Control Without Ownership: Governance of Nonprofit Hospitals

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The paper provides a comprehensive analysis of the governance structures of nonprofit hospitals and hospital systems. We adapt the framework used to analyze for-profit governance by incorporating nonprofit objectives and legal constraints. We study both the internal governance tools (boards of directors, incentive contracts) and external tools (market for corporate control). Nonprofit boards are unusually large, include more independent and non-independent directors, and face weak external oversight. The disciplinary market for corporate control is less active: nonprofits with poor financial performance are half as likely to be acquired or closed than for-profits, and weak performance on non-financial goals does not affect closures and acquisitions. CEO pay and turnover are sensitive to financial performance but are also unresponsive (or less responsive) to nonfinancial goals, including the quality of medical treatment, patient satisfaction, and charity provision. We conclude that nonprofit governance structures lack the attributes that the literature has traditionally associated with 'good governance.'

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1 Introduction

This paper offers a comprehensive analysis of the governance structures of nonprofit hospitals and hospital systems. While governance of shareholder-owned corporations has been the subject of extensive research, the literature has paid far less attention to nonprofits. The two organizational forms differ in fundamental ways: nonprofits have no shareholders, and their profits (if any) are retained rather than paid out to capital providers. Nonprofit objectives are often stated in terms of serving a broader community, which can include customers and society at large. However, nonprofits and for-profits share a key similarity: decision rights reside with professional managers who retain control over capital allocation. Consequently, both types of firms must rely on governance systems to ensure that managers allocate funds and manage the firm consistently with their firms' stated objectives.

Nonprofits are prevalent in the healthcare sector which comprises a growing fraction of U.S. employment and GDP. This makes the study of nonprofit governance increasingly relevant.[1] Moreover, U.S. firms have been facing pressure to pay more attention to their various stakeholders, including employees and broader communities. Understanding how nonprofits adapt their governance structures to accommodate such diverse interests offers a glimpse into how governance systems look when corporations are stakeholder focused.

We provide a broad picture of nonprofit governance, using the 'traditional' corporate governance framework as a guide. We combine various data sources to study the internal governance mechanisms (via boards of directors and incentive compensation) and external mechanisms (via the market for corporate control). We do not take a stand as to whether the observed structures are efficient in the sense that changing a hospital's status to for-profit (and adapting its governance) would result in a socially worse or better outcome. Instead, we study nonprofit firms' governance systems, taking their objective functions and legal constraints as given. We are interested in the type of governance tools nonprofits use and the specific ways in which they implement those tools.

Our analysis offers insights into the challenges a nonprofit firm faces when trying to translate its objectives into action. The analysis reveals governance structures that are relatively weak in the sense that the alignment between the firm's goals and the outcomes of its decision-makers is less tight. This

[1] According to the American Hospital Association, in 2021, U.S. healthcare spending reached $4.3 trillion, accounting for over 18% of the GDP. Healthcare and social services employed over 20 million people in 2021 compared to 12.4 million for manufacturing (https://www.bls.gov/emp/tables/employment-by-major-industry-sector.htm). The hospital sector alone employed over 6 million people in 2021 and generated over $1 trillion in revenues. Over 50% of all U.S. hospitals are nonprofit.

does not necessarily mean that nonprofits achieve worse outcomes. In some industries, the more tenuous link – and the resulting inefficiencies – may be a price worth paying to avoid other distortions caused by the profit motive. Moreover, nonprofits may rely more on other means, such as cultural norms or self-selection, to regulate managers' behavior.

Our key message is, however, that 'the price' an organization ends up paying for being nonprofit (in the form of limits to its governance) is potentially significant. We show that being nonprofit means giving up features of governance that have proven effective at motivating and monitoring managers elsewhere. This includes agile boards, a tight link between a manager's wealth and the firm's objectives, and a takeover threat to insiders who fail to fulfill those objectives. One contribution of our paper is, thus, to describe and (to the extent possible) quantify the difference between nonprofit and for-profit firms along these dimensions.

To frame the empirical analysis, we describe the legal and institutional constraints nonprofit firms face and the theories of nonprofits developed in the literature. These theories do not explicitly model corporate governance, and we assume that its role is (analogously to for-profits) to align the interests of managers with those of the 'principals' they represent. Who those principals are varies depending on the theory of nonprofits and can include donors or taxpayers who fund the charitable causes (Fama and Jensen (1985), Rose-Ackerman (1996), and Fisman and Hubbard (2005)) or the firm's customers (or patients) who cannot fully evaluate the quality of its products or services (Easily and O'Hara (1983) and Glaeser and Shleifer (2001)).

We begin the empirical analysis by describing the basic features of nonprofit boards and compare them to boards of similar for-profits. A large literature emphasizes the role of boards in monitoring and advising management, with much attention devoted to studying board attributes, such as size and independence. We find that an average nonprofit board is unusually large. Taking hospital systems as an example, an average for-profit board consists of 9.0 directors vs. 19.8 directors for a nonprofit of comparable size (an average nonprofit hospital board has 14.6 directors).[2] A typical nonprofit board includes a relatively large number of independent directors but also insiders or other directors with potential conflicts of interest. The participation of non-executive employees on boards is common in nonprofits and non-existent in for-profits. We find that these insider non-executive directors are

[2] We focus the comparison between for-profit and nonprofit systems (rather than between individual hospitals) to gain a better understanding of governance structures on the firm level. Eldenburg, Hermalin, and Wesibach (2004) examine boards of 486 for-profit, nonprofit, and government hospitals in California from 1980 through 1996 and find consistent results.

typically affiliated physicians. Interestingly, nonprofit independent directors tend to have less professional experience in healthcare, hospitals, or finance compared to their for-profit counterparts, and they are less 'busy' as measured by the number of board seats they hold. A median independent director of a for-profit system earns $270 thousand annually and holds $594 thousand equity in the firm. Nonprofit independent directors typically earn no pay and have no financial stakes in their firms.

One interpretation of these findings is that the board attributes we observe are the best response to the greater demands placed on nonprofit directors (such as fundraising or dealing with more complex objectives); another is that, in the absence of external pressure from shareholders, the boards are inefficient. In either case, our analysis suggests that the nonprofit boards may be less well-equipped to be effective monitors compared to their for-profit counterparts: there is a broad consensus that monitoring is more effective when boards are agile, independent, and incentivized to exert effort on behalf of principals, and based on our findings, nonprofit boards score relatively poorly on these dimensions.[3]

The next governance mechanism we examine is the market for corporate control. Corporate finance research has long argued that the threat of takeovers can discipline incumbent managers because being acquired causes major career disruptions. While takeover transactions among nonprofits do not involve ownership transfers, they constitute changes in control as decision rights are passed on from the target to the acquirer board (we discuss the relevant legal framework in Section 6). Our goal is to gain a better understanding of whether these transactions can play a disciplining role for nonprofit firms.[4]

Our overall findings are that the market for corporate control in the nonprofit sector, while active, is more limited compared to for-profits. On the one hand, we show that departures of CEOs and directors increase sharply after acquisitions, so insiders seem to experience career setbacks similar to those documented for for-profits. On the other hand, the frequency of the change-of-control events is substantially lower for nonprofits, particularly after poor performance. For example, 4.8% of for-profit hospitals in our sample are acquired by a hospital system each year, but this frequency diminishes by a significant 2 percentage points for similar nonprofits. While nonprofits are more likely to be

[3] Consistently with this interpretation, nonprofit boards have been subject to increased public scrutiny, with critics questioning their willingness to protect the nonprofit mission. See, for example, a recent NYT article by Navathe (Nov 30, 2023) in the context of hospitals.

[4] Large literature in health economics investigates nonprofit hospital M&A, but the focus is on their effects on market power and cost synergies (Sloan (2000) and Gaynor, Ho, and Town (2015)). To our knowledge, the research has not considered these transactions as a potential governance tool.

acquired after poor financial performance, for-profits are significantly more likely to be acquired under similar conditions, widening the acquisition gap. We find consistent results for other control transactions: mergers, closures, and private equity deals. Interestingly, acquisitions of nonprofits are entirely unresponsive to non-financial measures of performance that their stakeholders might care about, such as service quality or provision of charity care.

We discuss the potential reasons for the more modest role of takeovers in the nonprofit sector in Section 6 and summarize them here. To begin with, acquisitions of nonprofits face more significant legal hurdles, particularly when they affect donor-restricted assets or cause changes in the nonprofit's purpose. A mismatch between the target and the acquirer objectives presents an additional challenge, particularly when the acquirer is for-profit (though for-profit buyers may have stronger incentives and the ability to turn around underperforming targets). Adding to this challenge, our analysis of nonprofit boards suggests that target insiders have more power to resist changes in control, which, in turn, would discourage potential acquirers from approaching the target in the first place. Our evidence on nonprofit acquisitions is consistent with these explanations and suggests that external governance is an unlikely substitute for the arguably weaker boards.

The paper's final section investigates the role of incentive compensation and CEO turnover in nonprofit governance. We show that they are important governance tools, though both face limitations. An obvious challenge is that, compared to for-profits, nonprofit objectives are less well-defined and more difficult to quantify. This makes it harder for boards to tie explicitly CEO pay or turnover to those objectives. Consistently, we find that, while CEO pay responds to hospital profits, there is no relation between pay and non-financial aspects of performance, including various indicators of service quality (such as patient satisfaction, mortality, or readmission rates) or the extent to which a hospital serves lower-income patients (such as the proportion of Medicaid patients on hospital admissions or expenditures on charity care). Similarly, CEO turnover responds to profits but exhibits less sensitivity to non-financial measures. In contrast, a typical for-profit CEO's pay is tightly linked to the relevant measures of firm performance (from the principals' perspective). Notably, a median CEO of a for-profit hospital system holds a $31.6 million equity stake in the firm, so their wealth responds directly to changes in shareholder value. These effects are absent for nonprofits.

The nonprofit compensation contracts we observe are consistent with the theories of nonprofits (summarized in Section 3) and could be interpreted as the best response to the contracting frictions nonprofits face. Based on these theories, the lower sensitivity of CEO pay to financial performance is

efficient because it directs the CEO's efforts towards the less tangible goals. Similarly, the weak sensitivity to non-financial goals could reflect difficulties with aggregating and measuring those goals. Our results suggest, however, that because of these frictions, the link between nonprofit CEO pay and firm objectives is more tenuous than for for-profit firms and that the weaker built-in incentives create a greater need for active monitoring by the boards.

The paper contributes to the corporate finance literature by examining the governance structures of nonprofit firms. Traditionally, finance research has focused on shareholder-owned firms, though several recent contributions examine nonprofits, including their investment choices, the effects of financing constraints, and private equity involvement (Adelino, Lewellen, Sundaram (2015), Adelino, Lewellen, McCartney (2021), Aghamolla, Karaca-Mandic, Li, and Thakor (2021), Gupta, Howell, and Yannelis (2021), Gao, Lee, and Murphy (2022), Gao, Kim, Sevilir (2022), Duggan et al. (2023), Cornaggia, Li and Ye (2024)). Babenko, Bennett, and Sen (2022) examine the effects of increased regulation of nonprofits in New York on CEO pay and find evidence of agency conflicts, consistent with our results. Herpfer, Lin, and Maturana (2023) examine the effects of hospital conversions to for-profit status and find spending reductions on emergency rooms and Medicaid patients, consistent with the profit focus. There is also extensive literature on nonprofits in health economics, including studies of nonprofit objectives, efficiency, and product market choices (see reviews in Sloan (2000) and Gaynor, Ho, and Town (2015)), but none of these papers examine corporate governance.

Several earlier studies, mainly in the accounting literature, examine specific aspects of nonprofit governance. For example, the earlier studies of nonprofit boards focus on estimating the relation between board characteristics and various hospital outcomes, such as the link between board size and hospital performance, or between board independence and CEO pay (Brickley, Van Horn, and Wedig (2010), Aggarwal, Evans, and Nanda (2012), O'Regan and Oster (2005)).[5] Yermack (2017) examines the role of donor restrictions in the governance of art museums as a possible substitute for strong boards. We add to this literature by offering a more detailed picture of nonprofit boards, including the directors' backgrounds, expertise, 'busyness,' compensation, and hospital affiliations. The studies of CEO compensation and turnover estimate the responsiveness of pay (or turnover) to performance.

[5] Brickley, Van Horn, and Wedig (2010) document a positive association between insider participation on boards and CEO pay in a sample of 308 nonprofit hospitals from 1998 to 2002. Aggarwal, Evans, and Nanda (2012) study boards in a large sample of nonprofits across multiple sectors and find that board size is positively associated with the nonprofit's performance. O'Regan and Oster (2005) study associations between board attributes and directors' behavior in a sample of New York city nonprofit contractors and find, for example, that larger boards are associated with more director giving.

Their broader motivation is often to infer nonprofit objectives from the explicit incentives of their CEOs (Brickley and Van Horn (2002), Eldenburg, Hermalin, Weisbach, and Wosinska (2004), Eldenburg, Gaertner, and Goodman (2015)).[6] In Section 7, we expand this literature by considering a more comprehensive range of performance metrics, a larger and updated sample, and incentives coming from the CEOs' ownership stakes in their firms.

More broadly, our goal is to provide a comprehensive picture of nonprofit governance that includes monitoring by the boards, incentive contracts, and the market for corporate control (the latter channel has not been previously examined). Considering the entire governance structure (rather than each tool in isolation) adds value as it helps us evaluate the system as a whole. Our analysis suggests that replacing owners with stakeholders as principals of the firm results in a governance system that lacks many of the traditionally 'desirable' features, including agile boards, a tight link between CEO outcomes and the principals' goals, and an active market for corporate control. We find no evidence that a relative weakness in one area of the governance structure (such as boards) is compensated by relative strength in another area (such as the market for corporate control).[7,8]

2 Institutional background

A nonprofit corporation (denoted henceforth as a 'nonprofit') is usually defined as a corporation set up for a purpose other than making profits. Any profits it earns must be retained and used to further the corporate purpose. The state of incorporation determines the laws governing nonprofit corporations. The relevant state statutes typically follow the Model Nonprofit Corporation Act proposed by the American Bar Association in 1952, which 37 states have adopted.[9] The act

[6] Brickley and Van Horn (2002) study a large sample of nonprofit hospitals in 1991-1995 while Ballou and Weisbrod (2003) and Erus, Burton, and Weisbrod (2003) use survey data provided by a compensation consulting company for a sample of hospitals during 1992-1997. Eldenburg, Hermalin, Weisbach, and Wosinska (2004) study board and CEO turnover in 486 California hospitals of different organizational forms from 1980 through 1996.

[7] Such substitution effects have been previously documented for for-profits, suggesting that their governance structures may be better able to adapt to external constraints. For example, Denis and Cruse (2000) show that the decline in disciplinary takeovers in the late 1980s was accompanied by an increase in other value-improving corporate restructurings. They conjecture that this was due to the rise of alternative governance mechanisms, such as stock-based compensation or more active boards.

[8] One important caveat is that our conclusions are based on hospitals and may not generalize to other nonprofits, particularly those relying more heavily on current donations (see Yermack (2017) and Babenko et al. (2022) for studies of other nonprofits). We focus on healthcare because of its importance in the U.S. economy and because nonprofits play an outsized role in this sector.

[9] Most states that have not adopted the act follow their respective for-profit business law. Delaware and Kansas have no statues specific to nonprofits.

distinguishes three categories of nonprofit corporations: religious, public benefit, and mutual benefit, with nonprofit hospitals falling into the second category.

According to state corporation laws, the oversight of nonprofits is the responsibility of the state attorneys general (AGs). The state AG is charged with protecting a nonprofit's charitable assets and ensuring that its activities are consistent with the stated mission. This can involve performing audits of the nonprofit's public filings or reviewing and approving major transactions, such as mergers, dissolutions, or conversions to for-profit status. In some cases, the AGs have gone as far as removing directors or dissolving nonprofits that engaged in asset diversion. Many legal scholars compare the oversight responsibilities of the AGs to those of shareholders, noting that the AGs' financial resources are much more limited. For example, Fremont-Smith (2004) reports that in over half of the states, the AG offices employ fewer than four staff members dedicated to the oversight of all nonprofits in the state. Another challenge is that an AG's mandate (and political motivation) is to represent the citizens of their state, creating weaker incentives to monitor larger nonprofits that operate in multiple states (Molk and Sokol (2021)).

Nonprofit organizations can seek tax-exempt status under Section 501 of the Internal Revenue Code (IRC). Most nonprofits, including hospitals, fall under Section 501(c)(3) of the code and must demonstrate sufficient 'community benefit' to qualify. The preferential tax treatment subjects nonprofits to additional federal tax rules and oversight by the IRS. In many cases, these rules reinforce those imposed by the state corporation acts. For example, the IRS requires that a nonprofit's activities are constrained by its mission and that its earnings are not used to benefit private individuals. Finally, the tax law requires nonprofits to make public filings with the IRS, the most comprehensive of which is Form 990. The form is required from organizations that exceed a certain size threshold and includes information on the organization's programs and activities, governance, and financial results.

The internal organization of a charitable nonprofit and its purpose are initially specified in its articles of incorporation. In most cases, the control of the organization is entrusted to a self-perpetuating board of directors.[10] Fiduciary duties of directors of charitable organizations, as specified in the state laws, are analogous to those of directors of for-profit corporations and include the duties

[10] Some charitable corporations also have members, though, in such instances, members and directors are often the same persons. The position and power of members are analogous to those of shareholders, except that members have no financial stakes. In the hospital sector, membership is often used to set up parent-subsidiary structures whereby the 'parent' corporation is a sole voting member of a 'subsidiary' and, as such, retains control over the subsidiary. This can include the power to appoint directors or amend bylaws.

of care, loyalty, and obedience. Most state laws impose no additional requirements on the identities of nonprofit directors. One of the exceptions is the California Nonprofit Corporation Act, which requires that not more than 49% of a nonprofit directors can be the so-called 'interested persons' (that is, persons who receive compensation from the nonprofit). Generally, it is customary that nonprofit directors serve without compensation, but there are no restrictions on executives to receive salaries or serve on the board.

3 Theories of nonprofits and their implications for nonprofit governance

In this section, we summarize the theories of a nonprofit firm developed in the literature and discuss their broad implications for nonprofit governance. The relevant theories can be grouped into two categories, which we label altruism- and information friction-based. According to the altruism view, certain altruistic agents derive utility from subsidizing the consumption of goods or services by others, and nonprofit firms emerge as suppliers of these goods (Fama and Jensen (1985), Rose-Ackerman (1996), Fisman and Hubbard (2005), and Lakdawalla and Phillipson (2006)). The altruistic agents could be thought of as donors or taxpayers who provide funds to nonprofits. To survive, nonprofits must compete for donations (or subsidies), so their choices must be aligned with the preferences of the altruistic agents. To approximate this alignment, the models typically assume that nonprofit firms maximize the utility of their donors (or taxpayers).

The information friction-based theories start with the assumption that, in some industries, such as healthcare or education, customers cannot easily evaluate product quality (Easily and O'Hara (1983) and Glaeser and Shleifer (2001)).[11] As a result, shareholders are incentivized to shirk quality to increase profits. These incentives are mitigated in a nonprofit firm with no shareholders and must retain all its profits. While this non-distribution constraint 'softens' the profit motive and improves incentives to supply quality, the absence of shareholders has undesirable side effects. It means that control is, effectively, in the hands of the nonprofit's insiders who pursue their own objectives. Unlike shareholders, managers cannot pay themselves dividends but can divert profits in other ways, for example, via excessive salaries or perks. Easily and O'Hara (1983) and others show that, despite these inefficiencies, nonprofits can be the optimal organizational form in industries where product market

[11] Similar arguments are in Arrow (1963) and Hansmann (1980) who point out that healthcare is particularly prone to the information frictions because of the complexity and opacity of medical advice. Hansmann acknowledges, however, that private donations and government subsidies likely contributed to the importance of nonprofits in the hospital sector. The first U.S. hospitals were charitable organizations funded by private donations, and their boards often consisted of prominent donors. Private donations constitute only a small fraction of nonprofit hospitals' revenues today.

frictions are most severe. Newhouse (1970), Feldstein (1971), and Pauly and Redisch (1973) take these ideas a step further and argue that nonprofit hospitals are fully controlled by their powerful employees, such as managers, directors, and physicians (see also Glaeser (2003)).

While the theories of nonprofits outlined above do not explicitly model corporate governance, they suggest that the purpose of governance is (similarly to for-profits) to align the interests of managers with those of the key external stakeholders (or 'principals'). According to the altruism-based view, these stakeholders are the donors and taxpayers who provide financing and ensure the nonprofit's survival; according to the information-frictions view, they are the firm's customers, or in the case of hospitals, patients.

By defining nonprofit objectives, the theories indicate the kind of performance metrics that nonprofit governance should use to monitor and incentivize managers. The donor-based theories imply that the board (or other external monitors) should pay attention to the nonprofit's charity provision since charity directly enters the donor's utility and is the sole purpose of creating the nonprofit. Information-friction theories suggest that the board should pay attention to service quality, which benefits the key stakeholders (in this case, patients) but may be undersupplied by insiders focused on profits or perks. This argument assumes that the board can better evaluate quality than patients, for example, because it can access internal data on patient experience or health outcomes.[12]

Both sets of theories imply that nonprofit boards should focus relatively less on financial performance compared to for-profits. First, to satisfy donors and taxpayers, free cash flows should be used to provide charity services, not to generate excess profits. Second, too much attention to profits can cause for-profit firms to provide less quality, which nonprofits are designed to avoid. However, neither theory suggests that the weight on profits should be zero: high profits could be a sign of good management rather than rent extraction or under-provision of charity. Good management should be encouraged because the resulting profits can be used for more charity (or better services). The theories offer no guidance as to the weights nonprofits should assign to each of the three performance signals (quality, charity, and profits), and one of our goals is to estimate them empirically.[13]

[12] In practice, hospitals are required by the Center for Medicare Services to generate a variety of quality metrics, which are available to the boards.

[13] Another caveat is that the theories do not consider other aspects of nonprofit performance that their stakeholders may care about. In the empirical part of the paper, we include measures of hospital size and capital expenditures as control variables, but the coefficients can be interpreted as reflecting managers' incentives to grow services or capital stock.

Guided by this framework, the empirical part of the paper examines three elements of nonprofit governance: (1) boards of directors, (2) market for corporate control, and (3) CEO compensation and turnover. We rely on the theory and methodology developed in the 'traditional' governance literature in all three areas.

4 Sample and data

4.1 Data sources

The paper combines data from a variety of sources. Information on hospital governance comes from the IRS Form 990 filings required from most tax-exempt organizations with gross receipts above 200,000 and total assets above $500,000.[14] For 1999 through 2014, we acquired the data from GuideStar USA; for 2015 through 2018, we downloaded it directly from the IRS website. The Form 990 filings contain the filer's financial information, including the balance sheet and the statements of revenues and functional expenses. The forms also list the names, titles, and annual compensation of the filers' officers and directors. We use the reported titles to identify the hospital's CEO or, in the absence of the CEO, the president (henceforth, we will refer to both the CEO and the president as a 'CEO' for simplicity).[15] To identify directors in the full sample, we also rely on the reported titles though starting in 2008, hospitals provide director indicators in the IRS filings. We use these indicators in the subset of tests that are based on the post-2008 data.[16] We complement the IRS governance data with hand-collected information on director backgrounds for a sub-sample of nonprofit systems, and all publicly traded for-profit systems.

We obtain data on the hospitals' services, system affiliations, mergers, and closures from the American Hospital Association (AHA) Annual Survey Database provided to us by The Dartmouth Institute for Health Policy and Clinical Practice for the years 2000 through 2018. We restrict the sample to for-profit and nonprofit hospitals (i.e., we exclude government hospitals from the sample). The data on system acquisitions and PE events were generously provided to us by Gao, Kim, and

[14] https://www.irs.gov/pub/irs-pdf/i990.pdf.

