Yes	Yes	Yes	Yes	Yes
State × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes
NTEE1 × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes
R^2	.954	.954	.855	.855	.427	.427
Adjusted R^2	.942	.942	.816	.816	.275	.275
Treated Units	5,442	5,442	4,662	4,662	5,442	5,442
Control Units	5,062	5,062	4,224	4,224	5,062	5,062
Observations	54,420	54,420	46,196	46,196	54,420	54,420

Note: Estimates are from propensity score matched difference-in-differences regressions in the $t = -2$ to $t = 2$ window around the first appointment of a business leader. Matching is performed within cohort years using lagged covariates and exact matching on return type (Form 990 vs. Form 990EZ, including lagged return type); matching uses one-to-one nearest neighbors with replacement on the logit of the propensity score with a 0.2 SD caliper and observations are weighted by matched-set weights. The cohort-year matching pools exclude organizations with pre-treatment mission-statement changes or semantic mission drift, and additionally exclude Form 990 filers that introduce a new program in the pre-treatment years. Net income is transformed using ordered quantile normalization (shown as Norm). Cash is available only on Form 990, so the cash specifications use the Form 990 subsample. TreatPost equals one for post-appointment years ($t = 0, 1, 2$) and zero otherwise. All specifications include EIN, state-by-tax-year, and NTEE1-by-tax-year fixed effects. Standard errors are two-way clustered by EIN and tax year. $^{+}\,p < .10$, $^{*}\,p < .05$, $^{**}\,p < .01$, $^{***}\,p < .001$.

Table 6
Business Leader Arrival and Changes in Top Employees' Pay and Program Expense Ratio

	Log (Average Pay of Top 5 Employees)				Logit (Program Expense Ratio)			
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TreatPost	.045**	.045**	.038**	.076*	−.021	−.020	−.024	.039
	(.011)	(.011)	(.011)	(.025)	(.016)	(.016)	(.016)	(.038)
TreatPost*Additional		.001	−.001	−.002		−.006	−.007	−.009
		(.020)	(.020)	(.020)		(.014)	(.014)	(.014)
TreatPost*Wealth			.062+	.052			.037	.020
			(.032)	(.032)			(.041)	(.043)
TreatPost*ExecRank				−.009				−.016+
				(.006)				(.008)
Fixed Effects								
EIN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NTEE1 × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	.913	.913	.913	.913	.804	.804	.804	.804
Adjusted R^2	.890	.890	.890	.890	.752	.752	.752	.752
Treated Units	5,442	5,442	5,442	5,442	4,662	4,662	4,662	4,662
Control Units	5,062	5,062	5,062	5,062	4,224	4,224	4,224	4,224
Observations	54,420	54,420	54,420	54,420	46,196	46,196	46,196	46,196

Note: Estimates are from propensity score matched difference-in-differences regressions in the $t = -2$ to $t = 2$ window around the first appointment of a business leader. Matching is performed within cohort years using lagged covariates and exact matching on return type (Form 990 vs. Form 990EZ, including lagged return type); matching uses one-to-one nearest neighbors with replacement on the logit of the propensity score with a 0.2 SD caliper and observations are weighted by matched-set weights. The cohort-year matching pools exclude organizations with pre-treatment mission-statement changes or semantic mission drift, and additionally exclude Form 990 filers that introduce a new program in the pre-treatment years. Average pay of the top five employees is log-plus-one transformed (dollars in $1,000). The program expense ratio is transformed using a logit and is available only on Form 990, so those specifications use the Form 990 subsample. TreatPost equals one for post-appointment years ($t = 0, 1, 2$) and zero otherwise. All specifications include EIN, state-by-tax-year, and NTEE1-by-tax-year fixed effects. Standard errors are two-way clustered by EIN and tax year. $^{+}\,p < .10$, $^{*}\,p < .05$, $^{**}\,p < .01$, $^{***}\,p < .001$.

Table 7
Business Leader Arrival and Changes in Mission Statement and New Program Activity

	Any Change in Mission Statement		Mission Semantic Change		New Program	
Variable	(1)	(2)	(3)	(4)	(5)	(6)
TreatPost	.165***	.164***	.034***	.040***	.014**	.014*
	(.016)	(.022)	(.003)	(.007)	(.004)	(.006)
TreatPost*Additional		.024**		.007*		.003
		(.007)		(.003)		(.002)
TreatPost*Wealth		.039+		.009		−.009
		(.021)		(.010)		(.007)
TreatPost*ExecRank		−.002		−.002		−.000
		(.003)		(.002)		(.001)
Fixed Effects						
EIN	Yes	Yes	Yes	Yes	Yes	Yes
State × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes
NTEE1 × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes
R^2	.633	.633	.522	.522	.581	.581
Adjusted R^2	.535	.536	.395	.395	.469	.469
Treated Units	5,442	5,442	5,442	5,442	4,662	4,662
Control Units	5,062	5,062	5,062	5,062	4,224	4,224
Observations	54,420	54,420	54,420	54,420	46,196	46,196

Note: Estimates are from propensity score matched difference-in-differences regressions in the $t = -2$ to $t = 2$ window around the first appointment of a business leader. Matching is performed within cohort years using lagged covariates and exact matching on return type (Form 990 vs. Form 990EZ, including lagged return type); matching uses one-to-one nearest neighbors with replacement on the logit of the propensity score with a 0.2 SD caliper and observations are weighted by matched-set weights. The cohort-year matching pools exclude organizations with pre-treatment mission-statement changes or semantic mission drift, and additionally exclude Form 990 filers that introduce a new program in the pre-treatment years. Mission-statement and program-change outcomes are coded to be zero in pre-treatment years and to remain one once a post-treatment change occurs (cumulative indicators). Mission semantic change is measured relative to the baseline mission at $t = -1$. TreatPost equals one for post-appointment years ($t = 0, 1, 2$) and zero otherwise. All specifications include EIN, state-by-tax-year, and NTEE1-by-tax-year fixed effects. Standard errors are two-way clustered by EIN and tax year. $^{+}\,p < .10$, $^{*}\,p < .05$, $^{**}\,p < .01$, $^{***}\,p < .001$.

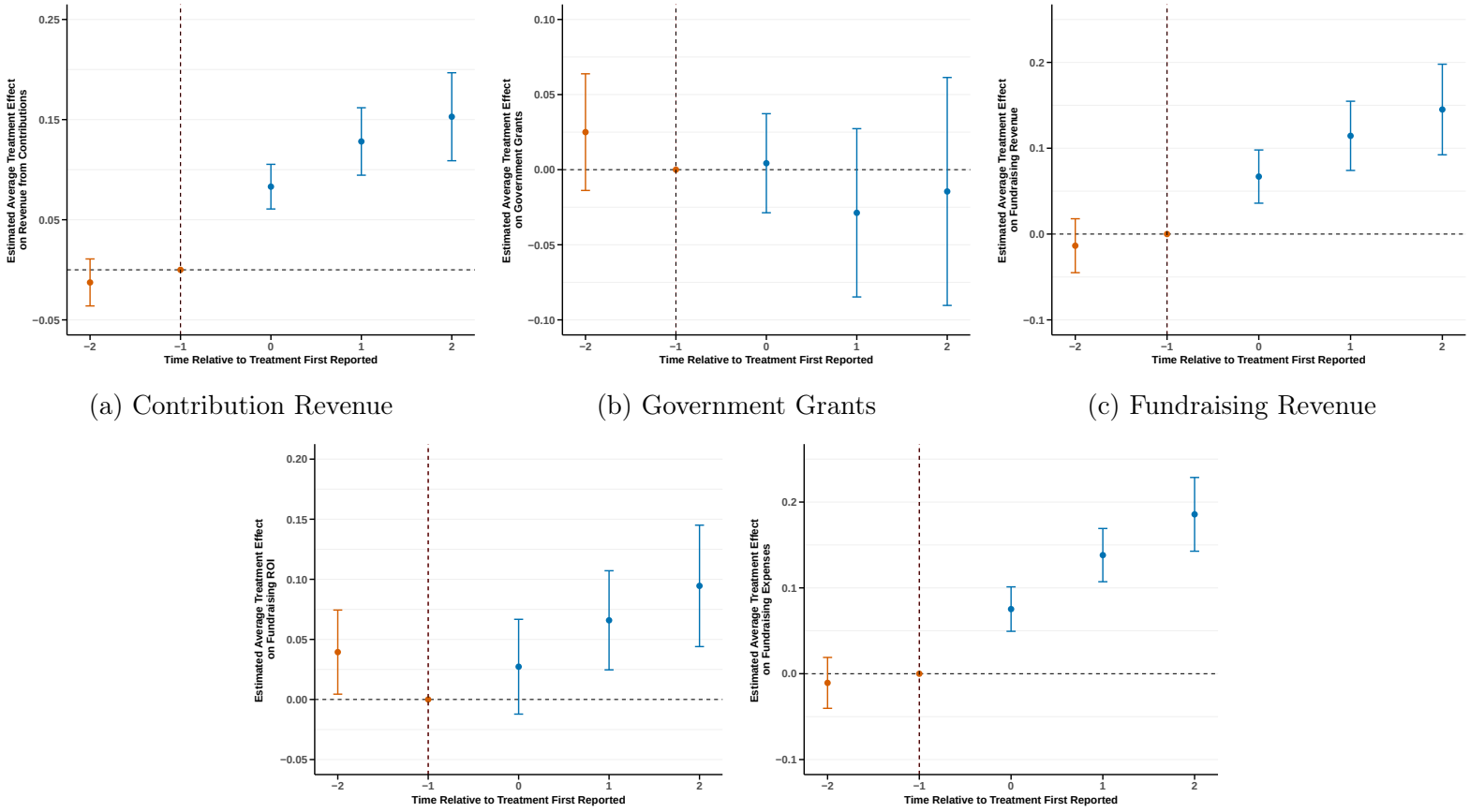
Table 8
Mission Change After Business Leader Appointment and Fundraising: Cross-Sectional and Panel Evidence

