Corporate behavior when running the firm for stakeholders: Evidence from hospitals

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ABSTRACT – We study how stakeholder orientation impacts firm management and performance. We exploit state-level law changes governing the conversion of hospitals from nonprofit to for-profit and find that for-profit orientation reduces hospital spending on emergency rooms, Medicaid patients, and social workers, while increasing focus on revenue. Consistent with spillovers, nonprofit hospitals located near converting hospitals experience increased emergency room visits and expenditures. Finally, we investigate governance channels that align corporate behavior with stakeholders and find that converted for-profit hospitals adjust boards by replacing MDs with MBAs, and that the tax code is a major source of governance for nonprofit hospitals.

keywords: Hospitals, for-profit, conversion of healthcare institutions laws, governance, stakeholders

Corporate governance research traditionally assumes that firm managers maximize shareholder value. However, a recent strand of the literature emphasizes the balancing of the interests of shareholders with those of a broader set of stakeholders (e.g., corporate social responsibility), and more work is needed to determine the degree this change in managerial focus affects firm behavior (Graham, 2022). One particularly important, yet understudied area of investigation, is the behavior of nonprofit entities that explicitly focus on benefiting the community at large as opposed to primarily benefiting shareholders. In this paper, we study the effects of the type of stakeholder orientation (i.e., shareholder versus stakeholder focus) by comparing the behavior of nonprofit firms with that of for-profit firms in the hospital sector.

A key challenge when comparing nonprofit organizations with for-profit organizations is that the two types of organizations are not evenly spread across the economy. While there are few nonprofits in, for example, the industrial or commodities sectors, they comprise an overwhelming majority of museums and universities. Although theory predicts large differences in the objective functions and governance mechanisms used by both types of entities (Glaeser, 2002), identifying the effect of stakeholder orientation on firm behavior is difficult, among other challenges, due to the lack of within-sector variation in stakeholder orientation.

We overcome this challenge by studying how the choice of stakeholders, or for-profit orientation, affects corporate behavior in a sector in which both nonprofits and for-profits directly compete: the hospital sector. Healthcare spending makes up 19.7% of U.S. gross domestic product (GDP), with hospitals accounting for about a third of this spending. About four out of every five hospitals are nonprofits, either because they are operated by the government or because they belong to private nonprofit organizations.[1] The share of for-profit hospitals has increased over recent decades, leading policymakers and patients to question whether for-profit hospitals provide the same quality and affordability of care as their nonprofit-oriented

[1]See data from CMS and BEA.

counterparts. Of particular concern is the possibility that, as hospitals shift from serving the interests of a broad set of stakeholders to serving the interests of shareholders, they could reduce unprofitable operations with high community value. On the other hand, others argue that hospitals, after converting to for-profit, may experience efficiency gains that allow them to improve both their financial performance and the provision of community benefits. This concern looms large given recent evidence on the importance of hospital finances for both hospital investment (Adelino et al., 2015) and clinical decision-making (Adelino et al., 2022). This paper contributes to this important debate by investigating the causal effect of for-profit orientation on a series of financial and operating outcomes of hospitals.

Identifying the effect of for-profit orientation on hospital outcomes is also challenging due to the inherent non-randomness of the choice to convert a hospital to *for-profit*. Non-profit hospitals often become for-profit after periods of prolonged weak financial performance, which leaves their assets depleted and limits their ability to finance crucial investments. For-profit conversion is usually a last resort to avoid closing the hospital altogether.[2] Thus, worsening hospital outcomes after a conversion may not be due to the conversion itself, but rather the result of the hospital's prior downward trajectory. On the other hand, steady or improved hospital outcomes after a conversion could merely reflect the replacement of inefficient management or the alleviation of financial frictions following the change in ownership.