[15] The titles and names obtained from the Form 990 are not standardized and are sometimes misspelled. We search each title for strings indicating a CEO (such as 'CEO' or 'Chief execut') or indicating a president wherever a CEO cannot be identified. We then examine firm-years with multiple executives tagged as potential CEOs (or presidents). Most of these cases are CEO transitions, in which case we eliminate the departing CEO, or cases in which the form lists CEOs of both the filer and its related organizations. We resolve such cases manually wherever possible.

[16] We use IRS Form 990, Part VII to classify directors. This allows us to identify when directors have multiple non-exclusive roles (e.g., officers and trustees). Schedule J, which is often used to obtain more detailed information on key people's compensation, reports only one role per individual (e.g., officer or trustee).

Sevilir (2022) and were manually cross-checked against publicly available sources. (We discuss our definitions of the different corporate events in Section 4.3.)

Mortality, readmission, and patient satisfaction data come from the Center for Medicare and Medicaid Services (CMS). Data on readmission and mortality rates are available starting in 2008 and 2009, respectively, whereas patient satisfaction data has been available since 2008. In some of the analyses, we also use financial data from the Healthcare Cost Report Information System (HCRIS). Medicare-certified institutional providers, including hospitals, submit the cost reports annually to the CMS.

For for-profit systems (described in Section 4.2), we obtain the financial statement and stock return data from the Compustat database and the Center for Research in Security Prices (CRSP). CEO compensation data comes from the Standard & Poors ExecuComp database, and information on their boards of directors comes from BoardEx. We fill in missing compensation data by manually searching the systems' proxy statements. All variables' definitions are in Appendix A.

4.2 Sample for the internal governance analysis (IRS nonprofit sample)

For the governance analysis, we use a sample of nonprofit organizations from 2000 through 2018 that file Form 990 with the IRS and are included in the AHA hospital database. The matching between the AHA and the IRS is done using the organizations' names and addresses, with ambiguous matches manually resolved. This initial sample consists of 32,552 observations and 2,196 hospitals. To be included in the analysis, we require that a hospital's service revenues and total assets each exceed $1 million, and that we can identify the hospital's CEO (or the president) from the IRS filing. These conditions reduce our sample to 2,069 hospitals and 27,869 hospital-years. Descriptive statistics for the sample are in Table 1, and the variables definitions are in Appendix A.

For the governance analysis on the hospital system level, we include the 14 for-profit systems on the AHA database from 2009 through 2018 that are publicly traded and, thus, disclose governance information. For comparison, we construct a sample of nonprofit systems by combining system information from the AHA with the IRS Form 990 governance data for 2009-2018. We focus on the largest nonprofit systems to make them comparable to the for-profits. To that end, we require that

the nonprofit system has a minimum of 3,000 beds across all member hospitals as of 2014, which narrows down the sample to 21 nonprofit systems.[17]

4.3 Sample for the M&A analysis (AHA sample)

To construct the dataset for the M&A analysis, we begin with a hospital panel from the AHA database. We limit this panel to the hospital-years used in Gao et al. (2022), who provide us with acquisition data, and require the availability of financial information from the HCRIS database. For consistency with the IRS sample, we also require that a hospital's operating revenues and total assets each exceed $1 million. This sample contains 56,384 hospital-year observations and spans the years 2001-2018. In contrast to the IRS sample, the panel includes nonprofit hospitals (3,232) and for-profit hospitals (1,071). The descriptive statistics for hospitals by organizational form are in Table 2.

We examine four types of corporate events, *System Acquisitions*, *Private Equity (PE) Events*, *Mergers*, and *Closures*. We denote *System Acquisitions* events whereby a hospital joins a system (or changes system affiliation) but survives as a separate entity in the AHA file and continues filing separate cost reports with the CMS. In contrast, we classify as *Mergers* transactions that result in the deletion of a hospital from the AHA file, with the reason for deletion listed as 'merged.' We treat the deleted hospital as the merger target and the surviving hospital as the acquirer.[18] Finally, we classify as *Closures* hospital deletions from the AHA files, with the reason for deletion listed as 'closed.' *PE Events* are transactions that involve private equity firms, which include acquisitions by PE-backed systems or infusions of PE capital into for-profit hospitals.

The overall sample of nonprofits and for-profits includes 1,615 system acquisitions (981 where the acquirer is a nonprofit system and 634 where the acquirer is a for-profit system), 126 mergers, and 196 closures. The sample also includes 607 transactions involving private equity firms, 378 of which are also system events where the acquirer is PE-backed (the remaining 229 are infusions of private equity capital into for-profit hospitals). The numbers of system acquisitions, mergers, and closures involving nonprofit targets are 1,065, 87, and 88, respectively. Additional statistics on these events are reported in Table 2 Panel A. Panel B reports the number of acquisitions by target and acquirer type (nonprofit vs. for-profit) and their incidence relative to the total number of observations by the target

[17] We provide an example of the differences between hospitals and systems' Form 990 in Appendix B.

[18] In some cases, both merging hospitals are deleted and a new entity is formed. In such cases, we classify the smaller hospital as the target. We measure size based on the hospital's total beds (or based on personnel in the absence of total beds) in the year prior to deletion.

type. It shows that acquisitions within-type are more common than across-type, with acquisitions of nonprofit hospitals by for-profits being the least frequent.

Using the AHA data, we examine the geographic incidence of nonprofit hospitals by State in 2018. Appendix Figure A1 shows stark differences across regions: southern states show a higher prevalence of for-profit hospitals, while nonprofit hospitals are more common in the Midwest. To control for these differences, as well as any time-varying state level regulations such as the expansion of the Affordable Care Act (ACA), we include state-year fixed effects in our tests.

4.4 Measures of hospital performance

The theories on nonprofits, discussed in Section 3.2.2, suggest three dimensions of hospital performance that boards might care about: profitability, charity provision, and service quality. Throughout the paper, we use hospital profit margin (*Margin)* to capture the financial dimension. Charity provision, defined here as the provision of services below their marginal costs, is measured using the hospital's spending on Medicaid and charity care. We use *Medicaid* (defined as the fraction of Medicaid admissions to total admissions) as our main measure because Medicaid services are, on average, unprofitable to hospitals, and the data is available reliably throughout our sample period.[19] Information on charity care expenditures comes from Worksheet S-10 of the Medicare Cost Reports and is reported consistently starting in 2011. To construct our measure (*Charity)*, we scale this variable by the hospital's total expenditures. Charity care includes free or discounted services to patients who are unable to pay and, thus, qualify for the hospital's financial assistance programs (see details in Dranove, Garthwaite, and Ody (2016)).

To measure service quality, we use hospital-level data on patient readmission rates, mortality rates, and patient satisfaction. The CMS reports risk-adjusted data on readmission and mortality rates at the provider level. The risk adjustment takes into account patient characteristics that may affect the likelihood of death or readmission, such as age, medical history, or other medical conditions.[20] We focus on the 30-day risk-adjusted mortality and readmission rates for three key acute conditions that

[19] For example, in 2017, hospitals received 87 cents for every dollar spent caring for Medicaid and Medicaid patients ("Underpayment by Medicare and Medicaid Fact Sheet", American Hospital Association (January 2019)). See Dranove and White (1998) and Frakt (2011) for evidence on Medicaid reimbursement in earlier years. Importantly, several studies show that hospitals have a discretion to limit services they provide to Medicaid patients. Venkatesh et al. (2019) find that emergency departments are more likely to discharge or transfer uninsured or Medicaid patients compared to privately insured patients with similar medical conditions. See also Nacht, Macht, and Ginde (2013) and Kidnermann et al. (2014).
[20]https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/MMS/Downloads/Risk-Adjustment.pdf.

have been consistently reported since 2008: heart attacks (AMI), heart failures (HF) and pneumonia (PN). These measures are used routinely to evaluate the quality of a hospital's medical services (Beaulieu et al., 2020; Aghamolla et al., 2021; Cooper et al., 2022; Gao et al., 2022). We average the mortality rates (or the readmission rates) across the three conditions by hospital-year and then normalize them by year across all hospitals (including government-owned) to have a mean of zero and a standard deviation of one. *Mortality (low)* and *Readm. (low)* are the normalized measures multiplied by -1.[21]

We complement the data on the quality of medical treatment with direct measures of patient satisfaction. The data comes from a survey administered by the CMS to a random sample of adult patients as part of the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). The survey asks multiple related questions, for example, concerning the level of communication with medical personnel or the patient's overall level of satisfaction with the service. To identify underperforming hospitals, we focus on the percentage of surveyed patients who do not recommend the hospital (we exclude hospital-years with less than 20% response rates). For consistency with the previous measures, we normalize this variable by year to have a mean of zero and a standard deviation of one. *Not recom. (low)* is the normalized measures multiplied by -1. Finally, we combine all three quality measures into a single *Quality Index* by averaging the normalized variables by hospital-year.[22]

Descriptive statistics for measures of charity provision and service quality are in Table 1 (for the IRS sample) and Table 2 (for the AHA sample). Focusing on Table 2, Medicaid patients constitute 18.9% of all admissions for nonprofit hospitals, compared to 16.5% for for-profit hospitals. The proportions of charity care on operating expenses are similar for both hospital types (averages of 1.7% for nonprofits vs. 1.8% for for-profits). Nonprofit hospitals perform better on average based on all measures of service quality, resulting in a *Quality Index* of 0.08 for nonprofits and -0.29 for for-profits.

[21] The Hospital Readmission Reduction Program (HRRP) established in 2010 penalized hospitals with higher-than-expected readmission rates. Recent studies suggest that some hospitals manipulated their reported readmission rates to avoid the penalties, for example, by increasing the coded case severity (Ibrahim et al. (2018), Hsuan et al. (2020)). To account for this possibility, we report separate results for mortality and readmissions in most tests. The results are generally consistent across the measures.

[22] We do not consider quality metrics based on "timely and effective care" (Cooper et al, 2019), as there are no measures that are consistently reported throughout our sample period.

5 Boards of directors: descriptive evidence

5.1 Background

A large literature analyzes the role of boards of directors in the governance of shareholder-owned firms (see theoretical contributions in Hermalin and Weisbach (1998, 2003), Adams and Ferreira (2007), Raheja (2005), Harris and Raviv (2006)). The common perspective is that a board's primary responsibility is to monitor and advise managers, ensuring that they act in their shareholders' interest. However, the board itself is subject to agency conflicts, and its structure and decision making is not always aligned with what is best for shareholders. For example, a powerful CEO might support the election of friendly directors who, in turn, help entrench the CEO (Hermalin and Weisbach (1988)).

Guided by the theory, many studies investigate the structure of corporate boards, with two attributes – board size and independence – receiving particular attention (see overview in Hermalin and Weisbach (2003)). The literature recognizes that choosing these attributes involves trade-offs: for example, larger boards can bring in more diversity and expertise, but they are also more prone to free rider and coordination problems. Similarly, while inside directors contribute firm-specific knowledge, they often face conflicting incentives and lack independence from the CEO. The evidence on how board characteristics vary across firms is broadly consistent with these trade-offs (e.g., Coles, Daniel, and Naveen (2007), Linck, Netter, and Yang (2008)).[23]

The ideas developed in this literature can be applied directly to nonprofits. As in shareholder-owned firms, nonprofit boards advise and monitor managers, but they face additional challenges, including fundraising and dealing with more complex objectives (see discussion in Section 2). These additional demands likely affect a nonprofit board's 'optimal' attributes and, indirectly, the board's ability to monitor managers. Our descriptive evidence in this section focuses on those attributes that the literature has identified as relevant from the monitoring perspective, notably, board size, independence, expertise, 'busyness', and director remuneration.

[23] For example, boards tend to be smaller and less independent in firms with higher R&D and more uncertain cash flows, consistent with the premise that these firms value agility and firm-specific knowledge. In contrast, larger and more independent boards are more common in large, complex, and diversified firms that benefit more from expertise across different business areas. Testing the effects of boards size and composition directly is difficult because exogenous changes in these attributes are hard to come by. The results from these studies are mixed (see overview in Hermalin and Weisbach (2003)).

5.2 Board size, independence, and director remuneration

Table 3 examines the size and structure of nonprofit hospitals (Panel A) and large nonprofit and for-profit hospital systems (Panel B). Most for-profit hospitals are part of systems (instead of being standalone) and do not disclose information on boards at the hospital level. Hence, the system evidence allows us to compare the governance structures of firms in the hospital industry organized as either for-profits or nonprofits. Our system sample in Panel B includes publicly traded for-profit systems and the largest nonprofit systems based on the total number of beds for which we have governance data from 2009-2018 (the details are in the table header and Section 4.2).

The first striking observation from Table 3 is that nonprofit boards are unusually large. An average nonprofit hospital in Panel A has 14.6 directors, and an average nonprofit system in Panel B has 19.8 directors. This compares to 9.0 directors for a – typically larger – for-profit system. The last column of Panel B reports a coefficient from regressions of board size (and of other board characteristics reported in the table) on a dummy variable indicating nonprofit systems. The regressions control for system size using *log(Beds)*, and the standard errors clustered by system. The coefficient in the *All Directors* regression suggests that boards of nonprofit systems are larger than boards of for-profit systems of similar size by 10.781 members.[24]

There are two ways to interpret these differences. One is that the larger boards in nonprofits are necessary to fulfill their more complex responsibilities (due to, for example, murkier objectives, heterogeneous stakeholders, or fundraising goals). The implication is that nonprofit boards 'give up' some of the agility and cohesion associated with a smaller size to accommodate these additional challenges. Another (not mutually exclusive) interpretation is that nonprofit boards are sub-optimally large because they lack external oversight by shareholders who would otherwise constrain their size. A direct consequence of either scenario is that a nonprofit board's ability to perform its 'traditional' functions of monitoring and advising is more limited.

The second key feature of corporate boards is their independence. While the IRS imposes no restrictions on the independence of nonprofit boards, it requires (starting in 2008) that nonprofits disclose the numbers of independent directors in their Form 990 filings. The IRS considers a director

[24] As an additional check, we construct a sample of for-profit public firms matched on size to the nonprofit hospitals in our sample. We require that the for-profit firms have R&D below 0.02 of assets, which is close to the sample median (hospitals report no R&D). We find that these firms' boards have, on average, 7 directors compared to the 14 directors of nonprofit hospitals.

to be independent if they are not compensated as an employee of the organization (or related organizations) and has no other conflicts of interest, for example, via business transactions or family relationships.[25] This definition of independence is similar to that used by the US stock exchanges in their listing requirements, and it is also similar to that used by firms in their proxy statement disclosures.[26] In the following, we rely on the IRS disclosures to measure the independence of nonprofit boards and on the proxy statement disclosures to measure the independence of for-profit boards. We deviate from the proxy designation of independence in that we code private equity directors as independent. This assumes that private equity investors are more aligned with the firm's other shareholders than with its insiders.[27]

We find that nonprofit firms (hospitals and systems) have higher numbers of both independent and 'non-independent' directors compared to for-profits. Taking systems as an example, the number of non-independent directors in for-profits is 1.9 (out of the total of 9.0) vs. 4.2 (out of the total of 19.8) in nonprofits (Panel B of Table 3). The fraction of non-independent directors are similar across for-profit and nonprofit systems (0.21 and 0.19). The structures are similar for nonprofit systems and nonprofit hospitals (Panel A).

The higher numbers of independent directors in nonprofits are to be expected as this group likely includes donors (in Table A1, we show that independent directors are more common in hospitals that rely more on donations)[28]. The justification for the additional non-independent directors is less obvious. To gain insight into their roles, we split the non-independent directors into three groups: executives, non-executive employees, and other non-employee directors with conflicts of interest.[29]

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[25] See details in the instructions for the Form 990: https://www.irs.gov/pub/irs-pdf/i990.pdf.

[26] See, for example, Nasdaq definition: https://listingcenter.nasdaq.com/rulebook/nasdaq/rules/nasdaq-5600-series.

[27] Consistently, the IRS considers donors as independent even if they may be a major source of funds for the nonprofit.

[28] Historically, the first U.S. hospitals were charitable organizations funded by donations, and their boards included prominent donors. Today, private donations constitute only are small fraction of nonprofit hospitals' revenues. Based on the middle column in Table A1, a one standard deviation increase in donations is associated with a 5-percentage point increase in the number of independent directors. Hence, donations alone cannot quantitatively explain the large differences in board sizes we see between for-profit and nonprofits. Moreover, donations lose statistical significance when hospital fixed effects are included. This is to be expected, as within-hospital variation in board size is less than one-third of the between-hospital variation (overall, changes in firm characteristics are not highly correlated with changes in board sizes in the time series). We cannot examine donations by individual directors because this information is not publicly disclosed.

[29] The IRS form 990 does not explicitly flag the different types of directors, so we approximate these groups using information on the director's compensation and on his/her role as an 'officer' provided in the form. Officers include executives but may also include independent directors with a leadership position on the board (such as the board's chair, treasurer, or secretary). We confirm this by investigating the titles of officer directors listed in the form. Thus, we define a director as an executive if he/she is flagged and an officer and earns compensation of more than $50,000 ($65,000 for systems). This requirement helps us filter out officers that are independent directors. We treat all other directors that receive pay in excess of $50,000 ($65,000 for systems) but are not officers as non-executive employees. We treat the

We classify the for-profit non-independent directors into analogous groups using information on directors' backgrounds in the firms' proxy statements. We find that both nonprofit and for-profit system boards typically include the firm's top executive, who is usually the CEO (1.31 directors for nonprofits and 1.35 for for-profits). However, nonprofits are more likely to include a non-executive employee (1.19 directors for nonprofits and 0.00 for for-profits) and another non-employee director with conflicts of interest (1.69 directors for nonprofits and 0.52 for for-profits).[30] Employee directors are not present in any of the for-profit firms we examine. A more detailed examination of the directors' backgrounds in Table 4 (discussed below) reveals that the non-independent non-executive directors often hold medical degrees and/or work as medical doctors at the hospitals affiliated with the system.

It is possible that the relatively high number of non-executive employees and directors with medical expertise on nonprofit boards reflects these boards' greater demand for firm-specific knowledge that these employees bring to the table. Consistently with this interpretation, Table A1 shows that hospitals that belong to systems (in which demand for internal expertise may be higher due to their greater organizational complexity) have more inside directors than standalone hospitals. Another explanation, derived from Glaeser (2003) and Newhouse (1970), is that, in the absence of owners, nonprofit employees acquire outsized influence in their firms, and that board participation is one way in which this influence is being exercised.[31] In either case, our evidence suggests that employee interests may feed more strongly into board decisions in nonprofit than for-profit firms.

Finally, Table 3 highlights an important difference between the independent directors of nonprofits and for-profits, namely, their compensation. Examining proxy statements of the for-profit systems, we find that a median non-employee director in our sample earns basic compensation of $270.0 thousand per year, which includes salary and equity awards, and holds a $594.3 thousand stake in the firm (Panel B of Table 3).[32] While nonprofits are not required to disclose director pay directly,

remaining independent directors as non-employees. We select the cutoffs based on the maximum estimated retainer paid to a director of a hospital or a system. The details of the estimation are in Appendix C.

[30] A closer examination of the non-executive directors' titles reveals that a vast majority have no additional title (other than "trustee" or "director"). Examples of non-independent non-employee directors are former executives, directors with business relationships with the company, or the personal lawyer of the CEO.

[31] It is also worthwhile to note that most state laws impose no constraints on insider participation of nonprofit boards (see discussion in Section 2). In contrast, for-profit publicly traded firms are subject to requirements imposed by the U.S. stock exchanges to maintain a certain fraction of independent directors.

[32] We report director compensation that includes the cash retainer and the fair value of option and restricted stock awards but excludes additional director compensation, for example, for serving as a board chair or a committee chair. Means for compensation and ownership are $229.5 thousand and $2,482.0 thousand, respectively.

we estimate these amounts using information provided in Form 990, Part VII (see details of estimation in Appendix A). We find that nonprofit directors are much less likely to receive retainers, and when they do, the amounts are much lower. An average retainer in a large nonprofit system is $6,690 annually, the 90th percentile is $27,500 and the maximum is $63,000 (Banner Health System in 2018). Moreover, by definition, nonprofit directors hold no ownership stakes. Based on these findings, nonprofit directors have weaker financial incentives to exert effort on behalf of their principals compared to for-profit directors.

5.3 Director backgrounds and expertise

To shed more light on the directors' backgrounds and expertise, we hand-collect details on their professional experience from newspaper articles, LinkedIn pages, and other public sources. The data, summarized in Table 4, covers 126 directors of the 14 public for-profit systems and 264 directors of the largest 14 nonprofit systems in 2019. We split the directors into *affiliated* (Panel A) and *non-affiliated* (Panel B) groups based on whether our sources indicate a business or employment relationship with any of the system's entities.

Consistently with the results in Table 3, we find that affiliated directors in nonprofit systems are significantly more likely to work as medical doctors (43% vs. 0%) or hold medical degrees (63% vs. 0%), and are less likely to be executives (45% vs. 76%) or hold MBAs (16% vs. 41%) or any management degrees (33% vs. 59%). Based on Panel B, the backgrounds of unaffiliated directors also differ substantially across the two sectors. Most notably, the unaffiliated directors in nonprofits are less likely to have work experience in the healthcare sector (39% vs. 61%) or in hospitals (25% vs. 47%). They are also less likely to list their current occupation as 'finance' (12% vs. 28%), or to have attended an Ivy League school (20% vs. 31%). One reason for these differences might be that outside directors can gain seats on nonprofit boards on the basis of their financial contributions (or because they represent the 'community') rather than on the basis of their professional experience. (Consistently, Table A1 shows that hospitals that rely more on donations have more outside directors.) If so, professional expertise on nonprofit boards will be relatively more concentrated among directors with economic ties to the nonprofit, such as affiliated physicians and managers, rather than among independent directors.

There are two additional notable patterns in Table 4. First, the markets for for-profit and nonprofit directors appear to be segmented: the for-profit directors are substantially more likely to have prior

work or board experience in the for-profit than the nonprofit sector (and vice versa). This result is consistent with the differences in skills, educational backgrounds, and career paths we document. Second, the for-profit directors are significantly more likely to have additional board seats compared to the nonprofit directors, including seats on other for-profit boards in healthcare or in the hospital sector. The literature has argued that 'busy directors' (i.e., those with multiple board seats) are more in demand because they bring more desirable skills to the table (e.g., Ferris et al. (2003) find that directors serving in larger and better performing firms tend to attract directorships). This interpretation is consistent with other evidence in Table 4 that for-profit directors have more professional experience. On the flip side, Fich and Shivdasani (2006), among others, argue that busy boards are more likely to shirk their duties (e.g., they report the association of 'busyness' with weaker performance). Our evidence suggests that these concerns are less relevant for nonprofits.

In sum, we find that nonprofit boards tend to be unusually large and have higher numbers of both independent and non-independent directors than for-profits. Compared to for-profits, nonprofit non-independent directors are more likely to include non-executive employees or other non-employee directors with conflicts of interest, and nonprofit independent directors are less likely to have healthcare or hospital expertise. While for-profit independent directors receive compensation and hold significant equity stakes, nonprofit directors receive no comparable financial rewards. Based on these findings, nonprofit boards score relatively poorly on attributes that the governance literature considers desirable from a monitoring perspective.