	EIN-level DV: Post–pre change in log contribution revenue		Treated-only panel DV: Year-over-year change in log contribution revenue	
Mission measure	(1)	(2)	(3)	(4)
Any post-appointment mission change	.133***			
	(.026)			
Maximum mission drift (z-score)		.092***		
		(.016)		
Mission changed this year			.040	
			(.037)	
Mission distance this year (z-score)				.047
				(.033)
Fixed Effects				
EIN	No	No	Yes	Yes
Time relative to appointment	No	No	Yes	Yes
Appointment year	No	No	Yes	Yes
Observations	5,442	5,442	16,326	16,326
R^2	.038	.044	.198	.199

Note: Sample is restricted to treated nonprofits in the propensity score matched estimation sample. Columns (1)–(2) report EIN-level cross-sectional regressions where the dependent variable is the post–pre change in average log contribution revenue, defined as the difference between the mean of log(contribution revenue) in $t \in [0, 1, 2]$ and the mean in $t \in [-2, -1]$. "Any post-appointment mission change" equals one if the nonprofit modifies its mission statement at least once in $t \in [0, 2]$. "Maximum mission drift (z-score)" is the standardized maximum mission semantic distance from the baseline mission (at $t = -1$) over $t \in [0, 2]$. Columns (3)–(4) report treated-only panel regressions estimated on nonprofit-year observations in post-appointment years; the dependent variable is the year-over-year change in log contribution revenue, $\Delta \log(\text{contribution revenue}) = \log(\text{contribution revenue}_t) - \log(\text{contribution revenue}_{t-1})$. "Mission changed this year" indicates a mission statement change in year t, and "Mission distance this year (z-score)" is the standardized annual mission semantic distance from baseline. Panel specifications include EIN fixed effects, event-time fixed effects (relative to appointment), and cohort fixed effects (appointment year), and are weighted by matched-set weights. Standard errors are clustered by EIN and tax year.

8 Figures

Figure 1
Event Studies of Business Leader Arrival on Contribution Revenue and Fundraising

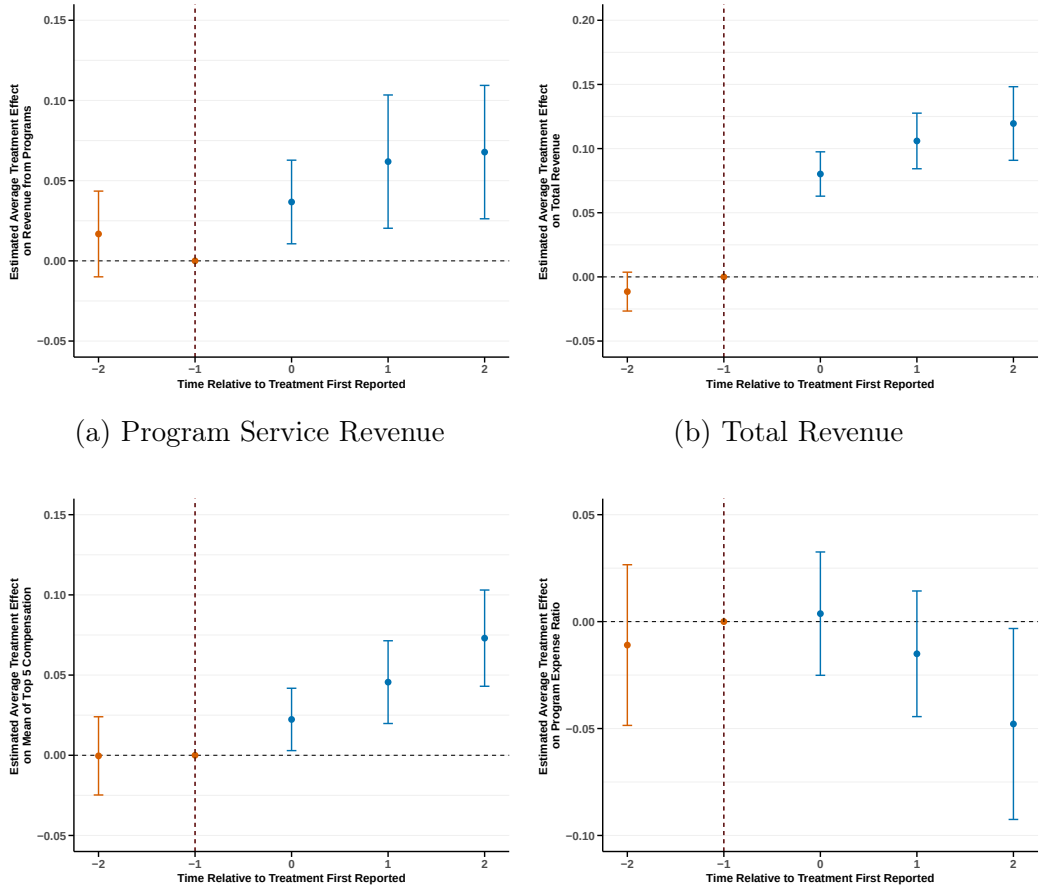


(a) Contribution Revenue (b) Government Grants (c) Fundraising Revenue

(d) Fundraising ROI (e) Fundraising Expenses

Note: Average treatment effect on the treated (ATT) for each dependent variable estimated using the propensity score matched sample described in Table A2 extended to a 5-year panel centered on the first treatment year. The reference period is $t = -1$, normalized to zero. Error bars denote 95% confidence intervals.

Figure 3
Event Studies of Business Leader Arrival on Program Service Revenue, Total Revenue, Top Employees' Pay, and Program Expense Ratio



(a) Program Service Revenue

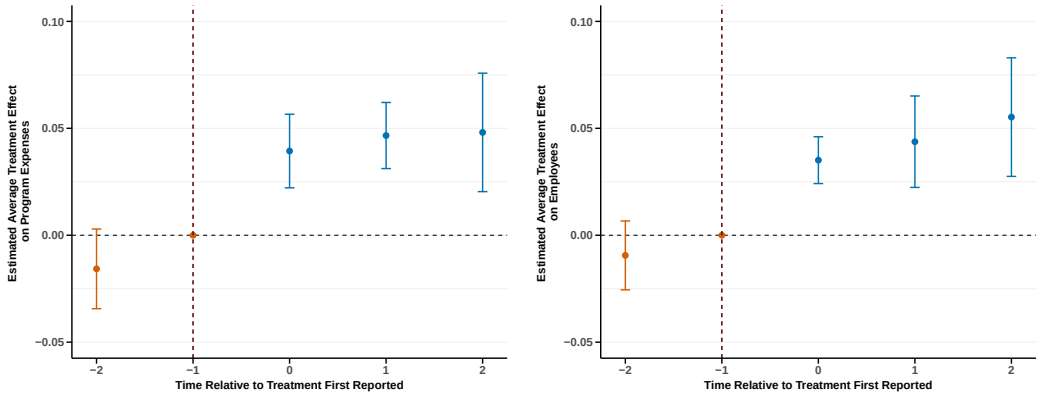
(b) Total Revenue

(c) Average Pay of Top 5 Employees

(d) Program Expense Ratio

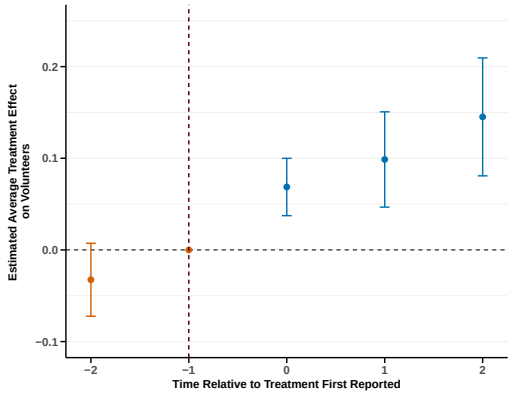
Note: Average treatment effect on the treated (ATT) for each dependent variable estimated using the propensity score matched sample described in Table A2 extended to a 5-year panel centered on the first treatment year. The reference period is $t = -1$, normalized to zero. Error bars denote 95% confidence intervals.