We address this identification challenge by exploiting variation in the decision to convert a nonprofit hospital to for-profit that results from state-level changes in conversion of healthcare institutions laws. These laws often require mandatory approval of conversions by actors such as the state attorney general or a state public health agency, effectively creating hurdles to the conversion of nonprofit hospitals to for-profit. Specifically, we construct an index that tracks the introduction and removal of various provisions in these laws from 1990 to 2020 across all 50 U.S. states and use this index as an instrumental variable (IV) for the for-profit conversion decision. We show that the index is a strong predictor of the likeli-

[2]See, for example, Government Accountability Office (GAO) report.

hood that hospitals convert to for-profit, with hospitals in states with higher legal hurdles to conversion being substantially less likely to convert to for-profit.

Several tests support the validity of our IV. First, the legal provisions that we exploit are uniquely targeted towards the transition from nonprofit to for-profit. We show that these laws do not affect the likelihood of hospitals transitioning in the opposite direction (i.e., from for-profit to nonprofit). Similarly, we find that these laws do not impact mergers and acquisitions activity unrelated to changes to for-profit status. Second, we carefully consider the institutional and legal context of our setting (Karpoff and Wittry, 2018). Our framework considers existing "first generation" laws regulating the conversion of healthcare institutions, and we show that our results are not driven by the potential simultaneous passage of minor conversion requirements, such as public hearings. We further show that conversion law changes are not associated with political elections and are largely bipartisan. Moreover, we show that the effect of the index on for-profit conversion is not driven by lobbying or by a small number of hospitals that are targeted by specific legislation. Third, we also show that the passage of conversion of healthcare institution laws is not associated with the economic fundamentals of states or population trends, does not alter the average level of competition between hospitals, and is not the reaction to previous (or ongoing) hospital conversion waves. Overall, our results are consistent with the index affecting hospital outcomes only through the for-profit conversion decision (i.e., the exclusion restriction).

Using this IV regression approach, we find that hospitals that shift from stakeholder to shareholder orientation decrease the provision of unprofitable community-oriented services. Specifically, we find that converted hospitals reduce emergency room (ER) spending and ER outpatient visits, a central source of charitable (uncompensated) hospital care. Moreover, we find that for-profit conversion leads to fewer unprofitable Medicaid patients treated and to a decrease in intensive care unit (ICU) beds associated with less profitable trauma, psychiatric, and pulmonary patients. Finally, we document reductions in the provision of social work services, which are important for communities and patients, but not profit centers.

As for-profit hospitals decrease unprofitable activities, where do they direct their resources? We find that for-profit hospitals increase their emphasis on revenue generation and profitable services by increasing charges to patients for drugs and medical supplies. In addition, for-profit hospitals adjust their operations by increasing the number of profitable surgeries and the number of profitable surgical ICU beds, while reducing facility expenses, salaries, and the number of full-time physicians. Hospitals that shift to serving shareholders also worsen quality of care. We find that patient satisfaction significantly declines following a hospital for-profit conversion, and local medical costs increase while health outcomes deteriorate.

More broadly, we also document that changes in hospital focus have effects that go beyond just the converting hospital. After for-profit conversion, the number of patients treated by neighboring nonprofit ERs rises as the number of patients fall in the newly converted for-profit hospital. Since these additional patients increase the costs and strain on nonprofit hospitals, this result is consistent with for-profit conversions generating costly spillover effects. In line with this result, we also find a negative effect of for-profit status on local health outcomes.

Overall, our results show that for-profit hospitals cut down on unprofitable services, while simultaneously increasing their focus on revenue generation and profits. However, many of the services that for-profit hospitals stop favoring are typically associated with high community value. Thus, while not definitive, our results raise concerns as to whether for-profit conversions are good for social welfare.

Finally, we explore the mechanisms that connect stakeholder orientation and hospital behavior. Lewellen et al. (2023), document that corporate governance in nonprofit hospitals is relatively weak. How do nonprofit hospitals successfully align their actions with their mission? First, our findings point to a novel channel of corporate governance in nonprofits: the tax code. The services that hospitals reduce after conversion to for-profit are required prior to conversion to retain federal tax-exempt status under the Internal Revenue Services

(IRS) code. Second, we show that hospitals also leverage traditional corporate governance channels to align their actions. Specifically, we show that for-profit hospitals adjust their board composition by replacing MDs with MBAs.