6 Market for corporate control

6.1 Background

The idea that a takeover threat disciplines incumbent managers and, thus, serves as a governance tool has been examined extensively in the literature (the early studies include Grossman and Hart (1980), Jensen and Ruback (1983), Jensen (1988), Scharfstein (1988)). Takeovers create large value gains for target shareholders and are more likely when the targets underperform (Palepu (1986), Morck, Shleifer, and Vishny (1988, 1989), Andrade, Mitchell, and Stafford (2001)). There is also evidence that target managers lose their jobs after takeovers, and that their careers suffer as a result.[33] Consistently, many researchers interpret the widespread use of antitakeover measures as evidence that

[33] Martin and McConnel (1991), Agrawal and Walkling (1994), Hartzell, Ofek, and Yermack (2004).

insiders resist takeovers to protect their careers. Thus, while mergers are motivated by a variety of factors, such as technological synergies or market power, they often result in the replacement of an underperforming management team.[34]

Because nonprofits have no shareholders, they are not subject to the market for corporate control in the traditional sense. However, nonprofit hospitals are often acquired by other hospitals or hospital systems. A large literature in health economics investigates these events but focuses mostly on their effects on market power or operational efficiency. In contrast, the perspective in this paper is that acquisitions also represent a transfer of control and, thus, serve as a governance mechanism analogous to that available to for-profits. While these transactions do not transfer ownership from one set of shareholders to another, they do pass on decision rights regarding the target's assets from the target to the acquirer board. In the case of system acquisitions, the target board is often (at least initially) retained with more limited authority; in the case of mergers, the target board is entirely dissolved (see further institutional details in Appendix D).

Our hypothesis is that the nonprofit status weakens the power of takeovers as a governance tool. First, any disposition of nonprofit assets, including through a merger, triggers legal challenges (see detailed discussion in Appendix D).[35] These legal challenges impose costs on the target and the acquirer, so that some otherwise attractive transactions will not take place. Second, the lack of target shareholders means that the decision to give up control rests entirely with the target managers (whose careers may suffer as a result) and its (potentially coopted) board. Thus, career concerns may play a bigger role when nonprofits are involved. Third, nonprofit acquisitions by for-profits are subject to additional legal hurdles and may be less attractive to both parties due to the organizations' poorer fit (though, in principle, for-profits may be better incentivized to improve the efficiency of an underperforming target).[36]

[34] In a similar vein, the use of golden parachutes suggests that shareholders try to counteract this resistance and incentivize managers to give up control. See Knoeber (1986), Harris (1990), and Eisfeldt and Rampini (2008) for models of golden parachutes. In more recent years, additional pressure on managers has come from activist investors (Fos (2017)). Brav et al. (2008) find that activist interventions are more likely after poor performance and that announcements of activist campaigns are good news for shareholders.

[35] Many states require that transactions involving nonprofits are approved by the court or by the state Attorney General (AG). The approval process can be cumbersome and involve diverse constituencies, including local communities and advocacy groups. Acquisitions of nonprofits by for-profits are more likely to require state (or court) approvals and often present additional challenges (see more detailed discussion in Appendix D).

[36] It is also interesting to consider the incentives of nonprofit acquirers. On the one hand, the nonprofits' weaker focus on profits might imply less interest to engage in these transactions. On the other hand, the private incentives of acquirer managers (such as empire building) are less clear, and if boards exert less control, these incentives could have stronger effects on corporate decisions.

Viewing hospital acquisitions as control events raises the question of how powerful they are as a means to discipline managers. To investigate this question, in Section 6.2, we compare the frequencies of the various change-of-control events when the target is nonprofit vs. for-profit and test how strongly they respond to measures of target performance, both financial and non-financial. In Section 6.3, we document changes in the target's management and board following the change-of-control events to gauge the extent to which these events represent a threat to the insiders' careers.

6.2 Predicting changes-in-control events

To investigate these questions, Table 5 and Figure 1 compare the frequencies and determinants of the various control events within the for-profit and nonprofit samples. The table distinguishes four types of events, defined in Section 3.5: *System acquisitions*, *PE events*, *Closures*, and *Mergers*. For each event, we estimate a regression within the full AHA panel with the dependent variable equal to one for the firm-years in which the event takes place and zero otherwise. In each panel, the key explanatory variable is a dummy indicating that the target is nonprofit, a measure of hospital performance, and an interaction of *Nonprofit* with performance. Each regression includes state-year fixed effects and time-varying controls, and some regressions also include firm fixed effects. We consider four measures of nonprofit hospital performance: profit margin (*Margin)* in Panel A, the proportion of Medicaid patients on total admission (*Medicaid*) in Panel B, spending on charity care as a fraction of operating expenses (*Charity*) in Panel C, and the measure of service quality that combines patient mortality, readmissions, and patient satisfaction (*Quality*) in Panel D. The performance measures are motivated by the theories of nonprofits discussed in Section 3: profit margins measure the hospitals' financial performance, and the latter three measures capture the extent to which hospitals delivers high-quality care and provides services to lower-income patients at prices below marginal costs.

The results are striking and support our hypothesis that nonprofit status weakens the power of takeovers as a governance tool. Starting with Panel A, all regressions show that non-profit hospitals are significantly less likely to experience each of the four types of control events. Moreover, the likelihood of each event is substantially less sensitive to the financial performance of nonprofits. Based on the first three columns, the probability of a system acquisition in a given year is 2.1 percentage points lower for nonprofits, compared to the baseline likelihood for for-profits of 4.8% reported in Table 2. The gap in the frequencies of these events between for-profits and nonprofits is especially

large after poor performance: decreasing *Margin* by 0.1 increases the gap by 1.1 percentage point (column (3)).[37] These effects are illustrated in Figure 1, Panel A.

The results are even stronger for the PE events, which we define as acquisitions by for-profit firms with private equity involvement or private equity infusions by private equity to hospitals owned by privately held firms (see details in Section 4). Based on column 4, the probability of being a PE target is 3.7 percentage points lower for nonprofits, compared to the baseline likelihood of 4.1% for a for-profit, so most PE events involve for-profit targets. Again, the gap between for-profits and nonprofits increases by 1.1 percentage points with every 0.1 decline in margins (column (6)). Hospital mergers, that is, events in which one or both hospitals are dissolved, are generally less frequent in our sample (the likelihoods in Table 2 are 0.2% for nonprofits and 0.3% for for-profits), but their frequency is also significantly lower for nonprofits.

The final event we consider is hospital closures. We include closures in the analysis because they also constitute negative career outcomes for managers and directors and, thus, could have an incentive effect. Moreover, given the lower likelihood of acquisitions, closures could play a bigger role as exit events for nonprofits than for-profits. Table 5 and Figure 1 show that this is not the case. Hospital closures are substantially more likely for for-profits, particularly after poor financial performance. On average, 1% of for-profit hospitals close each year (based on Table 2), and this frequency is 0.7 percentage points lower for nonprofits (based on column (10)). The gap is driven mostly by hospitals with poor financial performance, as illustrated in Figure 1, Panel B.

The lower sensitivity of nonprofit events to profit margins is to be expected if financial performance is a poor indicator of how a nonprofit is achieving its goals. For example, acquisitions could still be an important governance tool if they respond to underperformance along other relevant dimensions. To investigate this possibility, the regressions in Panels B, C, and D replace *Margin* with *Charity*, *Medicaid*, and *Quality*. The results do not support this hypothesis. *Medicaid* and *Quality* are not reliably associated with corporate events, and neither are their interactions with the nonprofit dummy. A notable exception is the negative and significant coefficient on *Quality* in the PE regression in Panel D (columns (4) and (5)), indicating that PE firms are more likely to intervene when service quality is

[37] One potential concern when interpreting this result is that nonprofits may be more resilient to local economic conditions and, thus, less likely to be acquired during a downturn. To examine this possibility, we augment the baseline specification by including county-year fixed effects and the interaction of country-level income with nonprofit status. We find that nonprofit system acquisitions are less sensitive to county-level income fluctuations, but the coefficient of the interaction between nonprofit status and margins remains of similar magnitude and statistical significance. Hence, resilience to local economic conditions cannot explain the lower sensitivity of nonprofits' control events to margins.

poor. The positive and significant interaction with the nonprofit dummy suggests that this effect applies only to acquisitions of for-profit hospitals, contrary to the hypothesis that quality matters more for nonprofits. However, this effect vanishes when including firm fixed effects.

The results on charity care in Panel C are more nuanced but are generally consistent with the other two panels. The regressions show that hospitals are more likely to be a target (both of systems acquisitions and PE investors) when their charity provision is *high*. This is contrary to the hypothesis that disciplinary takeovers target nonprofits that 'under-deliver' on non-financial goals (see, for example, the coefficient of 0.28 on *Charity* in column (1)). Note, however, that this effect is driven almost entirely by for-profit targets, with non-profit targets exhibiting no significant effects. For example, in column (2), the coefficient on *Charity* is 0.72, and the coefficient on the interaction of *Charity* with *Nonprofit* is -0.62, both significant at the 1% level.[38] These effects are illustrated in Figure 1, Panel C which plots the predicted probabilities of system acquisitions as a function of the hospital charity care separately for nonprofits and for-profits. The left panel shows no significant association for nonprofits; the right panel shows a large spike in system acquisitions for for-profits in the top quintile of charity care. This suggests that takeovers play a disciplinary role for for-profits (in the sense that for-profits that 'over-supply' charity from shareholders' perspective are being acquired), but that they have no analogous effect for nonprofits that diverge from their non-financial goals.[39] Finally, columns (7) to (9) of Table 5, Panel C (illustrated in Figure 1, Panel D) show that charity provision has no significant effect on nonprofit closures, but that for-profits in the bottom quintile of charity provision are somewhat more likely to be closed.

Table 5 estimates the frequencies of control events as a function of the previous-year performance. For completeness, Figure 2 illustrates the performance patterns in the years -3 through +3 around the event (to do so, we must limit the events to system acquisitions, for which the post-event performance can be observed). The results are generally consistent with those in Table 5: both, nonprofit and for-profit targets show declining profit margins leading up to the acquisition and a steady improvement thereafter. The non-financial measures show no consistent patterns for nonprofit targets: there is some evidence of declining quality after acquisitions though the decline begins already before the event. In contrast, for-profit targets exhibit discrete improvements in service quality accompanied by cuts in

[38] Charity care has no significant effect on nonprofit system acquisitions.

[39] This interpretation is supported in Figure 2, Panel C. The figure shows that charity care declines abruptly following acquisitions of for-profit targets (consistent with it being 'too high' prior to the event) but exhibit no change for nonprofit targets.

charity provision immediately after the event. This suggests that the (predominantly for-profit) acquirers of for-profit hospitals engage in major turnarounds to restore the financial viability of their targets. It is important to keep in mind that the performance changes after the events reflect a combination of selection and causal effects and, thus, cannot be interpreted as entirely causal. Moreover, the selection effects may be stronger for acquisitions of nonprofits because of the greater legal challenges that these transactions must overcome.[40]

In sum, we show that the likelihood of the control events is significantly lower for nonprofits, particularly after poor financial performance, suggesting that changes in control are less important in nonprofit governance. The events appear to be triggered by declines in profits, with drops in charity or service quality having no effect on events involving nonprofit targets. One reason for the lower takeover frequencies may be that, in the absence of shareholders, nonprofit insiders are better able to resist acquisitions to protect their careers. In addition, a transfer of control over a nonprofit may be more difficult to accomplish, particularly when it results in a change in the target's mission or organizational form. In either case, the threat to incumbent managers will be less severe.

6.3 What happens to boards and CEOs after corporate events?

In this section, we provide evidence on CEO and director turnover following the control events. The corporate finance literature has documented significant increases in executive turnover at target firms after merger announcements, ownership changes, and bankruptcies for for-profit firms. There is also evidence that CEOs who lose their jobs during such events are unlikely to find a comparable executive position in the future, suggesting a permanent setback in their careers. The literature (discussed in Section 6.1) has cited these findings to argue that acquisitions impose personal costs on executives, implying that the threat of being acquired has a disciplining effect.

The existing evidence on target executives' careers comes entirely from shareholder-owned firms, and in this section, we ask whether similar patterns are observed for nonprofits. The answer is not

[40] As we explain in Appendix D, any transfer-of-control event involving a change in a nonprofit's mission (or in the use of its restricted assets) is generally subject to the cy pres doctrine and, in most states, requires an approval by the court. To grant such approval, the court must conclude that carrying on the original mission (or the donor's original intent) is no longer practical for the nonprofit, implying that the change would occur anyway. For nonprofit acquisitions that pass the cy pres test, one would therefore expect some scaling back of the charitable purpose even if the transaction itself has not caused the decline. In Table A2, we show that conversions of nonprofits to for-profits (typically associated with acquisitions of nonprofit targets by for-profit systems) are associated with declines in *Medicaid* and *Quality*. These declines are consistent with the nonprofit targets being unable to meet their non-financial goals while remaining nonprofit, and with for-profit acquirers shifting the targets' strategy towards the shareholder-driven goals.

obvious as there are reasons to expect nonprofit hospital insiders to experience no (or more muted) career effects compared to a broad sample of for-profit firms. In the absence of shareholder pressure, nonprofit insiders might be better able to resist takeovers and, thus, gain personal concessions (such as job security) in exchange for willingness to give up control. It is also possible that governance considerations play a more limited role in hospital acquisitions undertaken for competitive reasons: based on evidence in health economics, market power appears to be a strong motive for takeovers in the healthcare space (Gowrisankaran et al., 2015; Barrette et al., 2022).

To investigate the frequencies with which nonprofit CEOs and directors lose jobs around changes in control, we construct a sample of nonprofit hospitals that are both in our AHA events sample and for which we have governance data from the IRS. Within this sample, we restrict it to hospitals that have either experienced no system acquisition (1,176 hospitals) or to hospitals that experienced at least one system acquisition (488 hospitals). If a hospital experienced multiple acquisitions, we only consider the observations around the first event. We focus on system events because in these cases, we can observe the CEO after the event. In this panel, we present regressions of CEO or board turnover on dummy variables indicating years from –3 to +3 and more than +3 around the acquisition event. The regressions also include hospital fixed effects and state-year fixed effects. Figure 3 shows coefficients on the year dummies and Table 6 shows the regression results. Based on the figure, both the CEO and board turnover increase sharply and significantly in the acquisition year and remain elevated for the subsequent two years. For example, the 'excess' CEO turnover is close to 10 percentage points in years 0 through 2, constituting a 83% increase relative to the sample average of 12 percentage points (Table 7). The increase is also large for board turnover: in year 0, an additional 5.5% of board members are replaced, compared to the average replacement rate of 13% (Table 7).

In Section 6.2, we show that system acquisitions are significantly more likely after poor financial performance, and prior literature has linked poor performance to increased CEO and director departures (we examine this relationship in detail in Section 7). To account for this possibility, Table 6, columns 3 and 4, reports turnover regressions that include financial performance as a control, alongside indicators for years –3 to 0 and 0 to +3 relative to the acquisition year. As expected, low profits are associated with significantly higher turnover frequencies for both the CEO and the board. Interestingly, however, the coefficients on the post-event dummies remain large and statistically

significant: they indicate increases in CEO turnover by 8.7 percentage points and board turnover of 4.1 percentage points immediately after the change-of-control events.[41]

These results support our premise that acquisitions of nonprofits can, in principle, play a disciplining role. This assumes that the events accelerate the insiders' departures from the target firms, and that such departures are personally costly to the insiders. The patterns we document support this interpretation: the departures of CEOs and board members increase sharply in the acquisition year and the increases exceed what would be expected based on the target's financial performance. It is worthwhile to note that our results are based the subset of events (system acquisitions) after which the target survives as a corporate entity, and that the effects may be stronger for mergers or closures, which result in a dissolution of the target and its board.

7 CEO compensation and turnover

As discussed in Section 4, nonprofit boards deal with complex objectives and, compared to for-profits, take on additional duties. In Section 5, we show that they are large (compared to for-profits), include large numbers of both independent and non-independent directors, and rarely compensate their directors. Based on Section 6, nonprofit boards face relatively weak external discipline from the market for corporate control. This section explores the nonprofit boards' decision making, focusing on their two key responsibilities: CEO compensation and turnover.

7.1 CEO compensation

7.1.1 Background

The standard view in the traditional governance literature is that compensation contracts help incentivize and attract CEOs, and that boards design them to maximize shareholder value. A prominent set of theories focuses on the incentive effects of CEO pay (Holmström and Milgrom (1987)). The key premise is that CEOs can create value by undertaking personally costly actions unobserved by the board. (For example, they can work harder, make better investment decisions, or

[41] In the Appendix Table A3, we examine changes in target CEO pay around acquisitions to understand better their incentives to resist or encourage acquisitions coming from incentive pay. We find that while target CEO pay increases after acquisitions (first two columns in Table A3), the effect is caused by new CEOs hired by the system to lead the acquired hospital. In contrast, the old (and surviving) target CEOs experience no significant changes in pay (last two columns in Table A3).

consume fewer perks.) The boards can induce CEOs to take efficient actions by tying their pay directly to value.[42]

While most of the literature on CEO pay deals with shareholder-owned corporations, the basic ideas can be applied to nonprofits. Taking the efficient contracting view, a nonprofit incentive contract should compensate managers based on how well they perform in achieving the nonprofit's objectives. Thus, the relevant performance signals should include measures of non-financial performance that the nonprofit's 'principals' care about. As before, we focus on two aspects of non-financial performance – the provision of charity and service quality – derived from the theories of nonprofits discussed in Section 2. The theories offer no guidance as to the relative weights on these measures in the incentive contract; what emphasis nonprofit boards place on the different goals is therefore an empirical question.

7.1.2 Results

We estimate the sensitivity of nonprofit CEO pay to performance for our sample of nonprofit hospitals. Table 7, Panel A shows descriptive statistics for CEO compensation in the full sample and the sub-sample after 2008. The IRS changed reporting requirements for CEO compensation, so that starting in 2009, hospitals are required to report separately compensation the CEO receives from its own organization and related organizations, and also 'other' compensation that includes deferred compensation and other non-taxable benefits.[43] Panel A shows that an average hospital CEO earns $628.3 thousand in the post 2008 period ($717.7 thousand including 'other' compensation).

To estimate the pay-for-performance sensitivities, we regress the log of CEO annual pay on measures of hospital performance, using the compensation for the full sample. We report the results in Table 8 and Figure 4. All regressions include state-by-year fixed effects to control for regional-level shocks and the 2008 change in reporting requirements. Consistently with the merger analysis, we use *Margin*, *Medicaid*, *Charity*, and *Quality* as measures of the hospitals' performance, and some regressions also include separately the three components of the quality index (the variables are described in Section

[42] Empirically, the structure of CEO pay is broadly consistent with these theories: annual pay responds positively to the firm's financial performance, and CEOs' stock-and-option portfolios gain automatically when firm value goes up (Edmans, Gabaix, and Jenter (2017)). For example, Edmans, Gabaix, and Jenter (2017) report that in 2014, an average CEO of a S&P 500 firm owns $67 million, and the numbers are $24 and $13 million for the mid-cap and small-cap firms.
[43] See instructions to Form 990: https://www.irs.gov/pub/irs-pdf/i990.pdf.

4.4 and Appendix A). Panel A of Table 8 shows results with and without firm fixed effects, whereas Panel B and Figure 5 show only results including firm fixed effects for brevity.[44]

Table 8, Panel A shows that CEO pay responds significantly to the hospital's profit margin. Based on Figure 4, increasing the margin from the bottom to the top quintile increases pay by 12 log points. Table 8, Panels A and B also show that the link to non-financial measures of performance is either weaker or close to zero. One exception is *Medicaid*: in column (2) of Panel A, which is significant at the 5% level. The regressions in Panel B show no evidence that charity or quality affects CEO pay: the relevant coefficients are small and insignificant. In contrast, the coefficients on *Margin* remain highly significant and have similar magnitudes to those in the full sample, while the coefficients on *Medicaid* remain positive but are not statistically significant.[45]

The next question is how CEO incentives differ across for-profits and nonprofits. For-profit hospitals generally do not disclose information on CEO pay, so to gain insight into these differences, we focus on CEOs of hospital systems. The evidence in Table 7, Panel B suggests that for-profit system CEOs have stronger overall pay-for-performance incentives than nonprofit system CEOs. The main source of the difference is that the for-profit CEOs tend to hold equity in their firms, so their wealth responds automatically to changes in firm value. Based on Table 7, Panel B, an average for-profit CEO holds equity stake in its firm worth $122.0 million, estimated as the sum of the value of the stock and in-the-money options (the median is $27.2 million). Assuming a portfolio delta of 0.8 for the median CEO, a 1% increase in shareholder value increases the value of his equity by $218 thousand (=0.8*1%*$27.2 million). This effect is absent for nonprofit CEOs.

The sample sizes for systems do not allow us to estimate the sensitivity of annual CEO pay to performance as we do in Table 8 for hospitals. It is worth noting, however, that based on the last column in Table 7 Panel B, the level of annual CEO pay is significantly higher for for-profits than for

[44] The number of observations in Panel B is smaller, as we include performance metrics with more limited data. All performance measures are lagged by one year relative to the measurement of salaries.

[45] The lack of CEO pay sensitivity to non-financial performance metrics is not due to *Margins* being a sufficient statistic for other performance metrics. In unreported results, we re-ran the analysis excluding *Margins* and confirmed the lack of significant correlation between non-financial performance metrics and CEO pay.

nonprofits of similar size. This suggests that the dollar sensitivity of annual pay to performance is also higher.[46]

It is important to note that the pay arrangements we describe are not necessarily sub-optimal for nonprofits. First, because of the nonprofits' non-financial objectives, we would expect their emphasis on financial performance to be weaker. Second, non-financial performance is harder to measure, which makes its use in contracting difficult. Our point is, however, that, precisely because of these frictions, the 'automatic' alignment of CEOs with their 'principals' is harder for nonprofits to achieve, and as a result, nonprofit boards need to rely more on direct monitoring to discipline their CEOs. Direct monitoring, in turn, is challenging given these boards' larger size and, arguably, weaker and conflicting incentives, which we document in Section 5.

7.2 CEO and board turnover

7.2.1 Background

Hiring and firing of CEOs are one of the key responsibilities of corporate boards, including in nonprofits. The pervasive finding in the literature is that CEO departures in for-profit firms are often preceded by poor financial performance, such as low profitability and stock returns, suggesting that turnover is a meaningful source of CEO incentives (Jenter and Lewellen (2021)). A common approach to interpret these sensitivities is to view turnover as a consequence of the board's search for the 'ideal' CEO. The board hires a CEO of uncertain quality and learns it over time by observing firm performance. The turnover occurs once the board's estimate of quality drops below a certain threshold, determined, among other things, by the search costs and the pool of available candidates (Hermalin and Weisbach (1998), Taylor (2010)).

Whether turnover is primarily a source of incentives or a consequence of the board's learning process, the implication is that turnover frequency should increase after performance declines. This reasoning applies equally to for-profits and nonprofits, assuming that nonprofit boards care about their firms' objectives. Guided by this framework, we estimate the sensitivity of CEO turnover in nonprofit hospitals to measures of hospital performance. As with compensation, we expect that well-

[46] Assuming that the effect of an increase in margins on the CEO's log(annual pay) we estimate in Table 8 applies also to for-profit and nonprofit systems, a 1% increase in margins translates into $21.0 thousand increase in annual pay for a nonprofit system CEO (=0.006*$3.5 millions) and into $44.4 thousand increase in annual pay for a for-profit CEO (=0.006*$7.4 millions).

functioning nonprofit boards would will put some weight on both, the financial and nonfinancial measures of performance, such as the provision of charity and service quality.