Figure 5
Event Studies of Business Leader Arrival on Service Output



(a) Program Expenses

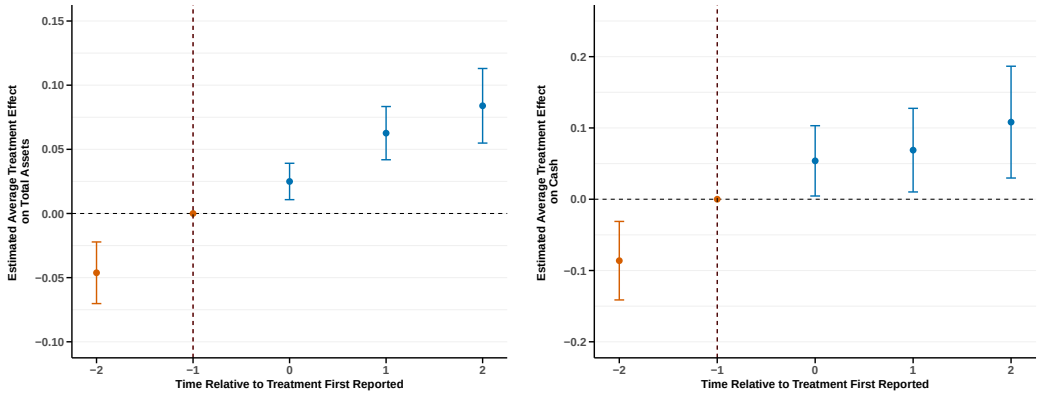
(b) Number of Employees



(c) Number of Volunteers

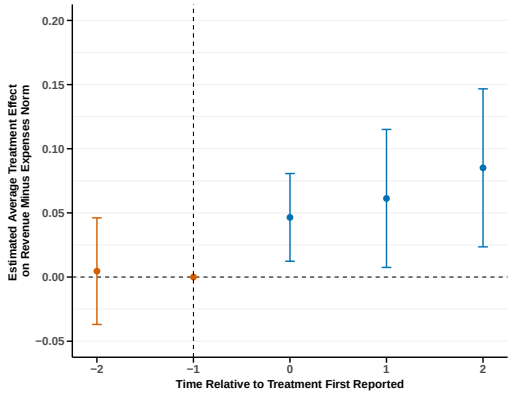
Note: Average treatment effect on the treated (ATT) for each dependent variable estimated using the propensity score matched sample described in Table A2 extended to a 5-year panel centered on the first treatment year. The reference period is $t = -1$, normalized to zero. Error bars denote 95% confidence intervals.

Figure 7
Event Studies of Business Leader Arrival on Financial Health Metrics



(a) Total Assets

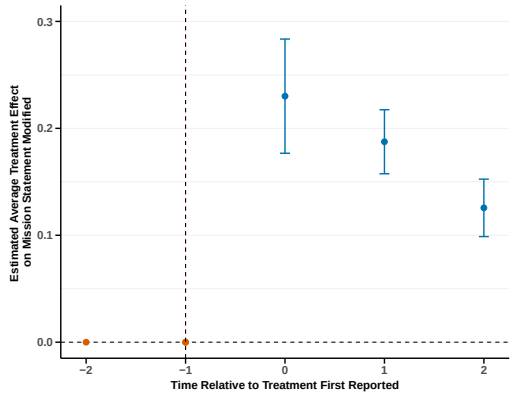
(b) Cash on Hand



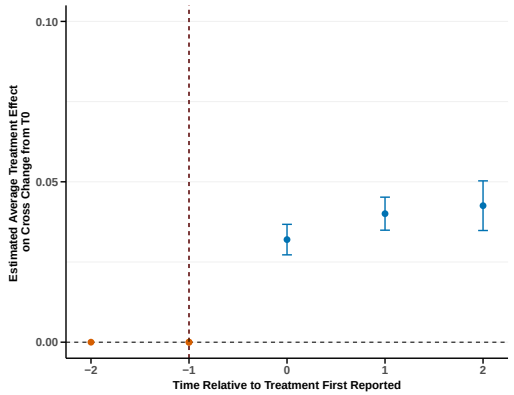
(c) Net Income

Note: Average treatment effect on the treated (ATT) for each dependent variable estimated using the propensity score matched sample described in Table A2 extended to a 5-year panel centered on the first treatment year. The reference period is $t = -1$, normalized to zero. Error bars denote 95% confidence intervals.

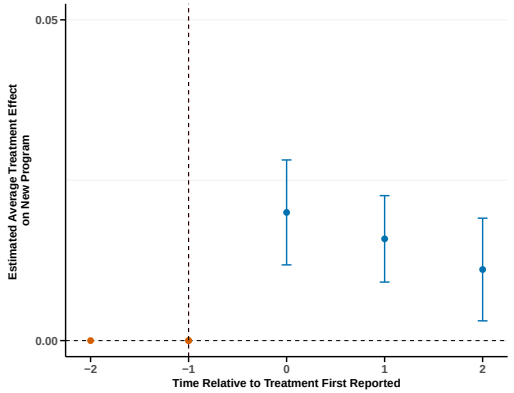
Figure 9
Event Studies of Business Leader Arrival on Mission Statement Changes and New Program Activity



(a) Any Change in Mission Statement



(b) Degree of Mission Semantic Change



(c) New Program

Note: Average treatment effect on the treated (ATT) for each dependent variable estimated using the propensity score matched sample described in the notes of Table 7 extended to a 5-year panel centered on the first treatment year. The reference period is $t = -1$, normalized to zero. By construction, all units in the mission-analysis sample have no material mission changes in the pre-treatment years. Error bars denote 95% confidence intervals.

9 Appendix

Table A1
Summary Statistics, All 990 Filings

Variable	*N*	Mean	SD	Median
Total Revenue	3,035,239	2,312,676.69	9,749,489.15	188,174
Contribution Revenue	3,035,239	968,012.93	5,150,683.22	72,822
Government Grants	1,956,646	609,875.55	3,974,873.27	0
Fundraising Revenue (Contribution Revenue Minus Government Grants)	1,956,646	870,106.70	4,560,452.81	107,033
Program Revenue	3,035,239	1,183,202.44	6,874,733.41	5,299
Investment Revenue	3,035,239	99,521.73	1,295,959.85	27
Other Revenue	3,035,239	67,954.96	800,087	0
Total Expenses	3,035,239	2,147,777	9,211,166.97	172,496
Program Expenses	1,956,646	2,800,032.94	9,862,458.57	377,842
Management and General Expenses	1,956,646	420,999.80	1,677,333.66	53,424
Fundraising Expenses	1,956,646	76,715.20	463,199.64	0
Total Assets	3,035,239	4,672,992.17	51,212,994.62	219,435
Cash	1,956,646	418,732.40	2,007,451.37	69,088
Average Pay of Top 5 Employees	3,035,239	16,692.18	2,235,899.18	0
Board Size	3,035,239	8.95	10.07	7
Employees	1,956,646	57.63	1,751.16	4
Volunteers	1,956,646	461.04	102,129.01	8
Organization Age (Years)	3,035,239	24.32	23.43	18
Fundraising ROI	1,956,646	31.78	283.35	0
Program Expense Ratio	1,956,646	0.81	0.21	0.86
Net Income (Revenue Minus Expenses)	3,035,239	155,384.18	1,344,534.60	4,545

Note: Summary statistics for nonprofit organization-year observations in the analysis sample prior to propensity score matching, after applying sample restrictions (e.g., NTEE exclusions and the $250M revenue cap).