Our paper relates to a growing literature on financial incentives and governance in the nonprofit sector (Glaeser, 2002; Graham, 2022). Adelino, Lewellen, and McCartney (2022) show that hospitals with stronger connections to physicians responded differently to the 2007–2008 Financial Crisis than their counterparts. Babenko et al. (2021) find that regulatory pressure can reduce the rents extracted by CEOs of nonprofits, effectively substituting shareholder pressure with regulatory pressure. Lewellen (2022) finds that female CEOs manage hospitals similarly to male CEOs. Lewellen et al. (2023) study the governance structure of nonprofit hospitals and show that nonprofit governance structures lack the attributes that the literature has traditionally associated with "good governance" in the for-profit setting. We complement the existing literature by showing that the type of orientation (i.e. stakeholder focus or shareholder focus) and its underlying objective function itself, rather than a particular governance mechanism, affects the management and performance of nonprofits, and we highlight governance decisions that facilitate the alignment of corporate actions with stakeholders, such as the changes in board composition after conversion.

Duggan (2000) exploits a change in California's medical system affecting hospital profitability to distinguish between two potential explanations for why nonprofit hospitals may behave differently than for-profit hospitals. The first explanation relates to the ease of appropriating profits (Glaeser and Shleifer, 2001), whereas the second explanation relates to nonprofit managers being more altruistic. By contrasting private and public organizations, the paper concludes that hospitals ownership structure is a key driver of hospital behavior. This finding is confirmed in an event study around hospital takeovers (Duggan et al., 2023). Our paper shows differences in the broader behavior of for-profit and nonprofit hospitals regardless of whether hospitals are private or public, and provides a novel explanation for these differences: governance by tax code.

Our paper also relates to the literature studying the effect of private equity ownership on healthcare outcomes (Harrington et al., 2012; Pradhan et al., 2013; Gupta et al., 2021; Gandhi et al., 2020; Bruch et al., 2020; Gao et al., 2021), and its impact on the interactions between hospitals and government programs (Liu, 2021). This research largely focuses on nursing homes, which are predominantly private for-profit organizations, and study the differences between for-profit orientation when profit motives are amplified by private equity and for-profit orientation with ordinary profit motives. Our paper complements this research by examining the differences in hospital outcomes between for-profits and *nonprofits*. Thus, our paper focuses on changes in stakeholder orientation rather than on changes in the *intensity* of shareholder orientation.

Finally, a large literature in health economics and public health examines the relationship between for-profit status and hospital behavior.[3] However, most of these studies are case studies or correlational in nature, and are often constrained by small, localized samples. Thus, it is not surprising that the literature shows a wide range of mixed results.[4] To our knowledge, our paper is the first to establish a *causal* relationship between for-profit orientation and a wide set of hospital outcomes.

1. Data and sample selection

1.1. Primary data

We obtain data from several sources. Hospital characteristics come from the American Hospital Association's (AHA) database, which is compiled from the annual survey of the AHA to its member hospitals (which comprise nearly all hospitals in the U.S.). These data include information regarding the types of hospital ownership, which we use to classify hospitals into government, nongovernment (i.e., private nonprofit), and investor-owned (i.e.,

[3]See Sloan (2000) for an overview of the early literature.

[4]For example, Joynt et al. (2014) find positive effects of for-profit orientation, whereas Horwitz (2005a) and Paul et al. (2020) find opposite results. Other studies of nonprofits and for-profits in the hospital sector yielding mixed results include Needleman et al. (1999), Young and Desai (1999), Hadley et al. (2001), Sloan et al. (2001), Sloan (2002), David (2009), and Hansen and Sundaram (2018).

for-profit). In addition, these data include detailed information about hospital expenses on facilities and payroll, the number of hospital beds and their use, hospital staff (e.g., physicians, dentists), and social work activities.