7.2.2 Results

The CEO turnover regressions are reported in Table 9 and illustrated in Figure 6. Table 9, Panel A includes a probit regression (column 1) and OLS regressions with and without hospital fixed effects (columns 2 and 3). For the probit regression, we report marginal effects and their standard errors. Panel B - which includes *Quality* measures and *Charity* - presents only OLS regressions with hospital fixed effects for brevity. Based on Panel A, CEO turnover responds significantly to the hospital's financial performance. The magnitudes are illustrated in Figure 5: moving from the top to the bottom performance quintile, the likelihood of CEO turnover increases from 10.8 to 15.5%.[47] We obtain similar turnover-performance sensitivities for standalone hospitals and hospitals that are part of systems though the overall turnover level is higher for system CEOs, possibly because of job switches within systems (Figure A2, Panel B).

As with CEO compensation, we find no significant relation between turnover and most non-financial performance metrics (Table 9, Panel A for Medicaid and Panel B for other measures). However, in contrast to CEO compensation, CEO turnover responds significantly to a measure of customer satisfaction (column 3 in Panel B). A one-standard-deviation decline in the fraction of the surveyed patients dissatisfied with the hospital is associated with a 2.1 percentage point decline in the likelihood of CEO turnover.

Finally, in Table 10 and Figure 6, we repeat the tests with director turnover instead of CEO turnover as the dependent variable. Following, Eldenburg et al. (2003), we measure director turnover in year t as the sum of the number of new directors in year t and the outgoing directors in year t-1, scaled by (2 * the number of all directors in year t-1). We find qualitatively similar results to those for CEO turnover though the magnitudes of the effects are much more muted.[48] Based on Figure 6, hospitals in the bottom quintile of financial performance exhibit an increase in director turnover of 1 percentage point relative to those in the top quintile (the average director turnover in Table 7 is 13%).

[47] We do not attempt to classify turnovers as forced and voluntary based on public announcements or CEO age because, as shown in Jenter and Lewellen (2021), these classifications are often misleading. Instead, following their approach, we interpret the spread between the total turnover at the low vs. high levels of performance as measuring the extent to which turnover is induced by poor performance.

[48] Yermack (2004) also estimates more muted turnover-performance sensitivities for directors vs. the CEOs within a large sample of public for-profit firms.

These estimates suggest that the possibility of dismissal is not a significant source of nonprofit director incentives. Interestingly, when we split hospitals based on whether they belong to a system, we find that the turnover-performance sensitivity is twice as large for non-system directors, but close to zero for system directors. This result is consistent with the boards of system hospitals giving up some of the control to the parent boards.

In sum, we find that nonprofits dismiss CEOs (and, to some degree, directors) in response to poor financial performance and patient dissatisfaction, but that other non-financial measures have limited or no effect on turnover. Three implications are worth noting. First, the fact that turnover is strongly linked to financial measures suggests that nonprofit boards pay close attention to their hospitals' ability to generate 'sufficient' profits (that is, profits above a relatively low threshold) and are willing to punish CEOs who do not deliver them. Second, nonprofit CEO turnover is an important source of CEO incentives. The reliance on the threat of dismissal suggests that nonprofit boards incentivize CEOs to avoid financial losses while offering relatively weak rewards for above-average gains. Such asymmetry may be consistent with a nonprofit's mission: while too-low profits jeopardize a firm's survival, too-high profits may be a sign that the CEO under-delivers charity or extracts rents from patients. The third observation is that direct measures of the non-financial performance (with the exception of one measure) have no effect on the boards' decisions to fire a CEO. This reinforces our earlier point that these nonfinancial goals are more difficult to incorporate into a nonprofit's governance practices. The consequence might be that, absent active engagement from the board, these non-financial goals will receive less weight in the CEOs' decision making.

7.2.3 Board and CEO changes around the implementation of the ACA Medicaid expansion

The Affordable Care Act (ACA) represented the most significant U.S. healthcare reform since the introduction of Medicare and Medicaid in 1965. One of the key provisions of the ACA was that it allowed expanded Medicaid access for households with income below 138% of the Federal Poverty Line (FPL).[49] Some states opted not to expand Medicaid because the expansion will eventually be funded partly by the state rather than the Federal government. Starting 2014, 25 states opted for Medicaid expansion, and 15 other states expanded Medicaid later on (additional details are in the heading of Table A.4). Duggan et al. (2022) show that Medicaid revenue increased significantly in the

[49] Before its passage, Medicaid eligibility threshold varied across states but usually covered individuals within 41% of the FPL (Duggan et al., 2019).

affected hospitals, and that the increase substituted for the locally-funded safety net programs (see also Dranove et al. (2016)). We confirm these patterns in our data using a difference-in-difference approach: In Table A4 in the appendix, we find that the staggered expansion of Medicaid coverage caused hospitals to increase the fraction of Medicaid inpatient days by 3.1 percentage points and led to a 1.2 percentage points decline in their charity expenditures (this compares to sample means of 18.4% and 1.8%). Moreover, based on triple-difference specifications, we find that the effects were twice as large for nonprofits as for-profit hospitals.

We test whether this large shock to the nonprofit hospitals' business environment caused changes to the size, structure, or composition of their boards of directors. Such changes might have occurred if the shock affected the hospitals' demand for director expertise, for example, by making director experience dealing with government programs more valuable relative to experience with fundraising (or the potential to donate in the future). The tests in Table A5 do not support this hypothesis: we find no evidence that either the board structure, its size, or its composition changed as a result of the shock. We also explore the effects of the event on CEO turnover and compensation and, again, find no significant effects. Thus, it appears that, in spite of the large and permanent shift in how nonprofit hospitals finance their charity services, their governance structures remained unaffected. These results are consistent with our earlier conclusion that nonprofit hospital boards are relatively stable and exhibit weak (or no) response to key measures of hospital performance or other exogenous shocks to their business models.

8 Conclusions

The nonprofit organizational form is prevalent in the healthcare sector, but compared to for-profits, nonprofit governance has received little attention in corporate finance. This paper aims to gain a better understanding of the governance tools nonprofits use to align the interests of their decision-makers with those of their principals: patients, donors, and taxpayers. We examine both the internal governance mechanisms (boards of directors, CEO incentive pay and turnover) and the external mechanisms (the market for corporate control). Nonprofit boards have similar monitoring and advising responsibilities to for-profit boards but must deal with multi-dimensional objectives and often take on fundraising tasks. The boards' large size, employee involvement, lack of director incentive pay, lower industry expertise of outside directors, and weak external oversight (other than by the states' attorneys general and the IRS) suggest greater impediments to effective monitoring compared to for-profit boards.

In addition to boards, we examine the role of the market for corporate control in disciplining managers of nonprofit firms. While nonprofits have no owners, they are subject to takeover threats in the sense that an 'acquirer' can gain de facto control over the target's board. Such transactions can, in principle, have disciplining effects: we find that they are followed by spikes in CEO and director departures at the target firms. However, the market for corporate control is less active for nonprofits: a financially underperforming nonprofit is half as likely to be acquired or closed than a similar for-profit, and underperformance based on non-financial measures triggers no disciplining events.

Finally, we study incentive compensation and turnover of nonprofit CEOs. We find that nonprofit CEO pay and turnover are linked to their firms' financial performance but exhibit no (or weak) sensitivity to non-financial measures: for the latter, we consider the quality of medical services, patient satisfaction, and provision of charity. In contrast, the pay-for-performance sensitivity of for-profit CEOs in the healthcare sector (with respect to measures relevant for shareholders) is strong, largely because for-profit CEOs hold significant stakes in their firms.

It is important to note that nonprofits exist for a reason and may be the preferred organizational form in some industries, including healthcare. Thus, the governance structures we observe can be viewed as the best response to the constraints faced by nonprofits or, more broadly, by organizations with a stakeholder focus. Our analysis suggests, however, that the governance structures that emerge in nonprofit organizations lack the traditionally 'desirable' features, such as nimble boards, an active market for corporate control, and a tight link between the managers' wealth and the interests of the firm's principals. Moreover, we find little evidence that a relative weakness in one area is offset by a relative strength in another. Within the traditional governance framework, a weaker incentive alignment implies that the firm will have a more challenging time achieving its goals, whatever they might be. This suggests that stakeholder-focused organizations must rely on 'less traditional' governance mechanisms, such as selecting intrinsically motivated employees or cultivating corporate culture (Graham et al., 2022). In our view, a better understanding of these mechanisms is an important area of future research, and its relevance extends beyond nonprofits.

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Appendix A: Variables definition.

Financial variables from Form 990	
Revenue	Total program service revenues (Part I).
Assets	Total assets (Part I).
Margin	(Total revenues – Total expenses) / Lagged total revenues (Part I).
Performance Quintiles	Quintiles dummies formed based on *Margin*. Ranking is done within year and hospital size bin, with hospitals split into size bins each year at the median of service revenues.
Investment	Growth rate of fixed assets. Fixed assets is Land, buildings, and equipment less accumulated depreciation (Part X).
Rev. Growth	Growth rate of service revenues.
Donations	All contributions to the hospital, except government grants, divided by revenue (Part I)
Grants	Ratio of government grants to hospital revenue (Part I)
Variables from the AHA database and corporate events	
Admissions	Total hospital admissions.
Medicaid	Fraction of Medicaid inpatient days to total inpatient days.
Dummy system	Equals one for hospitals that are part of systems and zero otherwise.
Dummy rural	Equals one for hospitals located in rural areas and zero otherwise.
System acquisition	Equals one for the last year before a target hospital is acquired by a system and zero otherwise. Our initial list of system acquisitions comes from Gao et al. (2022) who extend the sample from Cooper et al. (2019). Cooper et al. (2019) gather a sample of system acquisitions from 2001 to 2014 from the AHA annual surveys and complement it with information from FactSet, SDC, and Irving-Levin Associates. Gao et al. (2022) extend this list to 2018 using various sources, including SDC, FactSet, and Becker's Hospital Review. We initially determine whether the acquiring system is for-profit or nonprofit based on the organizational form of the majority of its hospitals in the year of the transaction. Finally, through internet searches, we manually cross-check all the acquisition years and the ownership status (nonprofit/for-profit) of both the target and the acquiring system.
PE acquisition	Equals one for the last year before a target hospital is subject to a private-equity event and zero otherwise. Our initial list of private-equity events follows from Gao et al. (2022). Through internet searches, we manually classify PE-events into system events and non-system events. A PE system event is where a target hospital is acquired by a PE-backed hospital system (i.e., these system events are a subset of the for-profit system acquisitions described above). A non-acquisition PE event is where a for-profit hospital, or its parent system, receives a private-equity capital infusion without being fully acquired.
Merger	Equals one in the last year the target hospital appears on the AHA file, and the AHA lists "Merged" as the reason for deletion (and zero otherwise). In cases in which neither of the merging hospitals survive the merger (i.e., a newly merged entity is formed), we label the smaller merging hospital (based on total beds or, if not available, total personnel) as the target.

Closure	Equals one in the last year the target hospital appears on the AHA file, and the AHA lists "Closed" as the reason for deletion (and zero otherwise).
Financial variables from HCRIS (for M&A analysis)	
Revenue	Net patient revenue (Worksheet G3, Line 3).
Assets	Total assets (Worksheet G, Line 36).
Margin	Net income / Total revenue. Net Income comes from Worksheet G3, Line 29. Total revenue is the sum of net patient revenue and other revenue (Worksheet G, Lines 3 and 25).
Asset growth	Growth in total assets.
Charity	Cost of charity care / Total operating expenses. Cost of charity care comes from Worksheet S-10, Line 23, and is reported consistently since 2011. Total operating expenses come from Worksheet G-2, Line 43.
CEO and board variables for nonprofits from Form 990	
Directors	Number of directors (see details in Appendix C.)
Non-independent directors	Non-independent directors based on Part I of Form 990.
Executives	Directors that are executives (estimated; see Appendix C).
Non-exec. employees	Non-executive employee directors (estimated; see Appendix C).
Other non-independent	Other non-independent directors (estimated; see Appendix C).
Director compensation	Estimated annual basic retainer for non-officer directors ($ thousands). We estimate it as follows: (1) Create a list of persons flagged as individual trustees or directors and non-officers in Part VII of the Form 900 and compute their total compensation as listed in Part VII. (2) Compute the number of directors on that list that receive each specific amount as total compensation in a given year. (3) Select the amount received by the largest number of directors as an estimate of the basic retainer, requiring a minimum of three directors. Step (3) assumes that the number of directors who receive the basic retainer (if any) is larger than the number of directors who receive any other amount, for example as a compensation for other services or employment.
CEO turnover	Dummy variable =1 for the last year of CEO tenure.
Director turnover	Director turnover (t) = (Number of new directors (t) + Number of outgoing directors (t-1)) / (2 * (Number of directors (t-1)) (see, Eldenburg et al. (2003)). Director turnover is estimated for the full sample period of 2000-2018. Because Form 990 incudes indicators for trustees and directors consistently only starting in 2009, we identify directors for the full sample using titles provided in the form for the full sample period.
CEO comp.	CEO compensation as reported on the IRS 990 filing ($ thousands). The statistics for compensation in Table 7 are reported separately for years 2000-2008 and 2009-2018 to account for the change in the IRS reporting requirements in 2008. *CEO comp. pre 2009* includes CEO compensation reported in the pre-2009 filings. *CEO comp. post 2008* includes CEO compensation received from own organization and related organizations as reported in the post-2008 filings; *CEO comp. post 2008 (incl. other)* includes also other compensation such as deferred compensation and non-taxable benefits. *CEO comp full sample* (used in all regressions) combines CEO comp. pre 2009

	and CEO comp. post 2008. CEO compensation variables are set to missing if they are either missing or zero on the 990 filing.
CEO tenure	Number of years from the year the CEO took office or, if this information is not available, from the first year the CEO appears in the database.
Multiple Positions	Dummy set to one if the CEO holds the position in more than one organization in that year.
CEO and board variables for for-profits	
Directors	Number of directors reported on BordEx.
Non-independent directors	Non-independent directors as reported in the proxy statement, except that directors associated with private-equity investors are coded as independent.
Executives	Directors that are executives based on the proxy statements.
Non-exec. employees	Non-executive employee directors based on the proxy statements.
Other non-independent	Other non-independent directors based on the proxy statements.
CEO comp.	CEO compensation corresponding to the Execucomp variable Total Compensation (*TDC1*), which includes salary, bonus, the value of option and stock awards, deferred compensation, non-equity incentive plan compensation, and other compensation.
CEO equity	CEO stock and option holdings in the firm. Option holdings correspond to the sum of Execucomp variables Value Of In the-Money Unexercised Unexercisable Options ($)(*OPT_UNEX_UNEXER_EST_VAL*) and Estimated Value of In-the Money Unexercised Exercisable Options ($) (*OPT_UNEX_EXER_EST_VAL*). Stock holdings are calculated as the closing price for the fiscal year times Shares Owned - Options Excluded (*SHROWN_EXCL_OPTS*).
Director compensation	We hand-collect data on independent directors' compensation from the for-profit systems' proxy filings. We report director compensation that includes the cash retainer and the fair value of options and restricted stock awards but excludes additional director compensation, for example, for serving as a board chair or a committee chair.
Director ownership	We hand-collect the number of shares owned by each independent director from the beneficial ownership section of the form Def14A. We multiply the number of shares by the stock price on the date reported in the section to get the directors' ownership in dollar terms.
Quality variables	
Mortality (low) and Readm. (low)	The readmission and mortality data come from Center for Medicare and Medicaid Services (CMS). We use the 30-day risk-adjusted mortality and readmission rates for heart attacks (AMI), heart failures (HF) and pneumonia (PN). The CMS reports this data annually for the past 36 months. We average the mortality rates (or the readmission rates) across the three conditions by hospital-year and then normalize them by year (across all hospitals, including government owned) to have a mean of zero and a standard deviation of one. Mortality (low) and Readm. (low) are the normalized measures multiplied by -1
Not recom. (low)	Patient satisfaction data comes from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) data, administered by the CMS to a random sample of adult patients. The data covers survey results for 12-month periods. Patient dissatisfaction is measured as the percent of surveyed

	patients that do not recommend the hospital. This measure is also normalized by year to have mean zero and standard deviation of one. Not recom. (low) is the normalized measures multiplied by -1. We exclude hospital-years with less than 20% response rates
Quality Index	Average of *Mortality (low)*, *Readm. (low)*, and *Not recom. (low)* by hospital-year.

Appendix B

IRS Form 990 - Hospital vs System data

IRS Form 990 are reported at the Employment Identification Number (EIN) level. Standalone hospitals have their own EINs. System hospitals can be reported at the hospital and system (parent) levels. Consider Christus Health system as an example. Its data is reported at the system level (EIN 76-0590551) and the hospital level (e.g., Christus Good Shepard Medical Center, EIN 75-0974351; Christus Santa Rosa, EIN 74-1109665). Below are excerpts of the forms. The system has its own CEO and board of directors, different from the hospital CEOs and board of directors.

Christus Health system (EIN 76-0590551)

efile Public Visual Render | ObjectId: 201921349349306412 - Submission: 2019-05-14 | TIN: 76-0590551

Form **990**

Department of the Treasury
Internal Revenue Service

Return of Organization Exempt From Income Tax

Under section 501(c), 527, or 4947(a)(1) of the Internal Revenue Code (except private foundations)

▶ Do not enter social security numbers on this form as it may be made public.

▶ Go to www.irs.gov/Form990 for instructions and the latest information.

OMB No. 1545-0047

2017

Open to Public Inspection

A For the 2018 calendar year, or tax year beginning 07-01-2017 , and ending 06-30-2018

B Check if applicable:
☐ Address change
☐ Name change
☐ Initial return
☐ Final return/terminated
☐ Amended return
☐ Application pending

C Name of organization
Christus Health
% KIM REYNOLDS
Doing business as
See Schedule O

Number and street (or P.O. box if mail is not delivered to street address) | Room/suite
919 Hidden Ridge Drive

City or town, state or province, country, and ZIP or foreign postal code
Irving, TX 75038

D Employer identification number
76-0590551

E Telephone number
(469) 282-2000

G Gross receipts $ 2,168,774,070

F Name and address of principal officer:
ERNIE SADAU
919 HIDDEN RIDGE DRIVE
IRVING, TX 75038

H(a) Is this a group return for subordinates? ☐ Yes ☑ No

H(b) Are all subordinates included? ☐ Yes ☐ No
If "No," attach a list. (see instructions)

H(c) Group exemption number ▶ 0928

I Tax-exempt status: ☑ 501(c)(3) ☐ 501(c) ( ) ◀ (insert no.) ☐ 4947(a)(1) or ☐ 527

J Website: ▶ www.christushealth.org

K Form of organization: ☑ Corporation ☐ Trust ☐ Association ☐ Other ▶

L Year of formation: 1999

M State of legal domicile: TX

Part I **Summary**

Activities & Governance

1 Briefly describe the organization's mission or most significant activities:
SUPPORTING THE HEALTH CARE MINISTRIES OF THE SPONSORING CONGREGATIONS IN EXTENDING THE HEALING MINISTRY OF JESUS CHRIST IN CONFORMITY WITH THE ROMAN CATHOLIC CHURCH.

2 Check this box ▶ ☐

3	Number of voting members of the governing body (Part VI, line 1a)	18
4	Number of independent voting members of the governing body (Part VI, line 1b)	14

Board size: 18

Page 8

Form 990 (2017) Page **8**

Part VII **Section A. Officers, Directors, Trustees, Key Employees, and Highest Compensated Employees** *(continued)*

(A) Name and Title	(B) Average hours per week (list any hours for related organizations below dotted line)	(C) Position (do not check more than one box, unless person is both an officer and a director/trustee)						(D) Reportable compensation from the organization (W-2/1099-MISC)	(E) Reportable compensation from related organizations (W-2/1099-MISC)	(F) Estimated amount of other compensation from the organization and related organizations
		Individual trustee or director	Institutional Trustee	Officer	Key employee	Highest compensated employee	Former			
(18) DAVID STRONG	24.0	X						4,750	0	0
DIRECTOR (EFF 01/2018)	0.0									
(19) FATHER STEPHEN WORSLEY	24.0	X						0	0	0
DIRECTOR (eff 01/2018)	0.0									
(20) SISTER YOLANDA TARANGO	1.0	X						0	0	0
DIRECTOR (EFF 01/2018)	0.0									
(21) Ernie W Sadau	40.0	X		X				5,214,131	0	1,015,418
PRESIDENT/CEO	0.0									
(22) RICHARD L CLARKE	1.0	X						22,133	0	0
DIRECTOR (term 12/2017)	0.0									

CEO: Ernie Sadau (Total Comp -incl. other: $6,229,549)

Christus Good Shepard Medical Center (EIN 75-0974351)

efile Public Visual Render | ObjectId: 201902279349301990 - Submission: 2019-08-15 | TIN: 75-0974351

Form **990**

Department of the Treasury
Internal Revenue Service

Return of Organization Exempt From Income Tax

Under section 501(c), 527, or 4947(a)(1) of the Internal Revenue Code (except private foundations)

▶ Do not enter social security numbers on this form as it may be made public.

▶ **Go to *www.irs.gov/Form990* for instructions and the latest information.**

OMB No. 1545-0047

2017

Open to Public Inspection

A For the 2018 calendar year, or tax year beginning 10-01-2017 , and ending 09-30-2018

B Check if applicable:
- ☐ Address change
- ☐ Name change
- ☐ Initial return
- ☐ Final return/terminated
- ☐ Amended return
- ☐ Application pending

C Name of organization
CHRISTUS Good Shepherd Medical Center
% KARLA BOUNDS

Doing business as
SEE SCHEDULE O

Number and street (or P.O. box if mail is not delivered to street address) | Room/suite
700 E MARSHALL AVE

City or town, state or province, country, and ZIP or foreign postal code
LONGVIEW, TX 75601

D Employer identification number
75-0974351

E Telephone number
(903) 315-4000

G Gross receipts $ 326,999,998

F Name and address of principal officer:
MICHAEL CHEEK
700 E MARSHALL AVE
LONGVIEW, TX 75601

H(a) Is this a group return for subordinates? ☐ Yes ☑ No

H(b) Are all subordinates included? ☐ Yes ☐ No
If "No," attach a list. (see instructions)

H(c) Group exemption number ▶

I Tax-exempt status: ☑ 501(c)(3) ☐ 501(c) ( ) ◀ (insert no.) ☐ 4947(a)(1) or ☐ 527

J Website: ▶ WWW.CHRISTUSHEALTH.ORG/GOOD-SHEPHERD/MARSHALL

K Form of organization: ☑ Corporation ☐ Trust ☐ Association ☐ Other ▶

L Year of formation: 1954

M State of legal domicile: TX

Part I Summary

1 Briefly describe the organization's mission or most significant activities:
TO SERVE THE COMMUNITY WITH RESPECT TO PROVIDING HEALTHCARE SERVICES AND HEALTHCARE EDUCATION REGARDLESS OF RACE, SEX, CREED, NATIONAL ORIGIN, HANDICAP, AGE OR ABILITY TO PAY.

Governance

2 Check this box ▶ ☐

3	Number of voting members of the governing body (Part VI, line 1a)	15
4	Number of independent voting members of the governing body (Part VI, line 1b)	11

Board size: 15

☐ Check this box if neither the organization nor any related organization compensated any current officer, director, or trustee.