Table A2
Summary Statistics, Estimation Sample — Treatment vs. Control (5-Year Window)

	Treated		Control		
Variable	Mean	N	Mean	N	SMD
Log (Total Revenue)	6.793	5,442	6.793	5,062	0
Log (Revenue from Contributions)	5.696	5,442	5.784	5,062	−.041
Log (Revenue from Programs)	3.862	5,442	3.806	5,062	.017
Log (Revenue from Investments)	1.861	5,442	1.793	5,062	.030
Log (Revenue from Other)	2.148	5,442	2.145	5,062	0
Log (Total Expenses)	6.710	5,442	6.704	5,062	0
Log (Program Expenses)	6.873	4,647	6.863	4,258	0
Log (Management Expenses)	4.884	4,647	4.888	4,258	0
Log (Fundraising Expenses)	2.742	4,647	2.793	4,258	−.022
Log (Fundraising Revenue)	5.553	4,647	5.622	4,258	−.034
Log (Government Grants)	2.202	4,647	2.218	4,258	0
Log (Total Assets)	6.948	5,442	6.864	5,062	.039
Log (Cash)	4.300	4,647	4.312	4,258	0
Log (Mean of Top 5 Compensation)	2.115	5,442	2.115	5,062	0
Log (Board)	2.476	5,442	2.511	5,062	−.057
Log (Employees)	2.560	4,647	2.636	4,258	−.039
Log (Volunteers)	3.204	4,647	3.277	4,258	−.030
Log (Organization Age)	3.095	5,442	3.107	5,062	−.014
Log (Fundraising ROI)	1.622	4,647	1.776	4,258	−.098
Logit (Program Expense Ratio)	1.678	4,647	1.656	4,258	.013
Revenue Minus Expenses Norm	.146	5,442	.170	5,062	−.020

Note: Summary statistics are computed at $t = -1$ (the year prior to appointment) for the propensity score matched sample in the $t = -2$ to $t = 2$ window. Treated and control means are weighted by matched-set weights. The cohort-year matching pools exclude organizations with pre-treatment mission-statement changes or semantic mission drift, and additionally exclude Form 990 filers that introduce a new program in the pre-treatment years. SMD = standardized mean difference.

Table A3
Summary Statistics, Estimation Sample — Treatment vs. Control (Extended Window: $t = -3$ to $t = 2$))

	Treated		Control		
Variable	Mean	N	Mean	N	SMD
Log (Total Revenue)	6.807	3,250	6.811	3,072	0
Log (Revenue from Contributions)	5.683	3,250	5.805	3,072	−.056
Log (Revenue from Programs)	3.887	3,250	3.764	3,072	.037
Log (Revenue from Investments)	1.902	3,250	1.898	3,072	0
Log (Revenue from Other)	2.160	3,250	2.200	3,072	−.018
Log (Total Expenses)	6.730	3,250	6.727	3,072	0
Log (Program Expenses)	6.903	2,776	6.878	2,604	.015
Log (Management Expenses)	4.894	2,776	4.870	2,604	.013
Log (Fundraising Expenses)	2.691	2,776	2.806	2,604	−.050
Log (Fundraising Revenue)	5.511	2,776	5.573	2,604	−.029
Log (Government Grants)	2.249	2,776	2.244	2,604	0
Log (Total Assets)	7.012	3,250	6.988	3,072	.011
Log (Cash)	4.323	2,776	4.335	2,604	0
Log (Mean of Top 5 Compensation)	2.104	3,250	2.100	3,072	0
Log (Board)	2.477	3,250	2.525	3,072	−.081
Log (Employees)	2.580	2,776	2.676	2,604	−.050
Log (Volunteers)	3.137	2,776	3.246	2,604	−.045
Log (Organization Age)	3.180	3,250	3.174	3,072	0
Log (Fundraising ROI)	1.604	2,776	1.781	2,604	−.113
Logit (Program Expense Ratio)	1.707	2,776	1.696	2,604	0
Revenue Minus Expenses Norm	.133	3,250	.118	3,072	.012

Note: Summary statistics are computed at $t = -1$ for the propensity score matched sample in the extended $t = -3$ to $t = 2$ window. Treated and control means are weighted by matched-set weights. The cohort-year matching pools exclude organizations with pre-treatment mission-statement changes or semantic mission drift, and additionally exclude Form 990 filers that introduce a new program in the pre-treatment years. SMD = standardized mean difference.

Table A4
Business Leader Arrival and Changes in Fundraising (6-Year Window)

	Log (Contrib. Rev.)		Log (Gov. Grants)		Log (Fundr. Rev.)		Log (Fundr. ROI)		Log (Fundr. Exp.)	
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TreatPost	.106***	.102*	.006	.053	.120***	.084+	.041+	.036	.151***	.176**
	(.016)	(.039)	(.026)	(.063)	(.021)	(.043)	(.019)	(.042)	(.024)	(.042)
TreatPost*Additional		.008		–.005		.003		–.022		.066*
		(.022)		(.026)		(.023)		(.026)		(.026)
TreatPost*Wealth		–..007		.043		.027		.120+		–..048
		(.052)		(.083)		(.064)		(.064)		(.066)
TreatPost*ExecRank		.001		–.013		.008		–.001		–.008
		(.008)		(.013)		(.011)		(.009)		(.008)
Fixed Effects										
EIN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NTEE1 × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	.915	.915	.906	.906	.892	.892	.743	.743	.922	.922
Adjusted R^2	.895	.895	.884	.884	.866	.866	.683	.683	.904	.904
Treated Units	3,250	3,250	2,784	2,784	2,784	2,784	2,784	2,784	2,784	2,784
Control Units	3,072	3,072	2,580	2,580	2,580	2,580	2,580	2,580	2,580	2,580
Observations	39,000	39,000	33,170	33,170	33,170	33,170	33,170	33,170	33,170	33,170

Note: Estimates are from propensity score matched difference-in-differences regressions in the extended $t = -3$ to $t = 2$ window around the first appointment of a business leader. Matching is performed within cohort years using lagged covariates and exact matching on return type (Form 990 vs. Form 990EZ, including lagged return type); nearest-neighbor matching is with replacement on the logit of the propensity score with a 0.2 SD caliper and observations are weighted by matched-set weights. The cohort-year matching pools exclude organizations with pre-treatment mission-statement changes or semantic mission drift, and additionally exclude Form 990 filers that introduce a new program in the pre-treatment years. Dependent variables are log-plus-one transformations of the indicated measures (dollar amounts are in $1,000). Government Grants, Fundraising Revenue, Fundraising Expenses, and Fundraising ROI are available only on Form 990, so those specifications use the Form 990 subsample. TreatPost equals one for post-appointment years ($t = 0, 1, 2$) and zero otherwise. All specifications include EIN, state-by-tax-year, and NTEE1-by-tax-year fixed effects. Standard errors are two-way clustered by EIN and tax year. $^{+}\,p < .10$, $^{*}\,p < .05$, $^{**}\,p < .01$, $^{***}\,p < .001$.

Table A5
Business Leader Arrival and Changes in Program Service Revenue and Total Revenue (6-Year Window)

	Log (Program Service Revenue)				Log (Total Revenue)			
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TreatPost	.024	.021	.023	.094*	.085***	.082***	.077***	.124**
	(.019)	(.020)	(.020)	(.041)	(.011)	(.011)	(.012)	(.028)
TreatPost*Additional		.018	.019	.017		.017+	.016+	.014
		(.020)	(.020)	(.019)		(.009)	(.009)	(.009)
TreatPost*Wealth			–.020	–.039			.046	.034
			(.065)	(.064)			(.030)	(.031)
TreatPost*ExecRank				–.017+				–.011+
				(.008)				(.006)
Fixed Effects								
EIN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NTEE1 × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	.959	.959	.959	.959	.947	.947	.947	.947
Adjusted R^2	.949	.949	.949	.949	.935	.935	.935	.935
Treated Units	3,250	3,250	3,250	3,250	3,250	3,250	3,250	3,250
Control Units	3,072	3,072	3,072	3,072	3,072	3,072	3,072	3,072
Observations	39,000	39,000	39,000	39,000	39,000	39,000	39,000	39,000

Note: Estimates are from propensity score matched difference-in-differences regressions in the extended $t = -3$ to $t = 2$ window around the first appointment of a business leader. Matching is performed within cohort years using lagged covariates and exact matching on return type (Form 990 vs. Form 990EZ, including lagged return type); nearest-neighbor matching is with replacement on the logit of the propensity score with a 0.2 SD caliper and observations are weighted by matched-set weights. The cohort-year matching pools exclude organizations with pre-treatment mission-statement changes or semantic mission drift, and additionally exclude Form 990 filers that introduce a new program in the pre-treatment years. Dependent variables are log-plus-one transformations of the indicated measures (dollar amounts are in $1,000). TreatPost equals one for post-appointment years ($t = 0, 1, 2$) and zero otherwise. All specifications include EIN, state-by-tax-year, and NTEE1-by-tax-year fixed effects. Standard errors are two-way clustered by EIN and tax year. $^{+}\, p < .10$, $^{*}\, p < .05$, $^{**}\, p < .01$, $^{***}\, p < .001$.