(A) Name and Title	(B) Average hours per week (list any hours for related organizations below dotted line)	(C) Position (do not check more than one box, unless person is both an officer and a director/trustee)						(D) Reportable compensation from the organization (W-2/1099-MISC)	(E) Reportable compensation from related organizations (W-2/1099-MISC)	(F) Estimated amount of other compensation from the organization and related organizations
		Individual trustee or director	Institutional Trustee	Officer	Key employee	Highest compensated employee	Former			
(1) R BLAIR ABNEY VICE CHAIRMAN	1.5 0.0	x		x				0	0	0
(2) VALERIE ALLMAN MD DIRECTOR	30.0 10.0	x		x				0	251,939	9,877
(3) RUSSELL J COLLIER PRESIDENT (THRU 1/18)	1.0 4.0	x		x				0	380,156	9,723
(4) KEN CUNNINGHAM SECRETARY	1.5 38.5	x		x				0	751,064	58,662
(5) KELLYN DRAYER BOARD CHAIRMAN	4.0 5.25	x		x				0	0	0
(6) GAYLE ENGLISH DIRECTOR	1.0 3.75	x						0	0	0
(7) TODD HANCOCK GSHS PRESIDENT/CEO	1.0 39.0	x		x				0	662,266	114,579

CEO: Todd Hancock (Total Comp -incl. other: $776,845)

Christus Santa Rosa (EIN 74-1109665)

efile Public Visual Render | ObjectId: 201901349349303160 - Submission: 2019-05-14 | TIN: 74-1109665

Form **990**

Department of the Treasury
Internal Revenue Service

Return of Organization Exempt From Income Tax

Under section 501(c), 527, or 4947(a)(1) of the Internal Revenue Code (except private foundations)

▶ Do not enter social security numbers on this form as it may be made public.

▶ **Go to *www.irs.gov/Form990* for instructions and the latest information.**

OMB No. 1545-0047

2017

Open to Public Inspection

A For the 2018 calendar year, or tax year beginning 07-01-2017 , and ending 06-30-2018

B Check if applicable:
- ☐ Address change
- ☐ Name change
- ☐ Initial return
- ☐ Final return/terminated
- ☐ Amended return
- ☐ Application pending

C Name of organization
Christus Santa Rosa Health Care Corporation
% STEPHANIE PARKER
Doing business as
SEE SCHEDULE O

Number and street (or P.O. box if mail is not delivered to street address): 333 N SANTA ROSA STREET
Room/suite:

City or town, state or province, country, and ZIP or foreign postal code
San Antonio, TX 78207

D Employer identification number
74-1109665

E Telephone number
(210) 321-8000

G Gross receipts $ 660,762,609

F Name and address of principal officer:
DEAN ALEXANDER
333 N SANTA ROSA STREET
San Antonio, TX 78207

H(a) Is this a group return for subordinates? ☐ Yes ☑ No

H(b) Are all subordinates included? ☐ Yes ☐ No
If "No," attach a list. (see instructions)

H(c) Group exemption number ▶ 0928

I Tax-exempt status: ☑ 501(c)(3) ☐ 501(c) ( ) ◀ (insert no.) ☐ 4947(a)(1) or ☐ 527

J Website: ▶ https://www.christushealth.org/santa-rosa

K Form of organization: ☑ Corporation ☐ Trust ☐ Association ☐ Other ▶

L Year of formation: 1985

M State of legal domicile: TX

Part I **Summary**

es & Governance

1 Briefly describe the organization's mission or most significant activities:
SUPPORTING THE HEALTH CARE MINISTRIES OF THE SPONSORING CONGREGATIONS IN EXTENDING THE HEALING MINISTRY OF JESUS CHRIST IN CONFORMITY WITH THE ROMAN CATHOLIC CHURCH.

2 Check this box ▶ ☐

3 Number of voting members of the governing body (Part VI, line 1a) . . . . . 3 | 12

4 Number of independent voting members of the governing body (Part VI, line 1b) . . . . . 4 | 11

Board size: 12

(10) Ray Still Director	1.0 0.0	X						0	0	0
(11) J Michael Belz vice chair	1.0 0.0	X		X				0	0	0
(12) Elaine Mendoza Director/Chair	1.0 0.0	X		X				0	0	0
(13) KAREN DUNAVAN SECRETARY (term 12/2017)	40.0 0.0			X				76,565	0	6,791
(14) Tammy Rivers Secretary (Eff 1/2018)	40.0 0.0			X				5,000	0	0
(15) Dean Alexander President/CEO	40.0 0.0			X				0	401,215	63,547

CEO: Dean Alexander (Total Comp -incl. other: $464,762)

Appendix C

Classification of nonprofit directors.

We classify nonprofit directors into non-independent, executives, non-executives employees, and other non-employee using information in Part VII and Part I of the Form 990 filings as follows.

1) We start with a list of an organization's *Directors*, defined as all persons listed in Part VII and flagged as "Individual Trustee or Director."

2) We obtain the number of *Non-independent* directors from Part I of Form 990 as the differences between the "Number of voting members of the governing body" and the "Number of independent voting members of the governing body." When this difference is less than zero (16 cases), we set it to zero; when it is larger than the number of all directors, we set it to *Directors* (6 cases).

3) We consider a director to be also the organization's *Executive* if he or she is flagged as a director and an 'Officer' in Part VII of the form, and if his/her total annual compensation exceeds $50,000 for hospitals and $65,000 for systems. Based on the IRS definition and our inspection of director titles, 'Officers' include the organization's top executives, such as CEO, president, or CFO, but can also include directors who earn no compensation but hold titles of a board chair, treasurer, or secretary. We filter out these directors by imposing the compensation requirement. We label directors who earn over $50,000 ($65,000 for systems) but are not 'Officers' as *Non-executive employee* directors. We choose the $50,000 ($65,000 for systems) cutoff because our estimate of maximum retainer for a nonprofit board member in our sample is $45,000 for hospitals and $63,000 for systems (see Appendix A, Director compensation).

4) We sum up the numbers of all directors, executive directors, and non-executive employee directors by organization-year. We impose two additional filters on the data to eliminate reporting inconsistencies and errors: we drop observations where (1) *Directors* is smaller than the 1st percentile or larger than the 99th percentile of the overall sample; or (2) the absolute value of the difference between *Directors* and the "Number of voting members of the governing body" reported in Part I of Form 990 is larger than 20% of the average of the two variables. These two filters reduce the sample from 15,305 to 13,581. This number drops to 13,343 in Table 3, where we also require that we can identify the CEO for that organization-year.

5) Finally, we estimate the number of *Other non-independent* directors as follows. (1) We start with the number of all independent directors and subtract from it the numbers of the other two categories (executive and non-executive employee directors). (2) In cases in which this number is less than zero

(1,152 out of 15,305 observations), we reduce the number of non-executive employee directors and executive directors (in that order), so that the sum of all three categories of non-independent directors is consistent with that disclosed in Part I (see step 2).

Appendix D

Mergers and Acquisitions in the Nonprofit Sector: Institutional Background

Business combinations involving nonprofit firms are governed by different legal rules than the more familiar for-profit transactions though their economic consequences are often similar. The legal literature distinguishes three basic types of non-profit business combinations: member substitutions, mergers, and asset purchases or sales. Member substitutions – the most common of the three – are transactions whereby the acquirer becomes the (usually sole) member of the nonprofit target (or, alternatively, a newly-formed 'parent' becomes a sole member of both, the target and the acquirer). The literature often compares these transactions to stock purchases in the context of for-profits and describes the resulting structure as akin to a parent-subsidiary structure. While the parents in such entities do not own their subsidiaries' shares, they exert de-facto control as the subsidiaries' sole voting members.[50] The transfer of control to the parent is accomplished by an amendment to the target's bylaws and articles of incorporation. After the transaction, the original target corporation, including its contractual relationships, is preserved.

The two other forms of business combinations used by nonprofits are mergers and asset purchases (or sales). Most state nonprofit corporation acts allow nonprofits to engage in these transactions with other nonprofits and for-profits. The merger (or sale) process is, in many respects, analogous to that involving for-profits: it includes negotiations and a signing of a merger (or sale) agreement, and in most states, it requires approvals of the respective boards (or members, if any). In a typical merger, one target entity ceases to exist, and the surviving entity assumes the target's assets and liabilities (alternatively, both entities may be absorbed by a newly formed surviving entity).

Setting aside these similarities, business combinations involving nonprofits are, in many ways, distinct. First, transactions between nonprofits typically do not result in cash transfers to the acquired entity at closing. Instead, a nonprofit acquirer may promise to commit capital in the future, such as investing in facilities or patient services that benefit the target.[51] Second, the target and the acquirer

[50] The parent may also have the right to determine the target's board of directors without being formally a member.
[51] For example, Ballard Health as part of its acquisition of two hospitals in Virginia in 2021, committed $310 million 'to improve health and healthcare for the areas served by each hospital' (David Muoio, Fierce Healthcare, November 22, 2021). For-profit Community Health Services' (CHS) acquisition of non-profit hospitals from Empire Health System provides another example. In 2008, CHS acquired the hospitals and committed to provide charity care that meet or exceed those of Eastern Washington. However, in 2017, the Empire Health Foundation filed a lawsuit against CHS accusing them of breach of contract arguing they have failed to provide up to 110 million worth of charity care (https://www.bizjournals.com/nashville/news/2017/06/13/lawsuit-accuses-chs-of-failing-to-provide-up-to.html).

often negotiate over the degree of autonomy that the target retains after the transaction. Thus, the resulting affiliation agreement may limit the 'reserve powers' of the acquirer with respect to the target, or it may allow the target directors to sit on the acquirer's board.

Third, the deals can face considerable legal hurdles when they result in a dissolution of a nonprofit or a change in its charitable purpose, or when they affect the use of the nonprofit's donor-restricted assets. In such cases, many states require that the court approves such transactions, and that the surviving entity carries on activities as close as possible to the nonprofit's original purpose. (According to the so-called cy press doctrine courts can, under certain conditions, modify a nonprofit's purpose to one that is 'as near as possible' to the original purpose or to the donor's original intent.)[52] Fourth, nonprofit deals can be subject to additional legal requirements, such as filling a notice of the transaction with the state or obtaining a Certificate of Need.[53] For example, in California, any transaction that transfers control over a nonprofit hospital requires an application with the AG and triggers a 60-day review period, which entails, among other things, an assessment of the deal's impact on the community's healthcare. The review process includes a public meeting of 'local leaders, community groups, elected officials, advocacy groups, consumers, and employees' unions' (Urban (2003), p.49).

Acquisitions of nonprofits by for-profits are more likely to require state (or court) approvals and often present additional challenges. For once, for-profit buyers cannot assume the nonprofit's tax-exempt debt, so the debt must be retired. Moreover, state corporation laws often require that a for-profit acquirer pays a consideration of no less than the market value of the acquired assets, and that the funds (minus the cost of debt) are used for purposes similar to those of the target nonprofit. Similarly, according to the IRS rules, the proceeds from a sale of nonprofit assets must be directed towards another nonprofit activity and cannot benefit private persons (including the for-profit acquirer). To comply with these laws, the proceeds are typically used to establish a foundation with a

[52] One of the conditions is that the original purpose or intent is 'impossible or impractical' for the nonprofit to carry out. There is a considerable disagreement among legal scholars as to the interpretation of the doctrine, and its application varies across states (see details in Fremont-Smith (2004)). A related issue is that the contracting parties must agree about the surviving entity's mission or services, which can be challenging when the parties' own missions diverge. According to the Wall Street Journal, the $28 billion merger between Catholic Health Initiatives and Dignity Health required clearance from 'several congregations of nuns and two archbishops' and, ultimately, the Vatican (Melanie Evans, WSJ, May 14th, 2018).

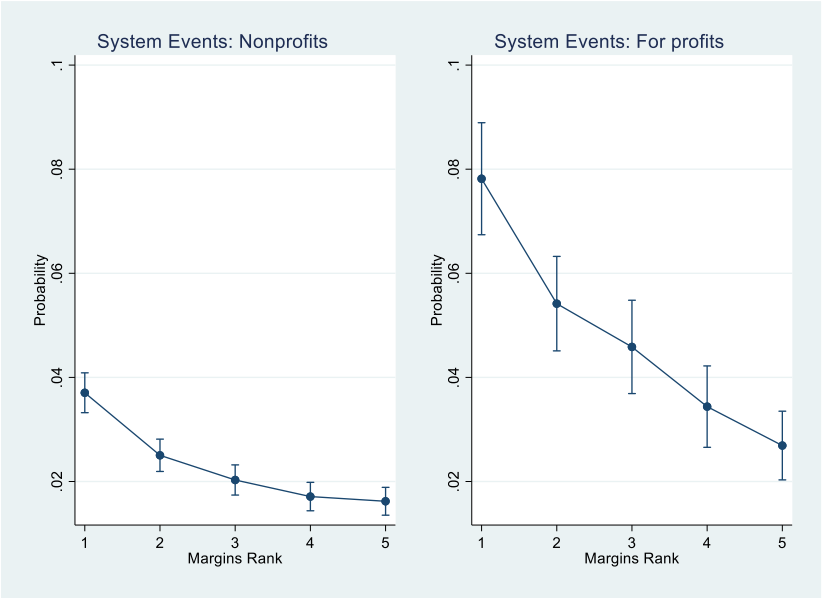
[53] Certificate of Need (CON) state laws (originally mandated by federal law) require healthcare providers to obtain permission before adding or modifying services. The laws' stated goal was to 'curb needless duplication of services and consequent excess capacity' (Conover and Sloan (1998), p. 455). Existing local providers can oppose granting a CON to a provider on the grounds that they already offer similar services. Currently, 35 states have CON laws (National Conference of State Legislatures, Certificate of Need (CON) State Laws, December 20th, 2021).

purpose close to that stated in the nonprofit's charter (or close to the donors' original intent if restricted funds are involved). Overall, these legal requirements impose costs on any control transactions involving nonprofits, particularly when control is passed on to a shareholder-owned firm.

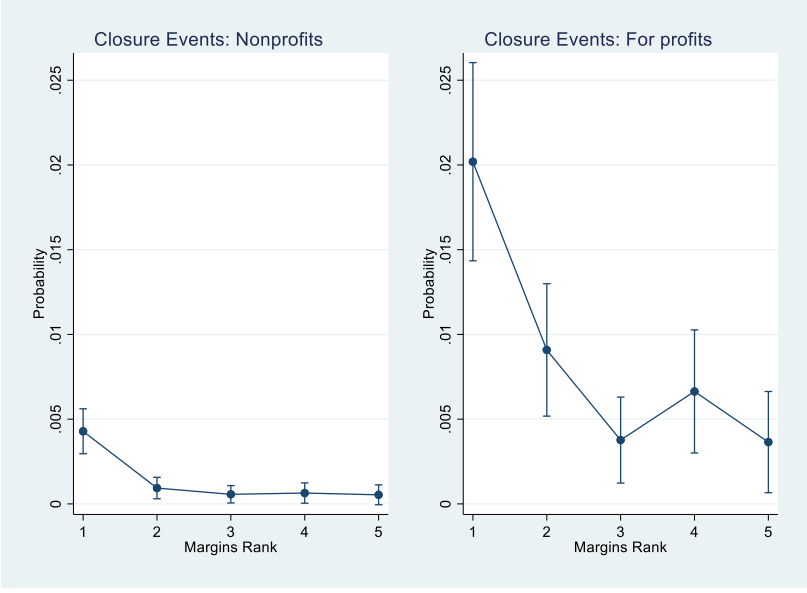
Figure 1: Predicted probabilities of corporate events

The figures show predicted probabilities of corporate events from a Probit model, estimated separately for for-profit and nonprofit hospitals. Panels A and C show probabilities of system acquisitions and Panels B and D of closures. Panels A and B show sensitivities to hospitals' margin rankings and Panels C and D to charity care rankings. To compute margin or charity care rankings, we sort hospitals into quintiles within hospital type (for-profit or nonprofit), year, and size ranking (for size ranking, hospitals are split at the median of revenues within hospital type and year). Controls in all regressions include log(*Revenue*), log(*Admissions*), *Medicaid*, *Revenue growth*, *Asset growth*, *Dummy system*, and *Dummy rural*. In Panels C and D, the controls also include *Margin*. Each circle in the graph represents the predicted probability with a capped spike showing the 95 percent confidence interval. All specifications include year fixed effects. Standard errors (in parentheses) are adjusted for heteroscedasticity and clustered at the firm level.

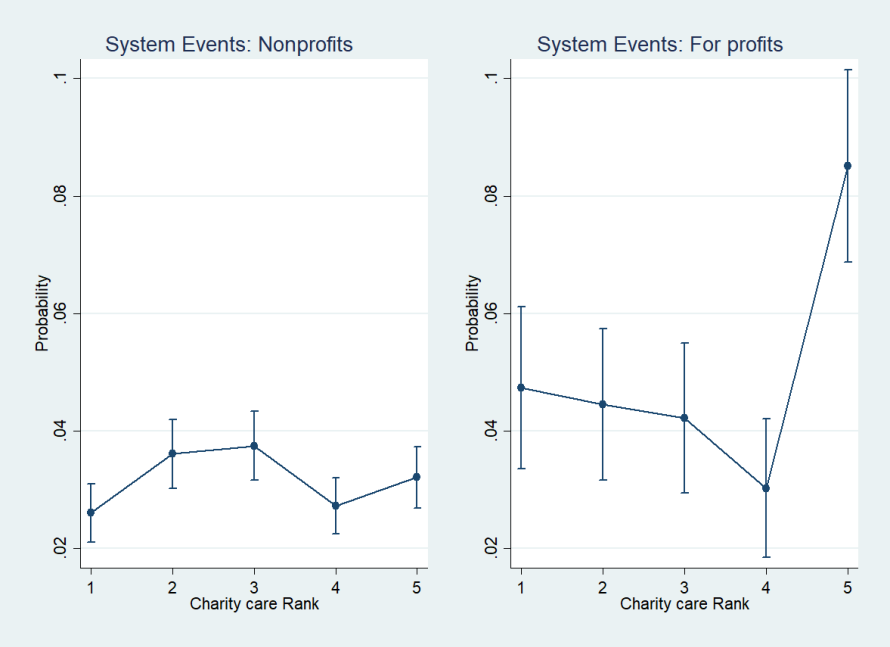
Panel A: System event sensitivity to margins



Panel B: Closure events sensitivity to margins



Panel C: System event sensitivity to charity care



Panel D: Closure event sensitivity to charity care

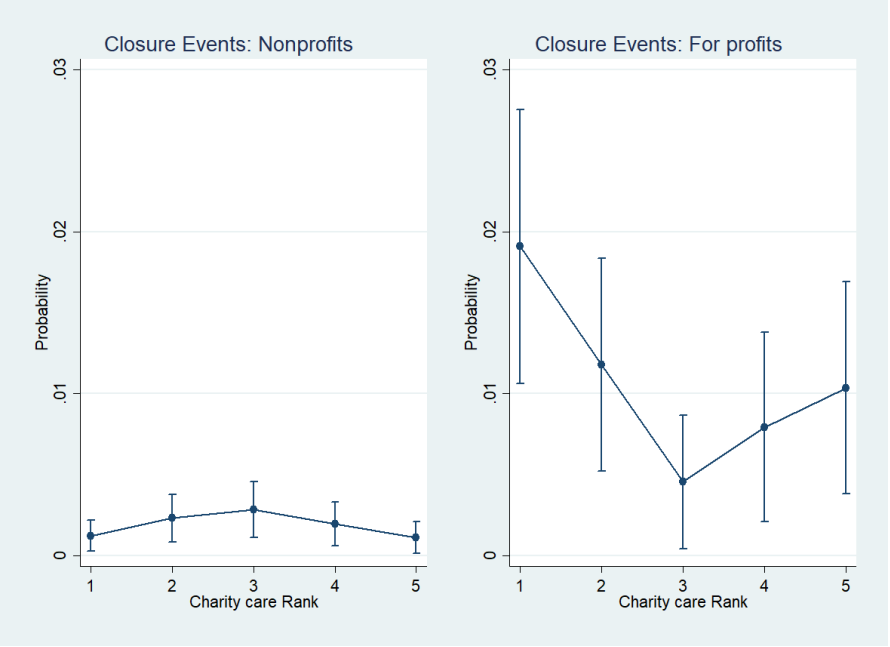
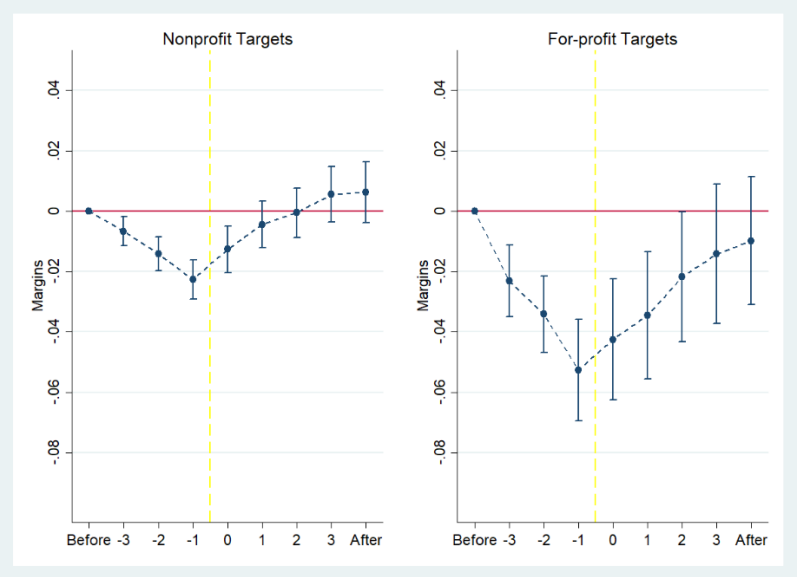


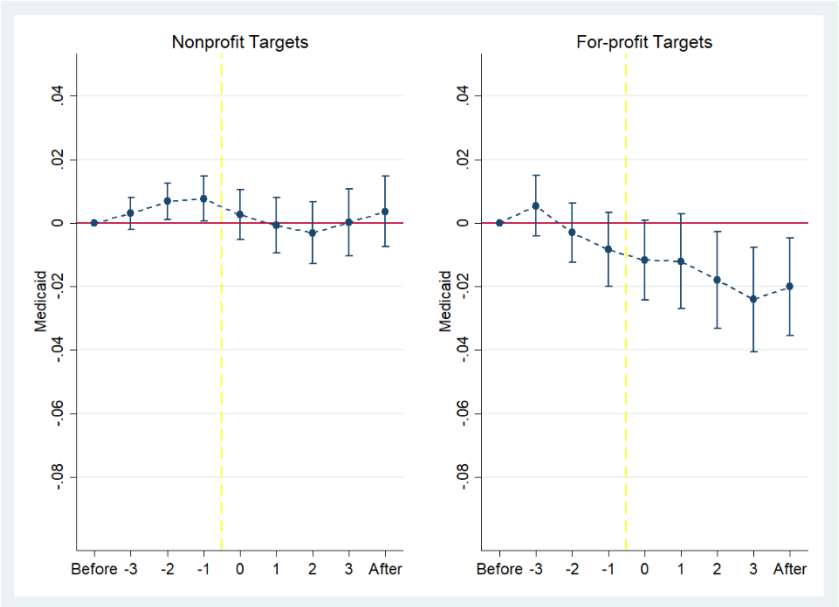
Figure 2: Hospital outcomes around system acquisitions

The figures show coefficients and 95% confidence intervals for changes in hospitals' outcomes around system acquisitions. For hospitals with multiple events, we exclude observations beginning with the second event in the sample (343 acquisitions and 1,429 observations). The estimated regression is: $y_{it}=\beta^{NPT}\Sigma D_{i\tau}*NPT_i+\gamma^{NPT}After_{i\tau}*NPT_i+\beta^{FPT}\Sigma D_{i\tau}*FPT_i+\gamma^{FPT}After_{i\tau}*FPT_i+\phi_i+\varphi_{st}+e_{it}$, where i stands for hospital, t for calendar year, τ for event year, and s for state. Event years $D_{i\tau}$ take the value of 1 for event years τ={-3,+3} around the acquisition event. $After_{i\tau}$ takes the value of 1 for event years greater than 3 after the acquisition. *Before* is the default period for for-profit and nonprofit targets. *NPT* and *FPT* are mutually exclusive dummies taking the value of 1 when the target is nonprofit or for-profit at the time of the acquisition and zero otherwise. This allows us to estimate separate coefficients by target type. ϕ_i are hospital fixed effects, and φ_{st} are state-by-year fixed effects. The dependent variables in Panels A to D are: *Margin*, *Medicaid*, *Charity*, and *Quality Index*. All variables are defined in Appendix A. Standard errors (in parentheses) are adjusted for heteroscedasticity and clustered at the firm level.