Table A6
Business Leader Arrival and Changes in Financial Health (6-Year Window)

	Log (Total Assets)		Log (Cash)		Norm (Net Income)	
Variable	(1)	(2)	(3)	(4)	(5)	(6)
TreatPost	.022	.053	.109**	.199*	.058+	.043
	(.012)	(.029)	(.033)	(.067)	(.028)	(.044)
TreatPost*Additional		.006		−.040		−.036
		(.012)		(.026)		(.026)
TreatPost*Wealth		.054		.063		.056
		(.040)		(.087)		(.057)
TreatPost*ExecRank		−.010		−.023		.004
		(.007)		(.014)		(.010)
Fixed Effects						
EIN	Yes	Yes	Yes	Yes	Yes	Yes
State × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes
NTEE1 × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes
R^2	.961	.961	.844	.845	.397	.397
Adjusted R^2	.952	.952	.808	.808	.259	.259
Treated Units	3,250	3,250	2,784	2,784	3,250	3,250
Control Units	3,072	3,072	2,580	2,580	3,072	3,072
Observations	39,000	39,000	33,170	33,170	39,000	39,000

Note: Estimates are from propensity score matched difference-in-differences regressions in the extended $t = -3$ to $t = 2$ window around the first appointment of a business leader. Matching is performed within cohort years using lagged covariates and exact matching on return type (Form 990 vs. Form 990EZ, including lagged return type); nearest-neighbor matching is with replacement on the logit of the propensity score with a 0.2 SD caliper and observations are weighted by matched-set weights. The cohort-year matching pools exclude organizations with pre-treatment mission-statement changes or semantic mission drift, and additionally exclude Form 990 filers that introduce a new program in the pre-treatment years. Net income is transformed using ordered quantile normalization (shown as Norm). Cash is available only on Form 990, so the cash specifications use the Form 990 subsample. TreatPost equals one for post-appointment years ($t = 0, 1, 2$) and zero otherwise. All specifications include EIN, state-by-tax-year, and NTEE1-by-tax-year fixed effects. Standard errors are two-way clustered by EIN and tax year. $^{+}\,p < .10$, $^{*}\,p < .05$, $^{**}\,p < .01$, $^{***}\,p < .001$.

Table A7
Business Leader Arrival and Changes in Service Output (6-Year Window)

	Log (Program Expenses)		Log (Employees)		Log (Volunteers)	
Variable	(1)	(2)	(3)	(4)	(5)	(6)
TreatPost	.025	.090*	.030*	.045	.126***	.134*
	(.015)	(.036)	(.013)	(.026)	(.028)	(.053)
TreatPost*Additional		.016		.014		.126***
		(.009)		(.012)		(.027)
TreatPost*Wealth		.010		–..026		.037
		(.034)		(.031)		(.067)
TreatPost*ExecRank		–.017*		–.004		–.009
		(.007)		(.005)		(.010)
Fixed Effects						
EIN	Yes	Yes	Yes	Yes	Yes	Yes
State × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes
NTEE1 × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes
R^2	.941	.941	.966	.966	.862	.862
Adjusted R^2	.927	.927	.958	.958	.830	.830
Treated Units	2,784	2,784	2,784	2,784	2,784	2,784
Control Units	2,580	2,580	2,580	2,580	2,580	2,580
Observations	33,170	33,170	33,170	33,170	33,170	33,170

Note: Estimates are from propensity score matched difference-in-differences regressions in the extended $t = -3$ to $t = 2$ window around the first appointment of a business leader. Matching is performed within cohort years using lagged covariates and exact matching on return type (Form 990 vs. Form 990EZ, including lagged return type); nearest-neighbor matching is with replacement on the logit of the propensity score with a 0.2 SD caliper and observations are weighted by matched-set weights. The cohort-year matching pools exclude organizations with pre-treatment mission-statement changes or semantic mission drift, and additionally exclude Form 990 filers that introduce a new program in the pre-treatment years. Program expenses, employees, and volunteers are available only on Form 990, so these specifications use the Form 990 subsample. TreatPost equals one for post-appointment years ($t = 0, 1, 2$) and zero otherwise. All specifications include EIN, state-by-tax-year, and NTEE1-by-tax-year fixed effects. Standard errors are two-way clustered by EIN and tax year. $^{+}\, p < .10$, $^{*}\, p < .05$, $^{**}\, p < .01$, $^{***}\, p < .001$.

Table A8
Business Leader Arrival and Changes in Top Employees' Pay and Program Expense Ratio (6-Year Window)

	Log (Average Pay of Top 5 Employees)				Logit (Program Expense Ratio)			
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TreatPost	.040*	.035*	.033*	.069+	−.049+	−.049+	−.051+	.009
	(.013)	(.013)	(.013)	(.036)	(.026)	(.027)	(.027)	(.068)
TreatPost*Additional		.029	.028	.027		.001	.001	−.001
		(.024)	(.023)	(.023)		(.021)	(.021)	(.021)
TreatPost*Wealth			.019	.009			.015	−.000
			(.047)	(.047)			(.049)	(.050)
TreatPost*ExecRank				−.009				−.015
				(.008)				(.014)
Fixed Effects								
EIN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NTEE1 × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	.905	.905	.905	.905	.786	.786	.786	.786
Adjusted R^2	.883	.883	.883	.883	.736	.736	.736	.736
Treated Units	3,250	3,250	3,250	3,250	2,784	2,784	2,784	2,784
Control Units	3,072	3,072	3,072	3,072	2,580	2,580	2,580	2,580
Observations	39,000	39,000	39,000	39,000	33,170	33,170	33,170	33,170

Note: Estimates are from propensity score matched difference-in-differences regressions in the extended $t = -3$ to $t = 2$ window around the first appointment of a business leader. Matching is performed within cohort years using lagged covariates and exact matching on return type (Form 990 vs. Form 990EZ, including lagged return type); nearest-neighbor matching is with replacement on the logit of the propensity score with a 0.2 SD caliper and observations are weighted by matched-set weights. The cohort-year matching pools exclude organizations with pre-treatment mission-statement changes or semantic mission drift, and additionally exclude Form 990 filers that introduce a new program in the pre-treatment years. Average pay of the top five employees is log-plus-one transformed (dollars in $1,000). The program expense ratio is transformed using a logit and is available only on Form 990, so those specifications use the Form 990 subsample. TreatPost equals one for post-appointment years ($t = 0, 1, 2$) and zero otherwise. All specifications include EIN, state-by-tax-year, and NTEE1-by-tax-year fixed effects. Standard errors are two-way clustered by EIN and tax year. $^{+}\, p < .10$, $^{*}\, p < .05$, $^{**}\, p < .01$, $^{***}\, p < .001$.

Table A9
Business Leader Arrival and Changes in Mission Statement and New Program Activity (6-Year Window)

	Any Change in Mission Statement		Mission Semantic Change		New Program	
Variable	(1)	(2)	(3)	(4)	(5)	(6)
TreatPost	.133***	.149***	.035***	.040***	.010*	.010
	(.015)	(.025)	(.004)	(.008)	(.004)	(.007)
TreatPost*Additional		.032**		.009*		.003
		(.010)		(.004)		(.004)
TreatPost*Wealth		.056+		.012		–.012
		(.026)		(.012)		(.008)
TreatPost*ExecRank		–.007		–.002		.000
		(.004)		(.002)		(.002)
Fixed Effects						
EIN	Yes	Yes	Yes	Yes	Yes	Yes
State × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes
NTEE1 × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes
R^2	.576	.577	.462	.462	.492	.492
Adjusted R^2	.479	.480	.339	.340	.374	.374
Treated Units	3,250	3,250	3,250	3,250	2,784	2,784
Control Units	3,072	3,072	3,072	3,072	2,580	2,580
Observations	39,000	39,000	39,000	39,000	33,170	33,170

Note: Estimates are from propensity score matched difference-in-differences regressions in the extended $t = -3$ to $t = 2$ window around the first appointment of a business leader. Matching is performed within cohort years using lagged covariates and exact matching on return type (Form 990 vs. Form 990EZ, including lagged return type); nearest-neighbor matching is with replacement on the logit of the propensity score with a 0.2 SD caliper and observations are weighted by matched-set weights. The cohort-year matching pools exclude organizations with pre-treatment mission-statement changes or semantic mission drift, and additionally exclude Form 990 filers that introduce a new program in the pre-treatment years. Mission-statement and new-program outcomes are coded to be zero in pre-treatment years and to remain one once a post-treatment change occurs (cumulative indicators). Mission semantic change is measured relative to the baseline mission at $t = -1$. TreatPost equals one for post-appointment years ($t = 0, 1, 2$) and zero otherwise. All specifications include EIN, state-by-tax-year, and NTEE1-by-tax-year fixed effects. Standard errors are two-way clustered by EIN and tax year. $^{+}\,p < .10$, $^{*}\,p < .05$, $^{**}\,p < .01$, $^{***}\,p < .001$.