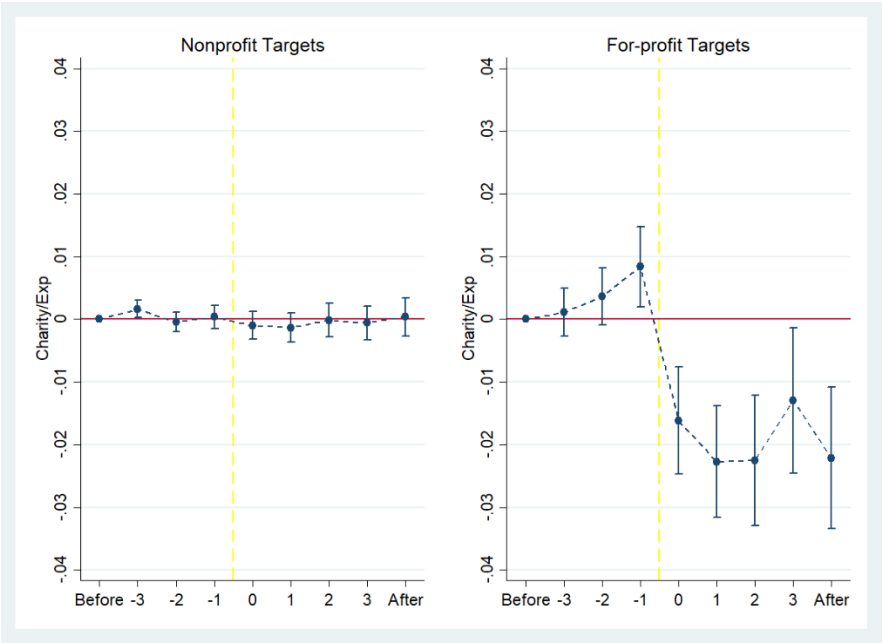
Panel A: Margins around system acquisitions



Panel B: Medicaid around system acquisitions



Panel C: Charity care around system acquisitions



Panel D: Quality around system acquisitions

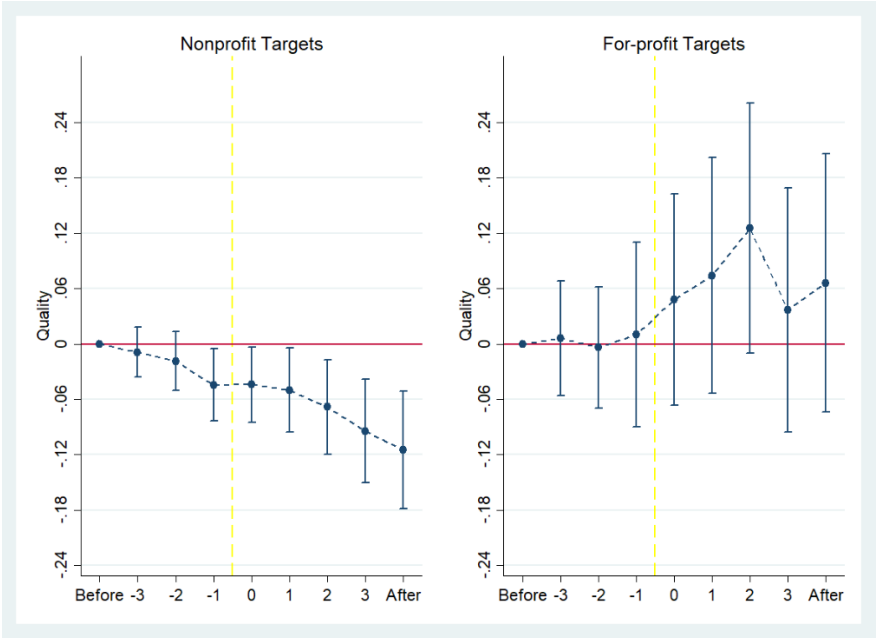
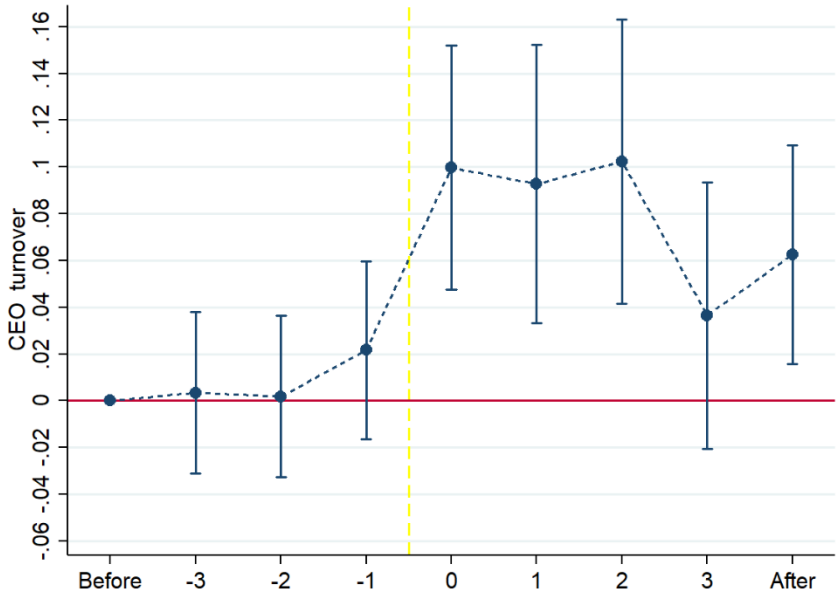


Figure 3: Nonprofit turnover around system acquisitions

The figures show estimates and 95% confidence intervals for the likelihood of CEO and board turnover around system events. We restrict the sample to nonprofit hospitals with data in the AHA and IRS samples. For hospitals with multiple system events, we exclude observations beginning with the second event in the sample. The estimated regression is: $y_{it} = \Sigma\beta D_{i\tau} + \gamma After_{i\tau} + \phi_i + \varphi_{st} + e_{it}$, where i stands for hospital, t for calendar year, τ for event year, and s for state. The dependent variables in Panels A and B are CEO and director turnover, respectively (the variables are defined in Appendix A). Event years $D_{i\tau}$ take a value of 1 for event years for τ={-3,+3} around the event. $After_{i\tau}$ takes a value of 1 for event years greater than 3 after the event. *Before* is the default period for for-profit and nonprofit targets. ϕ_i represents hospital fixed effects, and φ_{st} represents state-by-year fixed effects. Standard errors (in parentheses) are adjusted for heteroscedasticity and clustered at the firm level.

Panel A: CEO turnover around system acquisitions



Panel B: Director turnover around system acquisitions

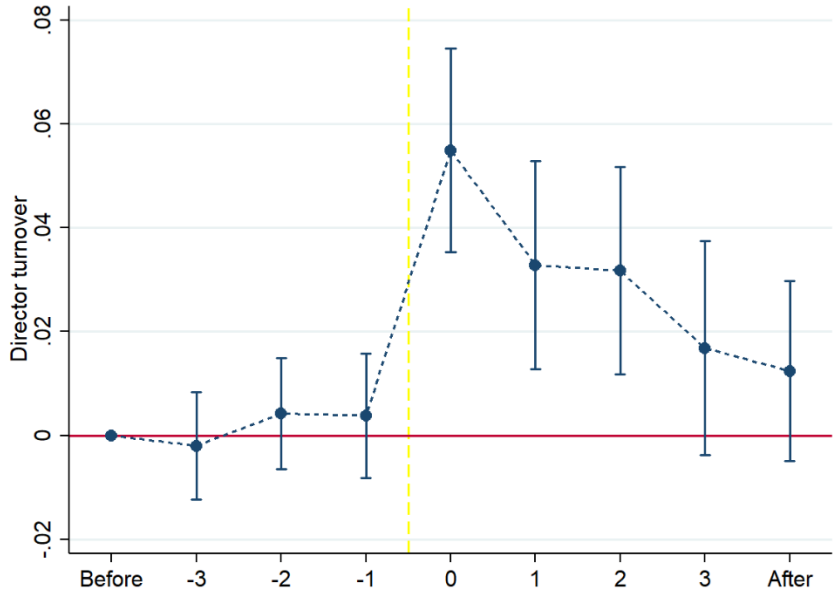


Figure 4: Nonprofit CEO pay sensitivity to hospital outcomes

The figures show the estimates and 95% confidence intervals for predicted changes in CEO pay as a function of lagged outcomes: *Margin*, *Medicaid*, *Charity*, and *Quality Index*. To compute hospital ranking on each measure (x-axis), we sort hospitals into quintiles by year and size ranking (for size ranking, hospitals are split at the median of *Revenue* by year). All regressions include firm and state-by-year fixed effects. Controls include *CEO tenure*, *Multiple positions*, and lagged Log(*Revenue*), log(*Admissions*), *Investment*, and *Revenue growth*. We also include lagged *Margin* and *Medicaid* as controls when the ranking of interest is not based on the same variable. Standard errors are adjusted for heteroscedasticity and clustered at the hospital level.

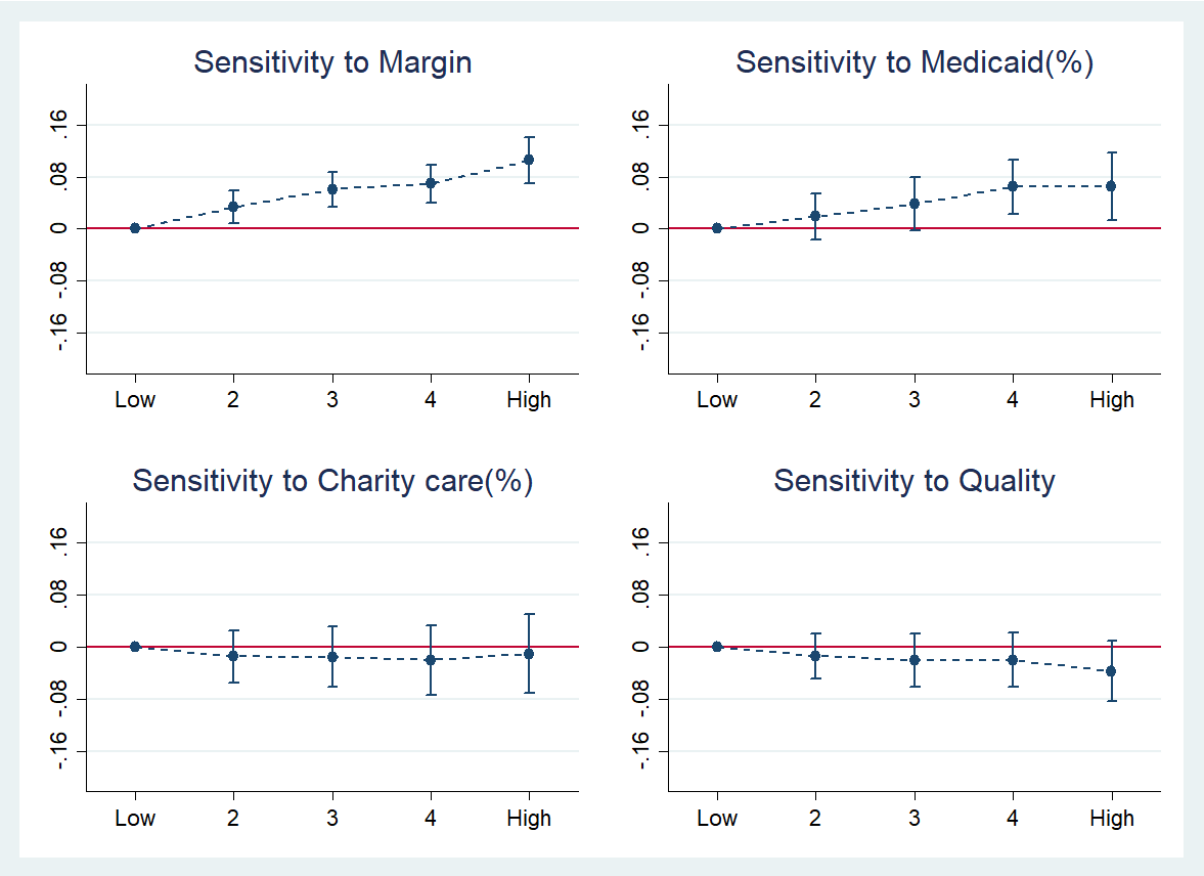


Figure 5: Nonprofit CEO turnover as a function of hospital outcomes

The figures show estimates and 95% confidence intervals for predicted probabilities of CEO turnover from a Probit model as a function of lagged outcomes: *Margin*, *Medicaid*, *Charity*, and *Quality index*. To compute hospital ranking on each measure (the x-axis), we sort hospitals into quintiles by year and size ranking (for size ranking, hospitals are split at the median of *Revenue* by year). Controls include *CEO tenure*, *Multiple positions*, lagged Log(*Revenue*), log(*Admissions*), *Investment*, *Revenue growth*, *Dummy system*, *and Dummy rural*. All regressions include year fixed effects. We also include lagged *Margin* and *Medicaid* as controls when the ranking of interest is not based on the same variable. Standard errors are adjusted for heteroscedasticity and clustered at the hospital level.

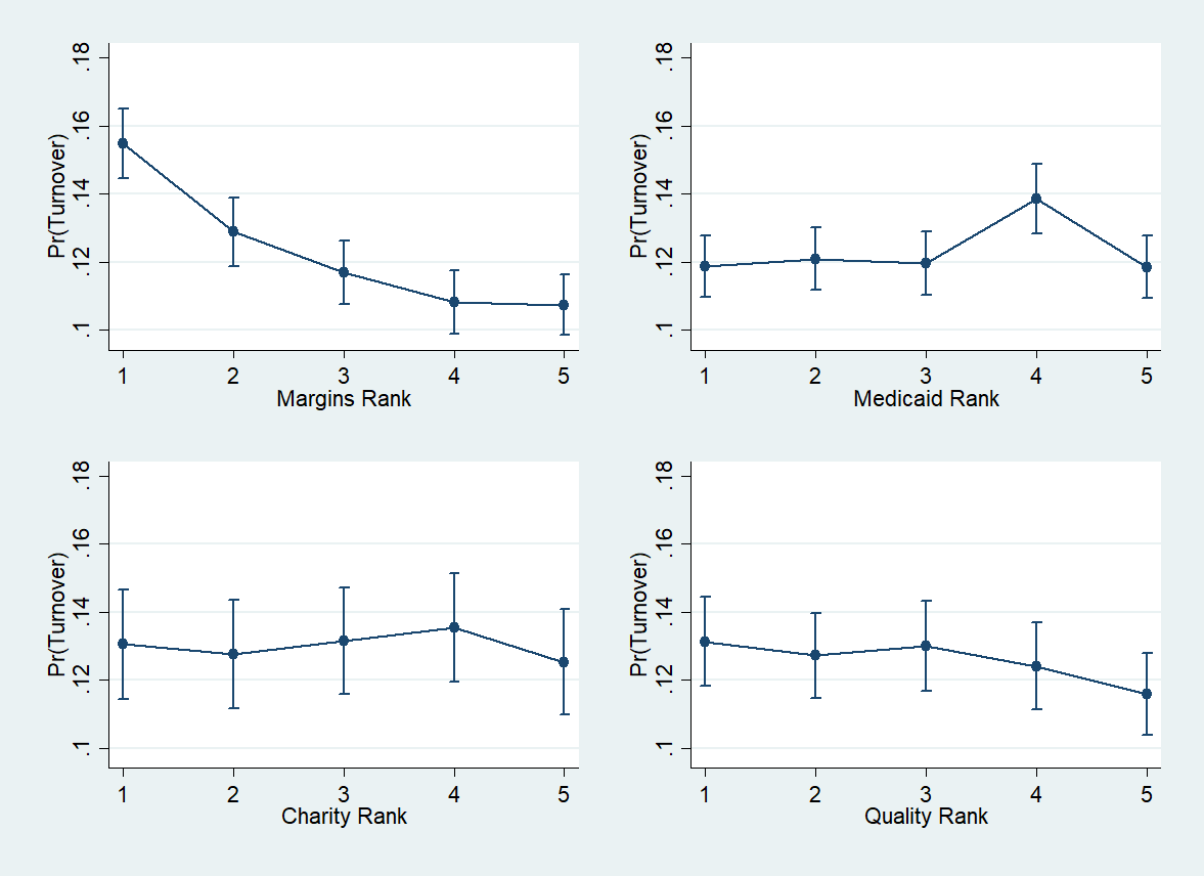


Figure 6: Nonprofit board turnover as a function of hospital outcomes

The figures show the estimates and 95% confidence intervals for director turnover as a function of lagged outcomes: *Margin*, *Medicaid*, *Charity*, and *Quality index*. Director turnover in year t is equal to (Number of new directors (t) + Number of outgoing directors (t-1)) / (2 * (Number of directors (t-1)) (see details in Appendix A). To compute hospital ranking on each outcome (x-axis), we sort hospitals into quintiles by year and size ranking (for size ranking, hospitals are split at the median of *Revenue* by year). All regressions include firm and state-by-year fixed effects. Controls include *CEO tenure*, *Multiple positions*, lagged Log(*Revenue*), log(*Admissions*), *Investment*, and *Revenue growth*. We also include lagged *Margin* and *Medicaid* as controls when the ranking of interest is not based on the same variable. Standard errors are adjusted for heteroscedasticity and clustered at the hospital level.

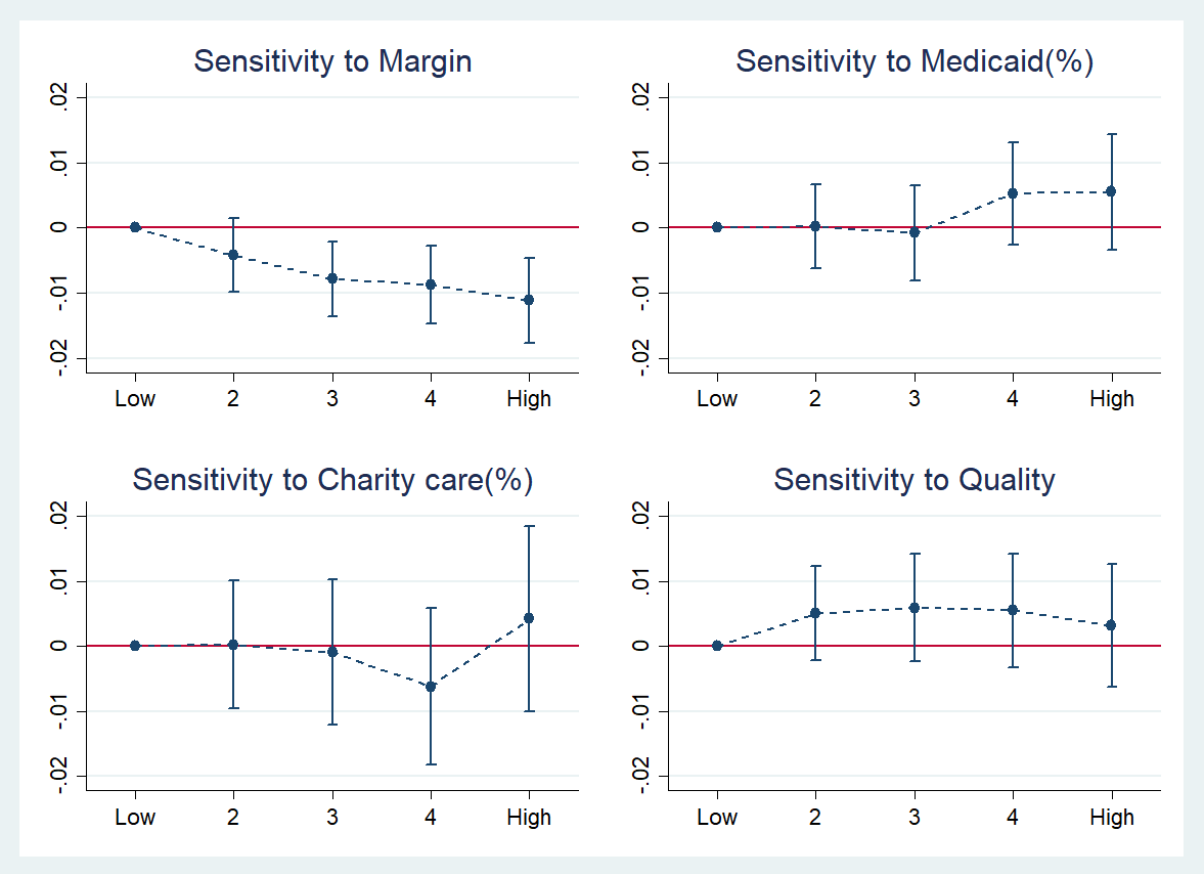


Table 1: Summary statistics: IRS sample

Panel A shows summary statistics for the hospital sample used in the analysis of internal governance for years 2000-2018 (described in Section 4.2). All variables' definitions are in Appendix A. The financial variables come from the IRS Form 990 filings while the data on patient admissions, Medicaid, system affiliation, and rural location come from the American Hospital Association (AHA) surveys. Panel B shows summary statistics for measures of quality of medical treatment (*Mortality (low)* and *Readm. (low))* and patient satisfaction *(Not recom. (low)*) from the Center for Medicare and Medicaid Services (CMS), available starting in 2008 (or 2009 for readmissions). The measures are normalized, so that each variable has a mean of zero and a standard deviation of one within a hospital-year (using all hospitals, including government owned). Higher values imply better quality. Quality index is the average of the three quality measures within hospital-year.

Panel A: Financials

	Mean	P10	P50	P90	SD	Total
Revenue (MM)	184	14	89	441	287	27,868
Assets (MM)	215	10	86	507	443	27,869
Margin	0.04	-0.04	0.03	0.12	0.07	27,583
Investment	0.05	-0.08	0.00	0.24	0.19	27,047
Rev. growth	0.06	-0.04	0.06	0.16	0.11	27,569
Admission	8,121	533	4,939	19,925	9,177	27,869
Medicaid	0.20	0.05	0.16	0.44	0.16	27,869
Charity	0.01	0.00	0.01	0.04	0.02	9,949
Dummy system	0.46	0.00	0.00	1.00	0.50	27,869
Dummy rural	0.21	0.00	0.00	1.00	0.41	27,771
Donations	0.01	0.00	0.00	0.03	0.03	26,815
Grants	0.01	0.00	0.00	0.01	0.03	26,830

Panel B: Quality

	Mean	P10	P50	P90	SD	Total
Mortality (low)	-0.00	-0.98	0.01	0.95	0.76	14,113
Readm. (low)	0.06	-0.99	0.12	1.00	0.78	12,385
Not recom. (low)	0.13	-0.89	0.29	0.94	0.81	12,884
Quality Index	0.06	-0.58	0.10	0.65	0.50	14,303

Table 2: Summary statistics for nonprofit and for-profit hospitals: M&A sample

Panel A shows sample means and differences in means for nonprofit and for-profit hospitals used in the M&A analysis for years 2000-2018 (described in Section 4.3). All variables are defined in Appendix A. The financial variables come from the Healthcare Cost Report Information System (HCRIS) while the data on patient admissions, Medicaid, system affiliation, and rural location come from the American Hospital Association (AHA) surveys. Measures of quality of medical treatment (*Mortality (low)* and *Readm. (low))* and patient satisfaction *(Not recom. (low)*) are from the Center for Medicare and Medicaid Services (CMS). The bottom section of Panel A reports averages for the dummy variables indicating corporate events for the target hospital. Each event dummy equals one for the target in the year prior to the event (for mergers and closures, we use the last year the target appears in the database). Significant at: *10%, **5% and ***1%. Panel B shows the numbers of system acquisition events by the type of target and acquirer. It also shows (in parentheses) the percent of hospital-years in which a hospital is a target, separately for nonprofit and for-profit targets.