Table A10
Business Leader Arrival and Changes in Outcomes by Gender

Variable	Log (Contr. Rev.) (1)	Log (Fundr. Rev.) (2)	Log (Fundr. ROI) (3)	Log (Fundr. Exp.) (4)	Log (Prog. Rev.) (5)	Log (Total Rev.) (6)	Log (Prog. Exp.) (7)	Log (Empl.) (8)	Log (Volun.) (9)	Norm (Net Inc.) (10)	Log (Cash) (11)	Log (Top 5 Pay) (12)	Logit (Prog. Exp. Ratio) (13)
TreatPost	.106**	.087*	.068	.111**	.105**	.120***	.067**	.051*	.103*	.071*	.128*	.070*	.033
	(.031)	(.032)	(.039)	(.029)	(.030)	(.020)	(.020)	(.017)	(.042)	(.031)	(.045)	(.026)	(.037)
TreatPost*Additional	.015	.014	.004	.087***	.007	.035**	.024**	.015+	.091***	.027+	.032	–..002	–..009
	(.015)	(.018)	(.019)	(.020)	(.020)	(.009)	(.007)	(.007)	(.018)	(.014)	(.027)	(.020)	(.014)
TreatPost*Wealth	.046	.050	.073	.023	–.013	.028	.056+	.011	–.023	.010	.044	.055	.022
	(.046)	(.054)	(.051)	(.049)	(.055)	(.025)	(.029)	(.025)	(.052)	(.044)	(.070)	(.032)	(.043)
TreatPost*ExecRank	–.001	.002	–.007	–.002	–.018*	–.010*	–.010*	–.005	–.004	–.004	–.015	–.011+	–.017+
	(.006)	(.007)	(.007)	(.006)	(.007)	(.004)	(.004)	(.003)	(.009)	(.008)	(.009)	(.006)	(.009)
TreatPost*Female	.020	.006	–.016	–.009	.017	.025	.019	.026+	.029	.008	.018	.031	.030
	(.025)	(.026)	(.033)	(.026)	(.028)	(.017)	(.017)	(.014)	(.038)	(.043)	(.036)	(.025)	(.029)
Fixed Effects													
EIN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NTEE1 × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	.918	.895	.760	.927	.960	.947	.949	.969	.866	.427	.855	.913	.804
Adjusted R^2	.896	.867	.695	.908	.949	.932	.936	.960	.830	.275	.816	.890	.752
Treated Units	5,442	4,662	4,662	4,662	5,442	5,442	4,662	4,662	4,662	5,442	4,662	5,442	4,662
Control Units	5,062	4,224	4,224	4,224	5,062	5,062	4,224	4,224	4,224	5,062	4,224	5,062	4,224
Observations	54,420	46,196	46,196	46,196	54,420	54,420	46,196	46,196	46,196	54,420	46,196	54,420	46,196

Note: See the note to Table 2 for the matched difference-in-differences design, sample construction, fixed effects, weighting, and inference. This table augments the baseline specification by including the interaction *TreatPost* × *Female*, where *Female* indicates that the focal business leader appointed at $t = 0$ is female (per BoardEx). Outcomes available only on Form 990 (fundraising revenue, fundraising return on investment (ROI), fundraising expenses, program expenses, employees, volunteers, cash, and the program expense ratio) are estimated on the Form 990 subsample. $^{+}p < .10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Table A11
Business Leader Arrival and Changes in Outcomes by Entrepreneurship Experience

Variable	Log (Contr. Rev.) (1)	Log (Fundr. Rev.) (2)	Log (Fundr. ROI) (3)	Log (Fundr. Exp.) (4)	Log (Prog. Rev.) (5)	Log (Total Rev.) (6)	Log (Prog. Exp.) (7)	Log (Empl.) (8)	Log (Volun.) (9)	Norm (Net Inc.) (10)	Log (Cash) (11)	Log (Top 5 Pay) (12)	Logit (Prog. Exp. Ratio) (13)
TreatPost	.128**	.103*	.058	.096*	.086*	.133***	.055*	.045+	.112+	.073+	.153*	.082*	.032
	(.041)	(.037)	(.048)	(.037)	(.037)	(.025)	(.024)	(.021)	(.052)	(.034)	(.052)	(.031)	(.046)
TreatPost*Additional	.015	.014	.005	.087***	.007	.035**	.024**	.015+	.091***	.026+	.032	–..002	–..009
	(.015)	(.018)	(.019)	(.020)	(.020)	(.009)	(.007)	(.007)	(.018)	(.014)	(.027)	(.020)	(.014)
TreatPost*Wealth	.045	.050	.074	.023	–..016	.026	.053+	.008	–..025	.009	.044	.052	.019
	(.046)	(.053)	(.052)	(.049)	(.055)	(.024)	(.029)	(.024)	(.052)	(.046)	(.069)	(.032)	(.042)
TreatPost*ExecRank	–.003	.000	–.006	–.001	–.014+	–.010+	–.007	–.003	–.004	–.004	–.018	–.010	–.014
	(.008)	(.009)	(.009)	(.007)	(.008)	(.005)	(.005)	(.004)	(.010)	(.008)	(.010)	(.006)	(.009)
TreatPost*Entre	–.031	–.023	.012	.021	.036	–.015	.025	.018	–.006	.000	–.036	–.011	.012
	(.032)	(.037)	(.035)	(.033)	(.042)	(.024)	(.022)	(.018)	(.043)	(.033)	(.053)	(.026)	(.038)
Fixed Effects													
EIN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NTEE1 × Tax Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	.918	.895	.760	.927	.960	.947	.949	.969	.866	.427	.855	.913	.804
Adjusted R^2	.896	.867	.695	.908	.949	.932	.936	.960	.830	.275	.816	.890	.752
Treated Units	5,442	4,662	4,662	4,662	5,442	5,442	4,662	4,662	4,662	5,442	4,662	5,442	4,662
Control Units	5,062	4,224	4,224	4,224	5,062	5,062	4,224	4,224	4,224	5,062	4,224	5,062	4,224
Observations	54,420	46,196	46,196	46,196	54,420	54,420	46,196	46,196	46,196	54,420	46,196	54,420	46,196

Note: See the note to Table 2 for the matched difference-in-differences design, sample construction, fixed effects, weighting, and inference. This table augments the baseline specification by including the interaction *TreatPost* × *Entre*, where *Entre* indicates that the focal business leader appointed at $t = 0$ is an entrepreneur (per the BoardEx-based definition described in Section 3.3.2). Outcomes available only on Form 990 (fundraising revenue, fundraising return on investment (ROI), fundraising expenses, program expenses, employees, volunteers, cash, and the program expense ratio) are estimated on the Form 990 subsample. $^{+}p < .10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Table A12
Summary Statistics, Individual-Level Variables in Treatment Group

	5-Year Window			6-Year Window		
Variable	N_{treated}	Mean	SD	N_{treated}	Mean	SD
Wealth	5,442	.111	.314	3,250	.103	.304
ExecRank1	5,442	.166	.372	3,250	.158	.365
ExecRank2	5,442	.110	.313	3,250	.104	.305
ExecRank3	5,442	.131	.337	3,250	.138	.345
ExecRank4	5,442	.087	.281	3,250	.082	.275
ExecRank5	5,442	.203	.402	3,250	.207	.405
ExecRank6	5,442	.304	.460	3,250	.311	.463
Female	5,442	.315	.464	3,250	.324	.468
Entre	5,442	.230	.421	3,250	.221	.415

Note: Summary statistics for focal business-leader characteristics among treated nonprofits at $t = 0$ (the appointment year) in the matched estimation sample. Columns report treated-group statistics for the $t = -2$ to $t = 2$ and $t = -3$ to $t = 2$ windows.