Panel A: Sample means

Variable	Nonprofit	For-profit	(1)-(2)
Revenue (MM)	197.329	110.519	86.810***
Assets (MM)	234.794	81.864	152.929***
Margin	0.033	0.043	-0.010***
Revenue growth	0.066	0.068	-0.002
Asset growth	0.064	0.055	0.009***
Admission	8,957.506	6,856.151	2,101.355***
Medicaid	0.189	0.165	0.024***
Charity	0.017	0.018	-0.000
Dummy system	0.620	0.867	-0.248***
Dummy rural	0.202	0.124	0.078***
Mortality (low)	0.042	-0.031	0.073***
Readm. (low)	0.066	-0.187	0.252***
Not recom. (low)	0.143	-0.705	0.848***
Quality Index	0.083	-0.292	0.375***
System acq.	0.024	0.048	-0.025***
NP System acq.	0.019	0.011	0.008***
FP System acq.	0.005	0.037	-0.033***
PE event	0.003	0.041	-0.038***
Merger	0.002	0.003	-0.002***
Closure	0.002	0.010	-0.008***
Observations	45,040	11,344	
Hospitals	3,232	1,071	

Panel B: Number of system events by type of target and acquirer (% of sample)

		Acquirer		
		NP	FP	Total
Target	NP	854 (1.9%)	211 (0.5%)	1,065 (2.4%)
	FP	127 (1.1%)	423 (3.7%)	550 (4.8%)
		981	634	1,615

Table 3: Board size and composition

The table shows board characteristics for nonprofit hospitals (Panel A) and nonprofit and for-profit systems (Panel B) for years 2009-2018. The board data on nonprofit hospitals and systems comes from the post-2008 Form 990 filings that list directors and officers and include the total number of independent directors. We use these disclosures, along with the data on the directors' pay, to categorize nonprofit directors into executives, non-executive employees, and other non-independent directors. The classification procedure is described in Section 5 and Appendix C. *Nonprofit Systems* are nonprofit systems included in the AHA survey with more than 3.0 thousand beds in 2014 for which we have IRS data for the parent organization. *For-profit Systems* are publicly traded for-profit systems, which includes firms on Compustat with SIC code 806 (Hospitals) that are listed as hospital systems on the AHA in years 2009-2018. We classify for-profit directors into executives, non-executive employees, and other non-independent directors using director information in the proxy disclosures (see details in Appendix A). *System beds* is the number of system-wide beds in thousands and *System admissions* is the number of system-wide admissions in thousands.

Panel A: Nonprofit hospitals

	Mean	Median	P10	P90	SD	N
Numbers of directors						
All Directors	14.61	14.00	8.00	22.00	6.51	13,343
All non-independent dir.	2.77	2.00	0.00	6.00	2.51	13,337
Executives	0.74	1.00	0.00	2.00	0.86	13,343
Non-exec employees	1.02	0.00	0.00	3.00	1.45	13,343
Other non-independent	1.00	0.00	0.00	3.00	1.67	13,337
Fractions of All Directors						
All not independent dir.	0.19	0.17	0.00	0.40	0.17	13,337
Executives	0.05	0.04	0.00	0.13	0.08	13,343
Non-exec employees	0.07	0.00	0.00	0.20	0.10	13,343
Other not independent	0.07	0.00	0.00	0.20	0.11	13,337

Panel B: Nonprofit and for-profit systems

	Nonprofit Systems		For-profit Systems		Coef. on Nonprofit*
	Mean	Median	Mean	Median	
Numbers of directors					
All Directors	19.80	16.00	9.00	9.00	10.781***
All non-independent dir.	4.24	2.00	1.87	2.00	2.323**
Executives	1.31	1.00	1.35	1.00	-0.042
Non-exec employees	1.19	0.00	0.00	0.00	1.158**
Other non-independent	1.69	0.00	0.52	0.00	1.151**
Fractions of All Directors					
All non-independent dir.	0.19	0.13	0.21	0.20	-0.018
Executives	0.07	0.06	0.16	0.13	-0.085***
Non-exec employees	0.04	0.00	0.00	0.00	0.042**
Other non-independent	0.08	0.00	0.05	0.00	0.023
Director compensation	6.69	0.00	229.5	270.0	--
Director ownership	--	--	2,482.0	594.3	--
System beds	5.11	4.01	12.66	8.65	
System admissions	247.95	193.31	514.33	362.39	
N system-years	190		71		261
N systems	21		14		36

**Coef. on Nonprofit* is a coefficient from a regression of the board composition measure (e.g., *All Directors*) on the *Nonprofit* dummy and *log(Beds)*. Clustering by hospital system. Significant at: *10%, **5% and ***1%

Table 4: Director backgrounds: hospital systems

The table compares director backgrounds of 264 directors of nonprofit systems and 126 directors of for-profit systems in 2019. The for-profit systems include all publicly traded for-profit systems; the nonprofit systems include the 14 largest nonprofit systems based on the Becker's Hospital Review in 2019. Panels A and B report statistics separately for directors affiliated and unaffiliated with the system. Affiliation is defined as employment or other business or contractual relationship with any of the system entities. The top five sections in each panel show frequencies of the most common occupations, educational backgrounds, and work experiences (by sector) for nonprofit and for-profit directors. The bottom two sections in each panel show average numbers of concurrent board seats held by a director, average director age, fraction of female directors, and fraction of directors that are members of clergy or religious order. Information on director backgrounds comes from online sources, including hospital websites, articles, and LinkedIn. Significant at: *10%, **5% and ***1%.

Panel A: Directors affiliated with the system (49 nonprofit and 17 for-profit)

Variable	Nonprofit	For-profit	Diff.
Current Occupation			
CEO	0.35	0.76	-0.42***
Executive	0.45	0.76	-0.32***
Medical Doctor	0.43	0.00	0.43***
Education			
Doctor of Medicine	0.63	0.00	0.63***
MBA	0.16	0.41	-0.25**
Any Management Degree (Grad.)	0.33	0.59	-0.26*
Ivy League (Grad. or Undergrad.)	0.07	0.12	-0.05
Work experience outside healthcare by industry			
Financial	0.00	0.24	-0.24***
Government	0.04	0.00	0.04
Prior Nonprofit Experience			
Work (Any)	1.00	0.06	0.94***
Executive	0.67	0.06	0.61***
Board Member	0.80	0.59	0.21*
Prior For-profit Experience			
Work (Any)	0.22	1.00	-0.78***
Executive	0.12	1.00	-0.88***
Board Member	0.27	0.94	-0.68***
Board Interlocks: Number of Concurrent Board Seats			
Nonprofit (Any)	0.51	1.12	-0.61**
Nonprofit Healthcare	0.31	0.24	0.07
Nonprofit Hospital	0.08	0.12	-0.04
For-profit (Any)	0.31	0.76	-0.46*
For-profit Healthcare	0.16	0.59	-0.42***
For-profit Hospital	0.04	0.35	-0.31***
Other			
Age	61.61	60.59	1.02
Female	0.27	0.06	0.21*
Member of Clergy or Religious Order	0.02	0.00	0.02

Panel B: Directors unaffiliated with the system (215 nonprofit and 109 for-profit)

Variable	Nonprofit	For-profit	Diff.
Current Occupation			
Retired	0.29	0.27	0.02
Finance	0.12	0.28	-0.16***
Executive	0.18	0.13	0.05
Education			
Doctor of Medicine	0.11	0.16	-0.05
MBA	0.25	0.34	-0.09
Any Management Degree (Grad.)	0.33	0.42	-0.09
Ivy League (Grad. or Undergrad.)	0.20	0.31	-0.11**
Work Experience by Sector			
Healthcare	0.39	0.61	-0.22***
Hospital	0.25	0.47	-0.22***
Financial	0.17	0.17	-0.00
Government	0.11	0.18	-0.07
Prior Nonprofit Experience			
Work (Any)	0.46	0.34	0.12**
Executive	0.38	0.17	0.20***
Board Member	0.91	0.71	0.20***
Prior For-profit Experience			
Work (Any)	0.80	0.91	-0.11**
Executive	0.74	0.83	-0.10
Board Member	0.62	0.84	-0.22***
Board Interlocks: Number of Concurrent Board Seats			
Nonprofit (Any)	1.23	1.04	0.19
Nonprofit Healthcare	0.31	0.24	0.07
Nonprofit Hospital	0.16	0.18	-0.02
For-profit (Any)	0.88	1.50	-0.62***
For-profit Healthcare	0.17	0.78	-0.60***
For-profit Hospital	0.03	0.36	-0.33***
Other			
Age	65.29	63.17	2.12**
Female	0.32	0.20	0.12**
Member of Clergy or Religious Order	0.07	0.00	0.07***

Table 5: Predicting corporate events

The table shows estimates from the linear probability models of corporate events: *System acquisitions*, *PE events*, *Closures*, and *Mergers*. The events and control variables are defined in Appendix A. Panels A to D estimate the sensitivities of the events to *Margins*, *Medicare*, *Charity*, and *Quality Index*. The dependent variable in each regression is set to one for the target hospital in the year prior to the event (for mergers and closers, we use the last year in which the hospital is in the database). The sample includes nonprofit and for-profit hospitals. Controls in all regressions include the nonprofit indicator, log(*Revenue*), log(*Admissions*), *Medicaid*, *Revenue growth*, *Asset growth*, *Dummy rural and Dummy system*. In Panels B – D, the controls also include *Margin*. All specifications include state-by-year fixed effects. Columns 3, 6, 9, and 12 also include firm fixed effects. Standard errors (in parentheses) are adjusted for heteroscedasticity and clustered at the firm level. Significant at: *10%, **5% and ***1%.

Panel A: Sensitivity to margins

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES	System acq.	System acq.	System acq.	PE event	PE event	PE event	Merger	Merger	Merger	Closure	Closure	Closure
Nonprofit	-0.021***	-0.023***		-0.036***	-0.037***		-0.001**	-0.001*		-0.007***	-0.009***	
	(0.003)	(0.003)		(0.002)	(0.002)		(0.001)	(0.001)		(0.001)	(0.001)	
Margin	-0.111***	-0.146***	-0.176***	-0.035***	-0.046***	-0.130***	-0.009***	-0.011*	-0.007	-0.038***	-0.067***	-0.045***
	(0.010)	(0.018)	(0.029)	(0.006)	(0.012)	(0.021)	(0.003)	(0.006)	(0.007)	(0.005)	(0.011)	(0.017)
Margin x Nonprofit		0.057***	0.109***		0.017	0.112***		0.002	0.006		0.047***	0.036**
		(0.020)	(0.032)		(0.013)	(0.022)		(0.006)	(0.008)		(0.012)	(0.017)
Observations	55,291	55,291	55,209	55,291	55,291	55,209	55,291	55,291	55,209	55,291	55,291	55,209
R-squared	0.063	0.063	0.131	0.099	0.099	0.157	0.018	0.018	0.134	0.029	0.031	0.149
Firm FE	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes
State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Sensitivity to Medicaid admissions

VARIABLES	(1) System acq.	(2) System acq.	(3) System acq.	(4) PE event	(5) PE event	(6) PE event	(7) Merger	(8) Merger	(9) Merger	(10) Closure	(11) Closure	(12) Closure
Nonprofit	-0.021***	-0.019***		-0.036***	-0.037***		-0.001**	-0.002		-0.007***	-0.008***	
	(0.003)	(0.004)		(0.002)	(0.003)		(0.001)	(0.001)		(0.001)	(0.002)	
Medicaid	0.000	0.011	-0.009	0.001	-0.004	-0.039	-0.001	-0.004	0.011	-0.002	-0.007	-0.015
	(0.005)	(0.019)	(0.032)	(0.002)	(0.015)	(0.025)	(0.001)	(0.005)	(0.007)	(0.002)	(0.009)	(0.013)
Medicaid x Nonprofit		-0.012	0.027		0.005	0.040		0.003	-0.014*		0.007	0.015
		(0.020)	(0.034)		(0.015)	(0.026)		(0.005)	(0.008)		(0.009)	(0.013)
Observations	55,291	55,291	55,209	55,291	55,291	55,209	55,291	55,291	55,209	55,291	55,291	55,209
R-squared	0.063	0.063	0.130	0.099	0.099	0.156	0.018	0.018	0.134	0.029	0.029	0.149
Firm FE	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes
State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel C: Sensitivity to charity care

VARIABLES	(1) System acq.	(2) System acq.	(3) System acq.	(4) PE event	(5) PE event	(6) PE event	(7) Merger	(8) Merger	(9) Merger	(10) Closure	(11) Closure	(12) Closure
Nonprofit	-0.016***	-0.004		-0.032***	-0.019***		0.001	0.002*		-0.007***	-0.009***	
	(0.004)	(0.005)		(0.003)	(0.003)		(0.001)	(0.001)		(0.002)	(0.002)	
Charity/Exp.	0.275***	0.718***	1.209***	0.235***	0.715***	1.256***	-0.010	0.032	0.052	-0.047*	-0.125**	-0.050
	(0.088)	(0.183)	(0.231)	(0.062)	(0.168)	(0.210)	(0.018)	(0.041)	(0.055)	(0.025)	(0.048)	(0.055)
(Charity/Exp) x Nonprofit		-0.622***	-0.898***		-0.673***	-1.160***		-0.059	-0.054		0.109**	0.055
		(0.193)	(0.268)		(0.159)	(0.204)		(0.045)	(0.060)		(0.049)	(0.060)
Observations	24,094	24,094	23,990	24,094	24,094	23,990	24,094	24,094	23,990	24,094	24,094	23,990
R-squared	0.072	0.072	0.202	0.076	0.080	0.210	0.023	0.023	0.287	0.029	0.029	0.273
Firm FE	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes
State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel D: sensitivity to quality

VARIABLES	(1) System acq.	(2) System acq.	(3) System acq.	(4) PE event	(5) PE event	(6) PE event	(7) Merger	(8) Merger	(9) Merger	(10) Closure	(11) Closure	(12) Closure
Nonprofit	-0.011***	-0.011***		-0.024***	-0.023***		-0.001	-0.002		-0.007***	-0.006***	
	(0.003)	(0.003)		(0.002)	(0.002)		(0.001)	(0.001)		(0.001)	(0.001)	
Quality Index	-0.003	-0.002	0.007	-0.003***	-0.008**	-0.000	-0.000	0.003*	0.002	-0.001	-0.002	-0.004
	(0.002)	(0.004)	(0.007)	(0.001)	(0.003)	(0.005)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.003)
Quality x Nonprofit		-0.001	-0.010		0.006*	-0.001		-0.004**	-0.002		0.001	0.004
		(0.005)	(0.008)		(0.003)	(0.006)		(0.002)	(0.002)		(0.002)	(0.003)
Observations	33,275	33,275	33,165	33,275	33,275	33,165	33,275	33,275	33,165	33,275	33,275	33,165
R-squared	0.064	0.065	0.162	0.070	0.070	0.172	0.019	0.019	0.244	0.029	0.029	0.218
Firm FE	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes
State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 6: Nonprofit turnover around System acquisitions

The table shows regression results for CEO and director turnover around system events. We restrict the sample to nonprofit hospitals with data in the AHA and IRS samples. For hospitals with multiple system events, we exclude observations beginning with the second event in the sample. The regressions include three dummies indicating years relative to the event year $\tau=0$: $\tau=[-3,-1]$, $\tau=[0,3]$, and $\tau>3$. The regressions include hospital and state-by-year fixed effects. Regressions in columns 3 and 4 include as controls lagged values of *Margin*, log(*Admissions*), *Revenue growth*, and *Asset growth*, but only *Margin* is reported. Standard errors (in parentheses) are adjusted for heteroscedasticity and clustered at the hospital level. Significant at: *10%, **5% and ***1%.

	(1)	(2)	(3)	(4)
VARIABLES	CEO turn.	Director turn.	CEO turn.	Director turn.
System acq. x t=[-3,-1]	0.003	0.002	-0.000	0.002
	(0.012)	(0.004)	(0.012)	(0.004)
System acq. x t=[0,3]	0.081***	0.038***	0.087***	0.041***
	(0.016)	(0.005)	(0.016)	(0.005)
System acq. x t >3	0.045**	0.020***	0.050**	0.023***
	(0.019)	(0.007)	(0.020)	(0.007)
Margin (t-1)			-0.216***	-0.085***
			(0.052)	(0.017)
Observations	21,023	20,639	20,599	20,009
R-squared	0.135	0.174	0.138	0.178
State-Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Controls	No	No	Yes	Yes

Table 7: Descriptive statistics for CEO compensation and turnover

Panel A shows descriptive statistics for CEO compensation and turnover for nonprofit hospitals for years 2000-2018. The statistics for compensation are reported separately for the years 2000-2008 and 2009-2018 to account for the change in the IRS reporting requirements in 2008. All variables' definitions are in Appendix A. Panel B shows descriptive statistics for nonprofit and for-profit systems for the years 2009-2018. *Nonprofit Systems* are nonprofit systems included in the AHA survey with more than 3.0 thousand beds in 2014 for which we have IRS compensation data for the parent organization. *For-profit Systems* are publicly traded for-profit systems, which include all firms on Compustat with SIC code 806 (Hospitals) in the years 2009-2018. CEO compensation for for-profit systems is the Execucomp variable Total Compensation (TDC1), which includes salary, bonus, value of option and stock awards, deferred compensation, non-equity incentive plan compensation, and other compensation. *System beds* is the number of system-wide beds in thousands, and *System admissions* is the number of total system admissions in thousands.

Panel A: Nonprofit hospitals

	Mean	Median	P10	P90	SD	N
CEO comp. pre 2009	329	251	104	578	1,160	8,421
CEO comp. post 2008	628	434	151	1,265	724	13,230
CEO comp. post 2008 (incl. other)	718	491	165	1,478	814	13,441
CEO comp full sample	512	340	125	1,005	930	21,651
CEO turnover	0.12	0.00	0.00	1.00	0.3	26,127
Director turnover	0.13	0.11	0.00	0.27	0.1	24,513

Panel B: Nonprofit and for-profit systems

	Nonprofit Systems		For-profit Systems		Coef. on Nonprofit*
	Mean	Median	Mean	Median	
CEO comp. (incl. other)	4,396.58	3,494.01	8,504.25	7,355.90	-0.339*
CEO equity	--	--	122,004.51	27,241.93	--
System beds	5.18	4.10	12.66	8.65	
System admissions	251.39	195.68	514.33	362.39	
N system-years	183		71		254
N systems	21		14		35

**Coef. on Nonprofit* is a coefficient from a regression of log(CEO com.) on the *Nonprofit* dummy and *log(Beds)*. Clustering by hospital system. Significant at: *10%, **5% and ***1%

Table 8: Nonprofit sensitivities of CEO pay to hospital outcomes

The table shows results from regressions of nonprofit CEO pay as a function of hospital outcomes and controls. The dependent variable is log of *CEO comp. full sample*, defined in Appendix A. The regressions in Panel A include lagged *Margin* and *Medicaid* as the main independent variables. We report regressions with and without firm fixed effects. The regressions in Panel B include measures of charity and service quality as the main independent variables and always include firm fixed effects. Controls are included in both panels but only reported in Panel A. All specifications include state-by-year fixed effects. Standard errors (in parentheses) are adjusted for heteroscedasticity and clustered at the firm level. Significant at: *10%, **5% and ***1%.

Panel A: CEO Pay sensitivity

	(1)	(2)
VARIABLES	Log(CEO pay)	Log(CEO pay)
Margin (t-1)	0.591***	0.567***
	(0.109)	(0.086)
Medicaid (t-1)	0.038	0.139**
	(0.048)	(0.062)
Log(Revenue) (t-1)	0.340***	0.090***
	(0.032)	(0.033)
Log(Admissions) (t-1)	0.045	0.030
	(0.029)	(0.028)
Revenue growth (t-1)	-0.073	-0.028
	(0.049)	(0.042)
Investment (t-1)	0.061**	0.025
	(0.026)	(0.021)
CEO tenure	0.032***	0.034***
	(0.002)	(0.002)
Multiple positions	0.493***	0.346***
	(0.036)	(0.037)
Dummy system	0.066***	
	(0.016)	
Dummy rural	-0.102***	
	(0.026)	
Observations	19,712	19,683
R-squared	0.613	0.778
Firm FE	No	Yes
State-Year FE	Yes	Yes

Panel B: Including charity care and quality measures

VARIABLES	(1) Log(CEO pay)	(2) Log(CEO pay)	(3) Log(CEO pay)	(4) Log(CEO pay)	(5) Log(CEO pay)	(6) Log(CEO pay)
Margin (t-1)	0.329***	0.519***	0.522***	0.506***	0.505***	0.523***
	(0.118)	(0.102)	(0.111)	(0.112)	(0.103)	(0.120)
Medicaid (t-1)	0.070	0.036	0.047	0.110	0.070	0.118
	(0.080)	(0.075)	(0.082)	(0.075)	(0.073)	(0.083)
Charity (t-1)	-0.468					
	(0.767)					
Quality Index (t-1)		-0.022				
		(0.017)				
Not recom. (low) (t-1)			0.000			0.003
			(0.013)			(0.014)
Readm. (low) (t-1)				-0.012		-0.015
				(0.012)		(0.013)
Mortality (low) (t-1)					-0.013	-0.010
					(0.011)	(0.013)
Observations	7,518	11,339	10,238	9,977	11,196	9,231
R-squared	0.834	0.807	0.791	0.814	0.806	0.799
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Table 9: Nonprofit sensitivity of CEO turnover to hospital outcomes

The table shows results from regressions of nonprofit CEO turnover as a function of lagged outcomes and controls. The dependent variable is a dummy equal to one in the year of CEO turnover and 0 otherwise. Panel A shows estimates from a Probit model (column 1) and linear probability model (OLS) with and without firm fixed effects (columns 1 and 2). The regressions in Panel A include lagged *Margin* and *Medicaid* as the main independent variables. The regressions in Panel B include measures of charity and service quality as the main independent variables and are estimated using OLS with firm fixed effects. Controls are included in both panels but only reported in Panel A. Standard errors (in parentheses) are adjusted for heteroscedasticity and clustered at the firm level. Significant at: *10%, **5% and ***1%.

Panel A: CEO Turnover sensitivity

	(1)	(2)	(3)
VARIABLES	CEO turn.	CEO turn.	CEO turn.
Margin (t-1)	-0.229***	-0.237***	-0.165***
	(0.032)	(0.033)	(0.047)
Medicaid (t-1)	-0.004	-0.004	0.015
	(0.014)	(0.013)	(0.032)
Log(Revenue) (t-1)	-0.011**	-0.011**	-0.043***
	(0.004)	(0.004)	(0.016)
Log(Admissions) (t-1)	0.003	0.003	0.001
	(0.004)	(0.004)	(0.014)
Revenue growth (t-1)	-0.017	-0.018	0.018
	(0.024)	(0.025)	(0.028)
Investment (t-1)	-0.021*	-0.020*	-0.016
	(0.012)	(0.012)	(0.013)
CEO tenure (t-1)	0.003***	0.003***	0.026***
	(0.001)	(0.001)	(0.001)
Multiple positions (t-1)	-0.006	-0.006	0.013
	(0.007)	(0.008)	(0.014)
Dummy system	0.049***	0.049***	
	(0.005)	(0.005)	
Dummy rural	0.001	-0.000	
	(0.006)	(0.007)	
Observations	22,200	22,200	22,134
R-squared		0.011	0.164
Firm FE	No	No	Yes
Year FE	Yes	Yes	No
State-Year FE	No	No	Yes
Model	Probit	OLS	OLS

Panel B: Including charity care and quality measures

VARIABLES	(1) CEO turn.	(2) CEO turn.	(3) CEO turn.	(4) CEO turn.	(5) CEO turn.	(6) CEO turn.
Margin (t-1)	-0.140	-0.167**	-0.186**	-0.175**	-0.171**	-0.182**
	(0.086)	(0.074)	(0.078)	(0.079)	(0.074)	(0.083)
Medicaid (t-1)	0.038	-0.046	-0.029	-0.045	-0.034	-0.035
	(0.061)	(0.047)	(0.054)	(0.051)	(0.047)	(0.057)
Charity (t-1)	0.572					
	(0.560)					
Quality Index (t-1)		-0.023**				
		(0.010)				
Not recom. (low) (t-1)			-0.021***			-0.019**
			(0.008)			(0.008)
Readm. (low) (t-1)				-0.009		-0.008
				(0.008)		(0.008)
Mortality (low) (t-1)					-0.010	-0.006
					(0.007)	(0.008)
Observations	8,108	12,123	10,872	10,693	11,963	9,826
R-squared	0.308	0.243	0.251	0.258	0.244	0.262
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Table 10: Nonprofit sensitivity of board turnover to hospital outcomes

The table shows results from regressions of nonprofit director turnover as a function of lagged outcomes and controls. The dependent variable is a measure of director turnover in year t equal to (Number of new directors (t) + Number of outgoing directors (t-1)) / (2 * (Number of directors (t-1)) (see details in Appendix A). The regressions in Panel A include lagged *Margin* and *Medicaid* as the main independent variables and are estimated with and without firm fixed effects. The regressions in Panel B include measures of charity and service quality as the main independent variables and are estimated with firm fixed effects. Controls are included in both panels but only reported in Panel A. All specifications include state-by-year fixed effects. Standard errors (in parentheses) are adjusted for heteroscedasticity and clustered at the firm level. Significant at: *10%, **5% and ***1%.

Panel A: Board turnover sensitivity

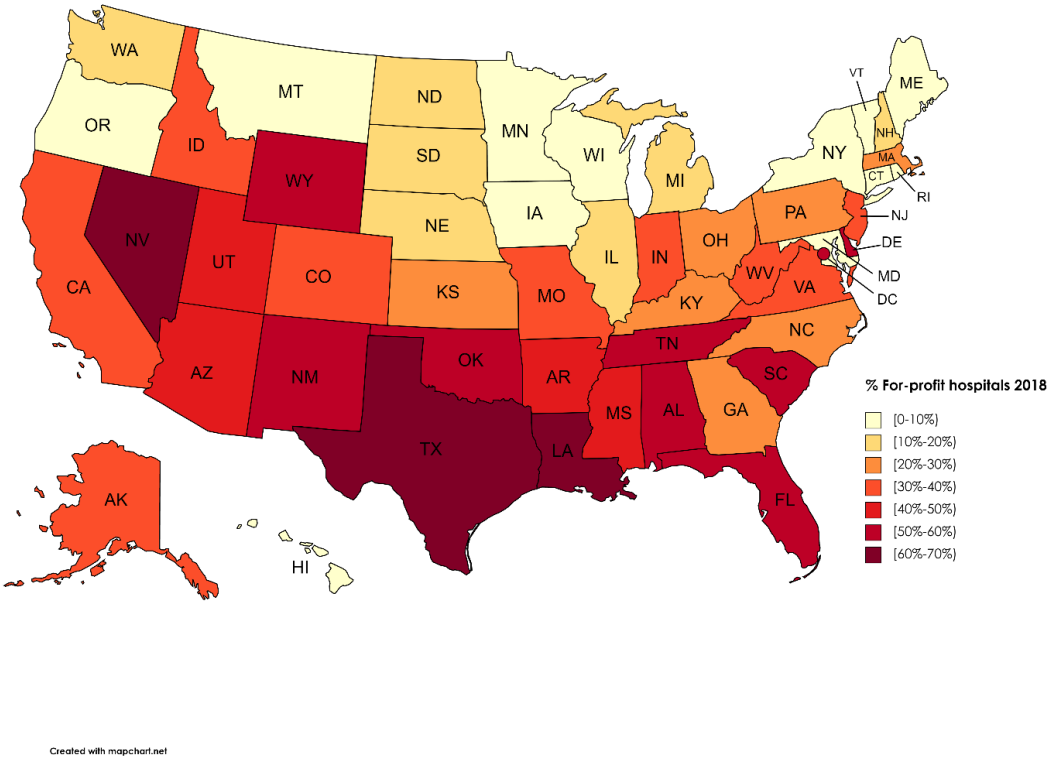
VARIABLES	(1) Director turn.	(2) Director turn.
Margin (t-1)	-0.036***	-0.069***
	(0.012)	(0.015)
Medicaid (t-1)	-0.003	0.014
	(0.006)	(0.010)
Log(Revenue) (t-1)	-0.000	-0.014**
	(0.002)	(0.005)
Log(Admissions) (t-1)	0.004**	0.007*
	(0.002)	(0.004)
Revenue growth (t-1)	0.009	0.018*
	(0.009)	(0.010)
Investment (t-1)	-0.016***	-0.015***
	(0.004)	(0.004)
CEO tenure	-0.003***	-0.003***
	(0.000)	(0.000)
Multiple positions	0.016***	0.012***
	(0.003)	(0.004)
Dummy system	0.012***	
	(0.002)	
Dummy rural	-0.000	
	(0.003)	
Observations	21,613	21,569
R-squared	0.075	0.180
Firm FE	No	Yes
State-Year FE	Yes	Yes

Panel B: Including charity care and quality measures

VARIABLES	(1) Director turn.	(2) Director turn.	(3) Director turn.	(4) Director turn.	(5) Director turn.	(6) Director turn.
Margin (t-1)	-0.057*	-0.048**	-0.045*	-0.048*	-0.048**	-0.045*
	(0.030)	(0.023)	(0.025)	(0.025)	(0.023)	(0.026)
Medicaid (t-1)	0.007	0.027*	0.027	0.028*	0.026*	0.028
	(0.020)	(0.015)	(0.018)	(0.017)	(0.015)	(0.018)
Charity (t-1)	0.103					
	(0.192)					
Quality Index (t-1)		0.004				
		(0.003)				
Not recom. (low) (t-1)			0.005**			0.005*
			(0.003)			(0.003)
Readm. (low) (t-1)				-0.003		-0.003
				(0.002)		(0.003)
Mortality (low) (t-1)					0.000	-0.000
					(0.002)	(0.002)
Observations	8,032	11,961	10,764	10,609	11,807	9,757
R-squared	0.267	0.233	0.243	0.244	0.235	0.250
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Appendix Figure A1: Geography of nonprofit vs. for-profit hospitals

Fraction of for-profit/(for-profit+nonprofit) hospitals by state for 2018.

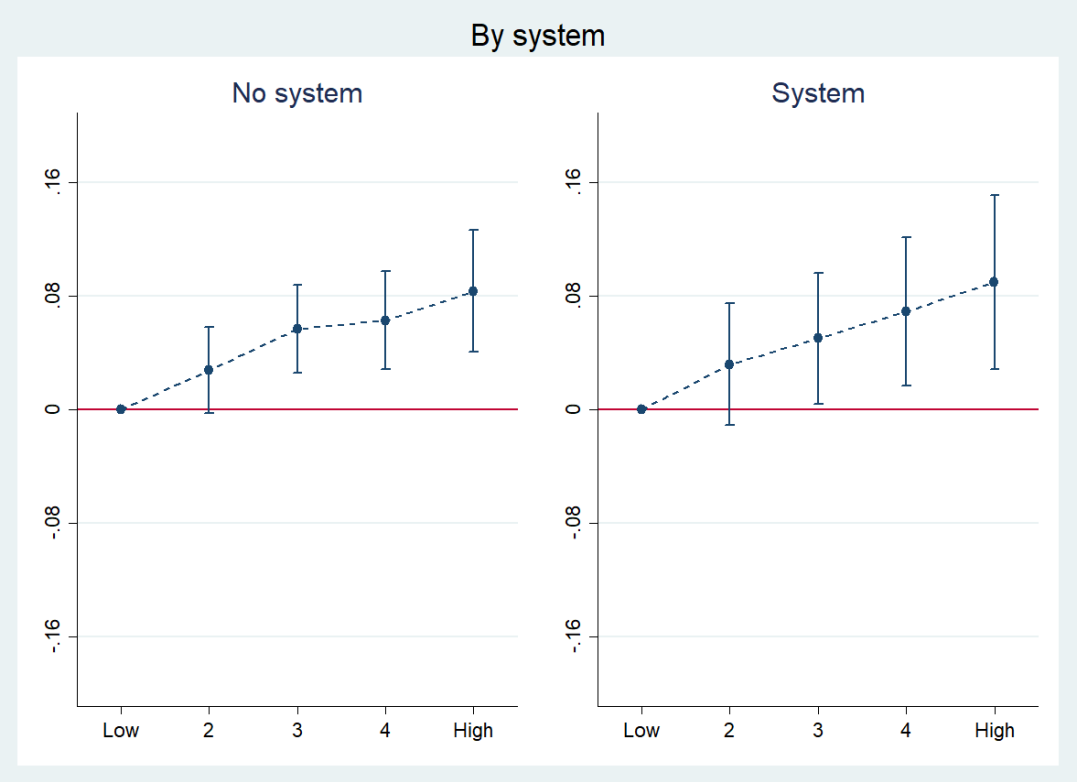


Created with mapchart.net

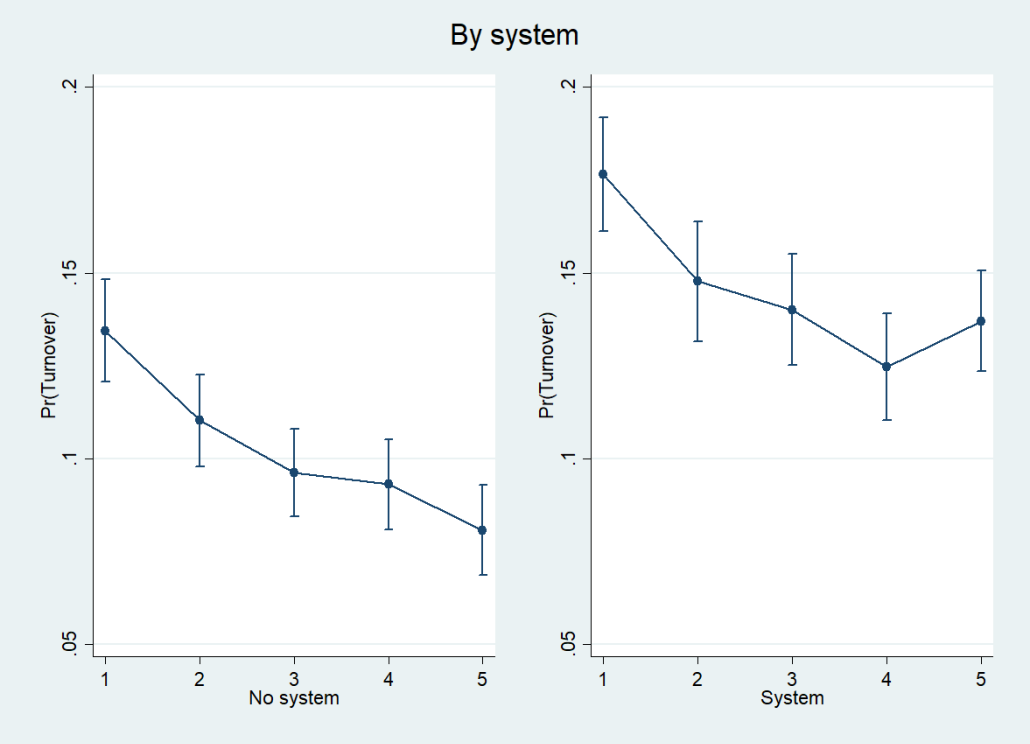
Appendix Figure A2: Nonprofit compensation and Turnover by System

Panels A-C present CEO salary, CEO turnover, and director turnover sensitivities to margins, separately for hospitals, according to whether they are part of a hospital system or not. The estimation method for Panel A follows Figure 4, for Panel B follows Figure 5, and for Panel C follows Figure 6.

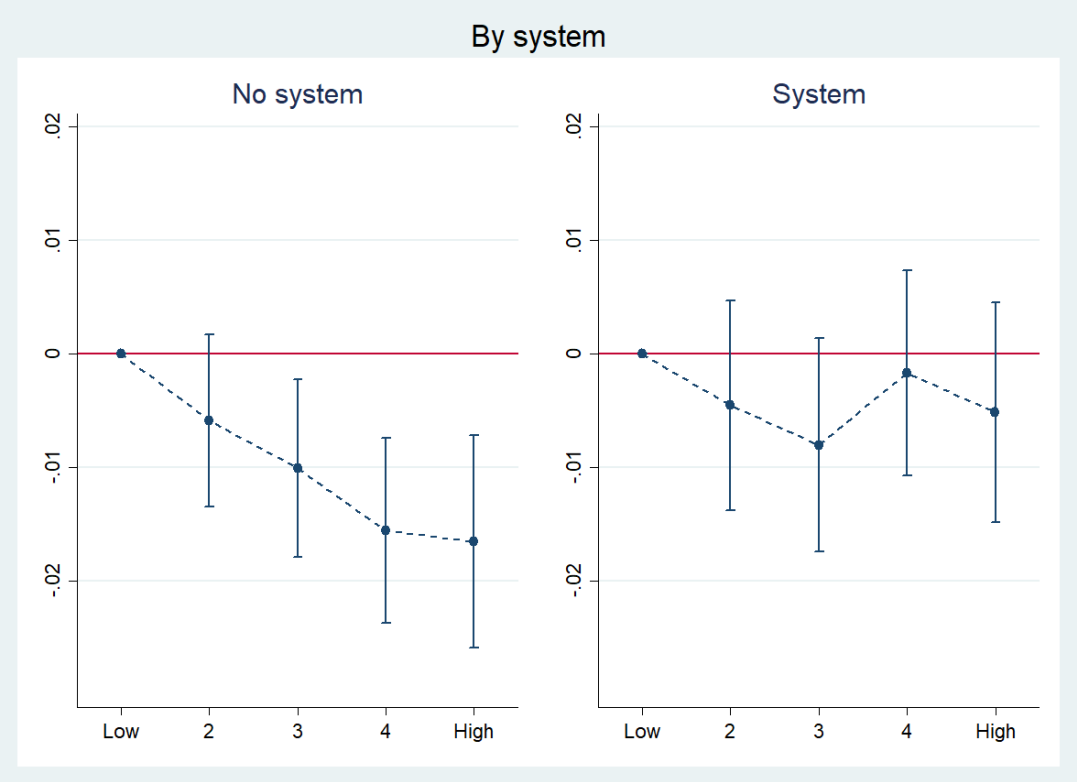
Panel A: CEO compensation



Panel B: CEO turnover



Panel C: Director turnover



Appendix Table A1: Nonprofit board size determinants

The table shows regression results for nonprofit hospitals' board size as a function of hospital characteristics during 2009-2018. All variables are described in Appendix A. Classification of directors into independent and non-independent is described in Appendix C. Standard errors (in parentheses) are adjusted for heteroscedasticity and clustered at the hospital level. Significant at: *10%, **5% and ***1%.

VARIABLES	(1) Log(# Directors)	(2) Log(# Indep dir.)	(3) Log(# Non-indep dir)
Log(Rev.) (t-1)	0.133***	0.114***	0.176***
	(0.007)	(0.009)	(0.013)
Margin (t-1)	-0.010	-0.075	0.262*
	(0.082)	(0.096)	(0.138)
Rev. growth (t-1)	0.013	-0.005	-0.022
	(0.039)	(0.050)	(0.069)
Dummy system	0.038***	-0.052***	0.312***
	(0.014)	(0.017)	(0.025)
Dummy rural	-0.065***	-0.063**	-0.008
	(0.020)	(0.025)	(0.038)
Grants (t-1)	0.418*	0.606**	-0.887***
	(0.252)	(0.283)	(0.307)
Donations (t-1)	1.536***	1.751***	0.080
	(0.198)	(0.255)	(0.426)
Observations	12,125	12,120	12,120
R-squared	0.425	0.300	0.314
Hosp. FE	No	No	No
State-Year FE	Yes	Yes	Yes

Appendix Table A2: Hospital outcomes around ownership changes

The table shows results from regressions of hospital outcomes around changes in ownership status. For hospitals with multiple events, we exclude observations beginning the second event in the sample (343 acquisitions and 1,429 observations). The dependent variables are in the table heading. All variables are defined in Appendix A. All regressions include firm and state-by-year fixed effects. The regressions in columns 1-4 include the *Nonprofit* dummy which is set to 1 when a hospital is nonprofit and to 0 when it is for-profit. The coefficient is identified from 218 conversions from the nonprofit to for-profit status and 80 conversions from the for-profit to nonprofit status. The regressions in columns 5-8 include the dummy *For-profit Conversion* (*Nonprofit Conversion*) interacted with the dummy *Post*. *For-profit Conversion* (*Nonprofit Conversion*) takes a value of 1 for hospitals that transit into the for-profit (nonprofit) status from nonprofit (for-profit) status. The dummy *Post* takes a value of 1 for hospitals 1 for the event years after the conversion, and 0 otherwise. Standard errors (in parentheses) are adjusted for heteroscedasticity and clustered at the hospital level. Significant at: *10%, **5% and ***1%.

VARIABLES	(1) Margin	(2) Medicaid	(3) Charity	(4) Quality Index	(5) Margin	(6) Medicaid	(7) Charity	(8) Quality Index
Nonprofit	-0.000	0.008	0.003*	0.110***				
	(0.007)	(0.006)	(0.002)	(0.034)				
For-profit Conversion * Post					-0.005	-0.014*	-0.003	-0.152***
					(0.007)	(0.008)	(0.002)	(0.036)
Nonprofit Conversion * Post					-0.009	-0.003	0.005	-0.041
					(0.017)	(0.009)	(0.004)	(0.072)
Observations	54,495	54,503	22,899	31,842	54,495	54,503	22,899	31,842
R-squared	0.513	0.719	0.750	0.671	0.513	0.719	0.750	0.671
State-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	No	No	No	No	No	No	No

Table A3: Nonprofit CEO salary around System acquisitions

The table shows regression results for CEO salary around system events. We restrict the sample to nonprofit hospitals with data in the AHA and IRS samples. For hospitals with multiple system events, we exclude observations beginning the second event in the sample. The regressions include three dummies indicating years relative to the event year $\tau=0$: $\tau=[-3,-1]$, $\tau=[0,3]$, and $\tau>3$. The regressions include hospital and state-by-year fixed effects. Regressions in columns 3 and 4 include CEO-id fixed effects. Regressions in columns 2 and 4 include as controls *CEO tenure*, *Multiple positions* and lagged values of *Margin*, log(*Admissions*), *Revenue growth*, and *Asset growth*, but only *Margin*, *CEO tenure* and *Multiple positions* are reported. Standard errors (in parentheses) are adjusted for heteroscedasticity and clustered at the hospital level. Significant at: *10%, **5% and ***1%.

VARIABLES	(1) Log(CEO pay)	(2) Log(CEO pay)	(3) Log(CEO pay)	(4) Log(CEO pay)
System acq. x t=[-3,-1]	0.031	0.043*	0.024	0.033
	(0.023)	(0.023)	(0.025)	(0.025)
System acq. x t=[0,3]	0.150***	0.180***	0.025	0.024
	(0.037)	(0.036)	(0.037)	(0.038)
System acq. x t >3	0.154***	0.169***	0.031	0.022
	(0.049)	(0.046)	(0.053)	(0.053)
Margin (t-1)		0.528***		0.464***
		(0.099)		(0.079)
CEO tenure		0.036***		-0.007
		(0.002)		(0.015)
Multiple positions		0.360***		-0.020
		(0.038)		(0.035)
Observations	17,679	17,031	16,901	16,256
R-squared	0.747	0.766	0.874	0.872
State-Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
CEO FE	No	No	Yes	Yes
Controls	No	Yes	No	Yes

Table A4: The effect of ACA on Medicaid and Charity expenditures

The table shows the effects of the Affordable Care Act (ACA) Medicaid expansion on hospitals' fraction of Medicaid-admitted patients (columns 1-3) and charity expenditures (columns 4-6), using the AHA sample. *ACA* takes a value of 1 for states that expanded Medicaid and years after the expansion. The decisions to expand Medicaid and the timing of the expansion varied across states (https://www.kff.org/medicaid/issue-brief/status-of-state-medicaid-expansion-decisions-interactive-map/). Columns 1 and 4 present difference-in-difference estimation results. As the ACA is defined at the state-year level, we replace state-year fixed effects with year fixed effects. Columns 2-3 and 5-6 present triple-difference specification results, with the third difference being the interaction between ACA and the *Nonprofit* dummy. We reintroduce state-year fixed effects in columns 3 and 6, so the standalone ACA coefficient is dropped due to collinearity. Control variables included in all specifications are *Margins*, *Dummy system*, and *log(Assets)*. The triple-difference specifications additionally includes the *Nonprofit* dummy and its interaction with a dummy that takes the value of 1 from 2014 onwards (i.e., the first year some states expanded Medicaid). Standard errors (in parentheses) are adjusted for heteroscedasticity and clustered at the firm level. Significant at: *10%, **5% and ***1%.

VARIABLES	(1) Medicaid	(2) Medicaid	(3) Medicaid	(4) Charity	(5) Charity	(6) Charity
ACA	0.031***	0.020***		-0.012***	-0.007***	
	(0.003)	(0.003)		(0.001)	(0.001)	
ACA x Nonprofit		0.020***	0.021***		-0.008***	-0.005***
		(0.003)	(0.005)		(0.000)	(0.001)
Observations	55,923	55,923	55,923	24,068	24,068	24,068
R-squared	0.702	0.703	0.714	0.672	0.683	0.738
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	No	Yes	Yes	No
State-Year FE	No	No	Yes	No	No	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sample	All	All	All	All	All	All

Table A5: The effect of ACA on governance

The table shows the effects of the ACA Medicaid expansion on several governance variables from the IRS nonprofit sample using a DiD methodology. *ACA* takes a value of 1 for states that expanded Medicaid and the years after the expansion (see Table A.4). As the ACA is defined at the state-year level, we replace state-year fixed effects with year fixed effects. Control variables include lagged values of *Margin*, log(*Admissions*), *Revenue growth, Investment, and Multiple positions*. Standard errors (in parentheses) are adjusted for heteroscedasticity and clustered at the firm level. Significant at: *10%, **5% and ***1%.

VARIABLES	(1) Director turn.	(2) Log(# Directors)	(3) All not independent dir.(%)	(4) CEO turn.	(5) Log(CEO pay)
ACA	-0.000	0.003	-0.001	-0.015	0.019
	(0.004)	(0.009)	(0.006)	(0.012)	(0.023)
Observations	21,624	12,811	12,805	22,141	19,755
R-squared	0.132	0.899	0.713	0.124	0.750
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
State-Year FE	No	No	No	No	No
Controls	Yes	Yes	Yes	Yes	Yes