Table A13
Coding Rules for Executive Rank

Rank	Organization Type (orgtype)	Title (rolename)
1	Quoted, Partnership, Private	CEO; Chairman and CEO; Chairman; Chairman (Executive)
	Quoted, Private	Founder; Co-Founder
	Quoted	Independent Chairman
	Partnership	Principal/Chairman; Deputy CFO; Chairman/General Partner
	Private	Chair; Co-Owner; Chairwoman; Chair (Executive); Chairperson
2	Quoted, Partnership, Private	CFO; COO; Acting CEO; Interim CEO; Vice Chairman; Co-Chairman
	Quoted	Deputy Chairman
	Partnership	Managing Director; Managing Partner; General Partner; Managing General Partner; Chairman Emeritus; Group MD; Deputy CEO; Chair Emeritus; Chairman Elect; Co-Founding Partner; Group Senior MD; Vice Chair; Vice Chairwoman
	Private	Vice Chairwoman; Vice Chairman (Executive); Co-Chair
3	Quoted, Partnership, Private	All other C-suite execs (excl. CEO, CFO, COO); Executive VP; President; Regional / Divisional / Group CEO
	Partnership	Managing General Partner; Acting CFO; Deputy CFO; Deputy COO; Senior MD/Vice Chairman; Division Chairman
	Private	Executive CFO
4	Quoted, Partnership, Private	Senior Vice President; Regional / Divisional / Group {CXO, President, Senior VP, EVP}
	Quoted, Private	Managing Director; Managing Partner
	Quoted	Division Executive VP; Division Senior VP; Senior MD; Division CFO/COO/CTO/CIO; Group Senior MD
	Partnership	MD – {department}; MD/Head of {department}
	Private	Senior MD; Division COO; Division CTO; Senior MD – {department}
5	Quoted, Partnership, Private	Vice President; Regional / Group / Global / Divisional VP
	Partnership, Private	Partner; Senior Partner; Global Partner
	Quoted, Private	Division MD; Regional MD

Continued on next page

Table A13 – continued

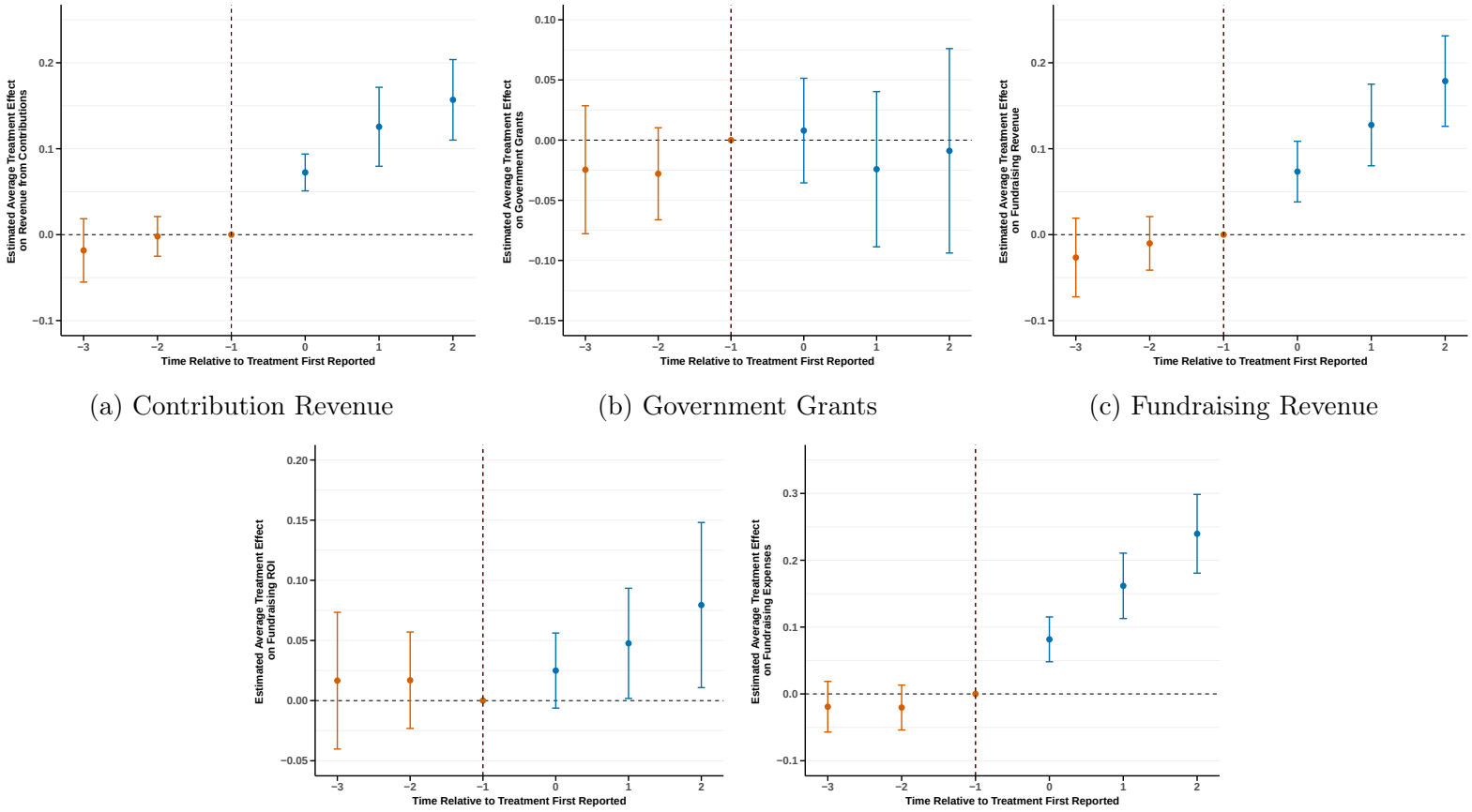
Rank	Organization Type (orgtype)	Title (rolename)
	Quoted Private	Corporate VP; Division VP – Operations / Finance / Business Development Division Executive VP; Division VP / General Manager
6	Quoted, Partnership, Private	Title not listed above
99	Armed Forces, Charities, Clubs, Government, Sporting, Universities, Unknown	All titles

Additional Rules: Titles with multiple role names that are not explicitly listed above are coded at the role with the highest rank (smallest number). If a title begins with "Co" and is not explicitly listed above, reduce the rank by 1. If a title begins with "Interim" or "Acting" and is not explicitly listed above, reduce the rank by 1.

Notes: In any given year, a board member is classified by the highest executive rank (smallest number) attained to date. MD = Managing Director.

10 Figures (6-Year Window)

Figure A1 Event Studies of Business Leader Arrival on Contribution Revenue and Fundraising

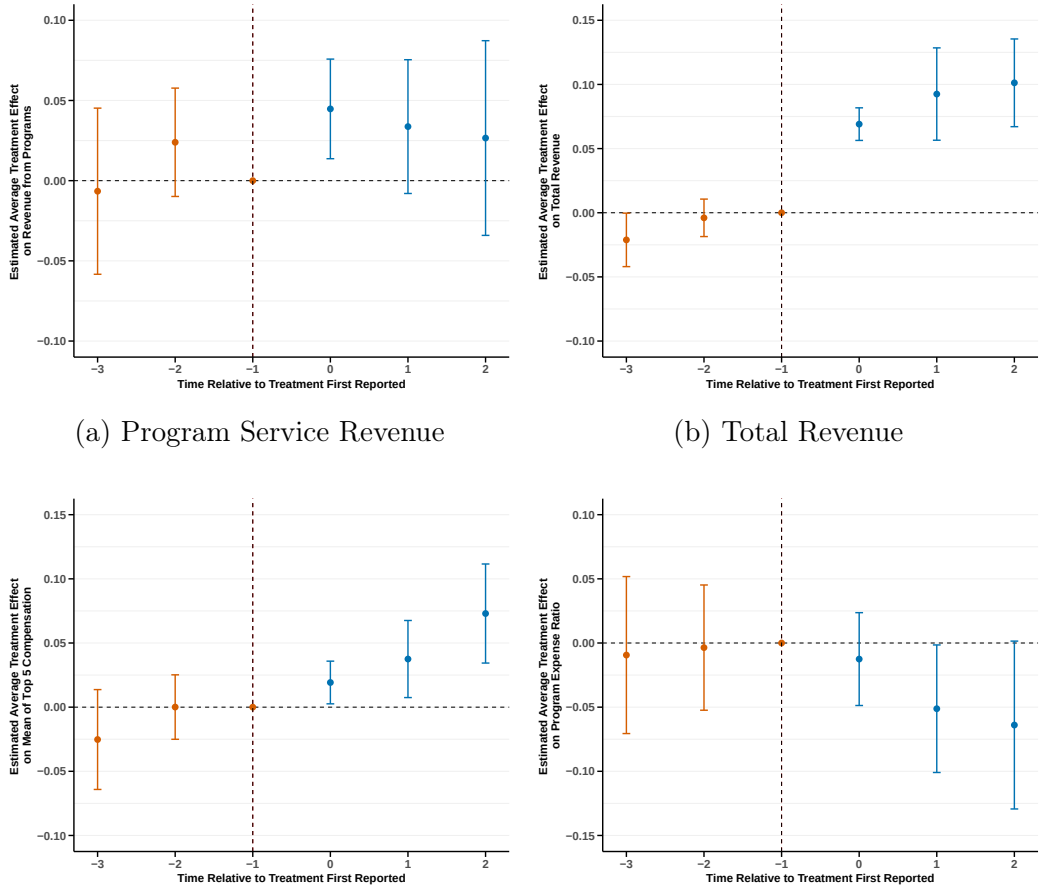


(a) Contribution Revenue (b) Government Grants (c) Fundraising Revenue

(d) Fundraising ROI (e) Fundraising Expenses

Note: Average treatment effect on the treated (ATT) for each dependent variable estimated using the propensity score matched sample described in Table A3 extended to a 6-year panel centered on the first treatment year. The reference period is $t = -1$, normalized to zero. Error bars denote 95% confidence intervals.

Figure A3
Event Studies of Business Leader Arrival on Program Service Revenue, Total Revenue, Top Employees' Pay, and Program Expense Ratio



(a) Program Service Revenue

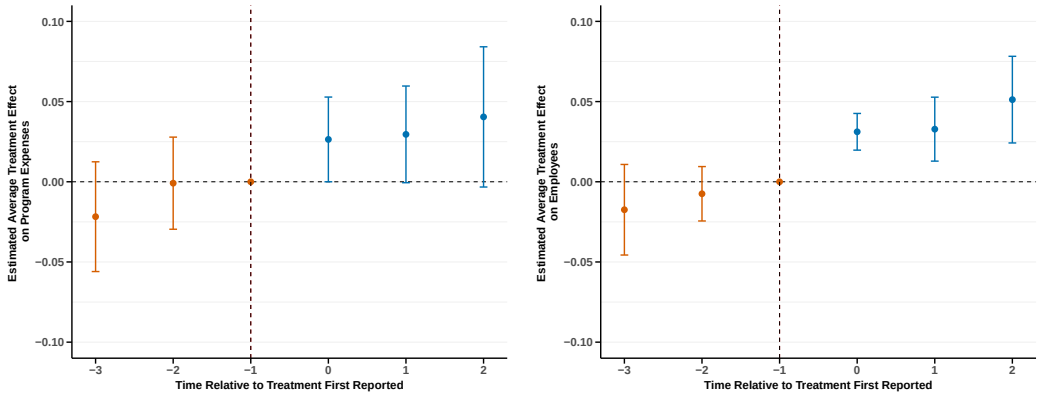
(b) Total Revenue

(c) Average Pay of Top 5 Employees

(d) Program Expense Ratio

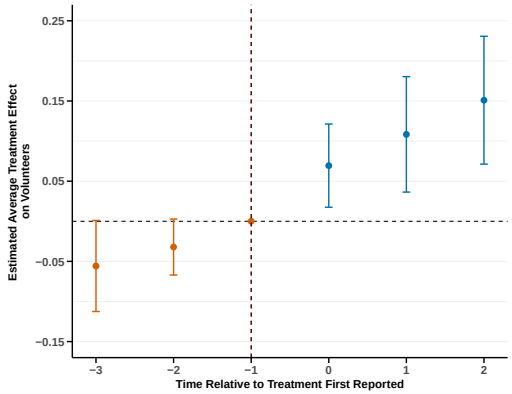
Note: Average treatment effect on the treated (ATT) for each dependent variable estimated using the propensity score matched sample described in Table A3 extended to a 6-year panel centered on the first treatment year. The reference period is $t = -1$, normalized to zero. Error bars denote 95% confidence intervals.

Figure A5
Event Studies of Business Leader Arrival on Service Output



(a) Program Expenses

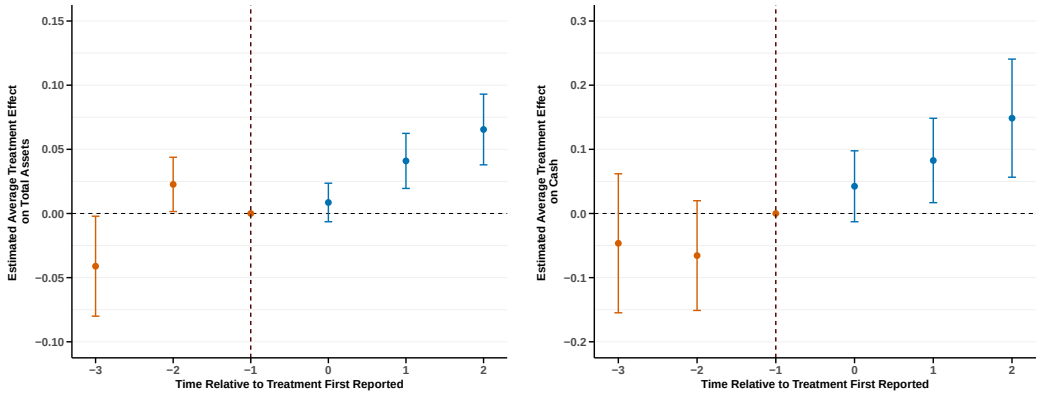
(b) Number of Employees



(c) Number of Volunteers

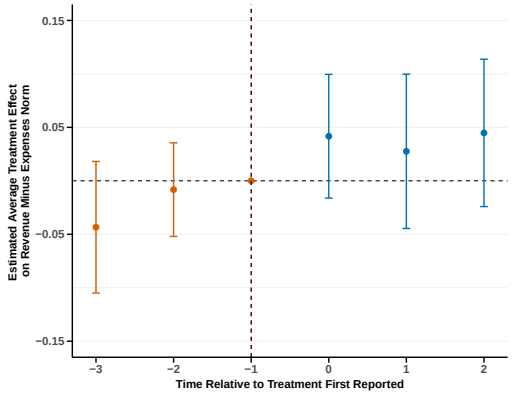
Note: Average treatment effect on the treated (ATT) for each dependent variable estimated using the propensity score matched sample described in Table A3 extended to a 6-year panel centered on the first treatment year. The reference period is $t = -1$, normalized to zero. Error bars denote 95% confidence intervals.

Figure A7
Event Studies of Business Leader Arrival on Financial Health Metrics



(a) Total Assets

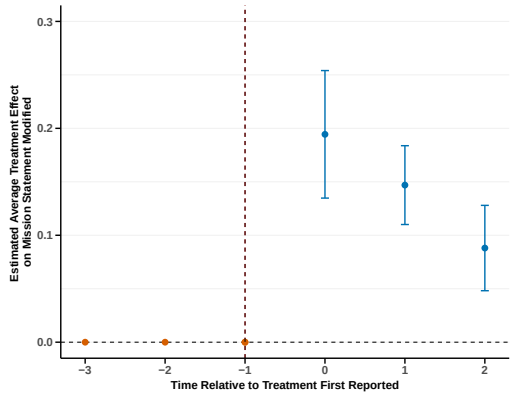
(b) Cash on Hand



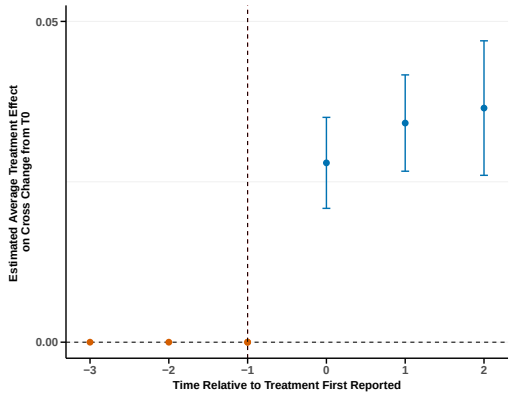
(c) Net Income

Note: Average treatment effect on the treated (ATT) for each dependent variable estimated using the propensity score matched sample described in Table A3 extended to a 6-year panel centered on the first treatment year. The reference period is $t = -1$, normalized to zero. Error bars denote 95% confidence intervals.

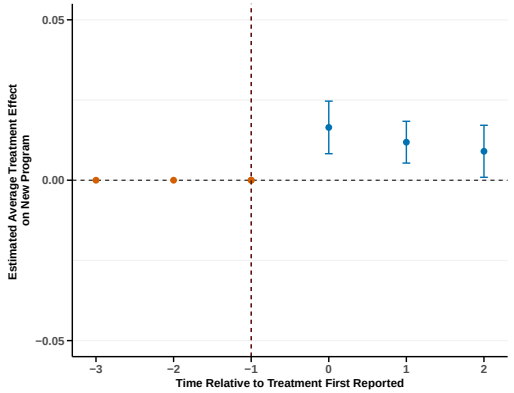
Figure A9
Event Studies of Business Leader Arrival on Mission Statement Changes and New Program Activity



(a) Any Change in Mission Statement



(b) Degree of Mission Semantic Change



(c) New Program

Note: Average treatment effect on the treated (ATT) for each dependent variable estimated using the propensity score matched sample described in the notes of Table A9 extended to a 6-year panel centered on the first treatment year. The reference period is $t = -1$, normalized to zero. By construction, all units in the mission-analysis sample have no material mission changes in the pre-treatment years. Error bars denote 95% confidence intervals.