Next, we merge the previous data with data from the Healthcare Cost Report Information System (HCRIS). The HCRIS provides information from cost reports submitted annually to the Center for Medicare and Medicaid Services (CMS) by all Medicare institutional providers, including hospitals. The data from 1995 to 2021 are publicly available from the CMS' website. We extend our sample back to 1991 by requesting additional data from the CMS. These data include important variables for our empirical analyses, such as the costs of operating ERs and ICU units, patient charges related to medical supplies and drugs, Medicare/Medicaid inpatient days, hospital revenue, and hospital assets and liabilities. Finally, we manually collect information on conversion of healthcare institutions laws. We describe these data and how we use it in more detail in Section 2.

1.2. Secondary data and final sample

We merge our primary data with several macroeconomic variables at the state level. Data on unemployment rates, population, and income per capita come from the Bureau of Economic Analysis (BEA). In addition, we obtain information on state-level healthcare spending from CMS, information on Healthcare Service Areas (HSA)-level hospital discharges and Medicare reimbursements from the Dartmouth Atlas Project, and data on state-level and county-level age-adjusted mortality rates from the Centers for Disease Control and Prevention (CDC). Finally, we measure hospital care quality using patient evaluations from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) data.[5]

Our final dataset is organized at the hospital-year level, spanning from 1991 to 2019 and covering all private and public nonprofit hospitals. We exclude federal hospitals since

[5]These patient evaluations are based on patient satisfaction surveys mandated by the CMS that are administered to a random sample of adult patients across various medical conditions after their discharge. The core questions cover the critical aspects of patients' hospital experiences.

they operate under their own (separate) regulatory framework and keep all hospitals that are nonprofit at the beginning of our sample period.[6] After excluding data with missing observations, our final sample consists of 5,064 hospitals, of which, 509 eventually convert from nonprofit to for-profit during our sample period.[7] Table 1 presents summary statistics for nonprofit hospitals (Panel A) and for-profit hospitals (Panel B). For-profit hospitals have fewer hospital beds, doctors, payroll expenses, and facility expenses.

[Insert Table 1 here]

2. Empirical framework

The main objective of this paper is to study the effect of stakeholder orientation on the management and performance of hospitals. Thus, the baseline regression is of the form

$$Y_{i,t} = \alpha_1 + \beta_1 1(for\ profit)_{i,s,t} + X'_{i,l,t}\Gamma_1 + \epsilon_{1,i,s,t}, \tag{1}$$

where $Y_{i,t}$ is the outcome of interest (e.g., ER expenditures) of hospital i in year t,[8] $1(for\ profit)_{i,t}$ is an indicator variable that takes the value of 1 if hospital i has for-profit status in year t, and $X'_{i,s,t}$ is a vector of hospital-level control variables, state-level economic indicators, and hospital and year fixed effects. Standard errors are clustered at the hospital level to account for serial correlation in error terms within a hospital (e.g. Aghamolla et al. (2021), Gao et al. (2021), Lewellen et al. (2023)).

However, estimating Equation (1) is unlikely to be informative. The main challenge in identifying the effect of for-profit status on hospital outcomes is that hospitals do not change

[6] This is consistent with the difference-in-differences literature that stresses the importance to exclude *always-treated* observations (De Chaisemartin and d'Haultfoeuille, 2022).

[7] Figure IA.1 of the Internet Appendix plots the number of for-profit conversions over time and shows that there is significant variation in the timing of conversions throughout our sample period.

[8] A change in for-profit status may coincide with shifts in the size of hospital operations. For-profit hospitals tend to be smaller than nonprofit hospitals and for-profit owners could downsize hospitals to save costs or expand them to increase revenue. To avoid the possibility that our results are driven by contemporaneous changes in hospital size, rather than a shift in the priorities of management, we scale outcome variables by the number of inpatient beds.

status randomly. Nonprofit hospitals mostly convert to for-profit following long periods of poor performance, which draw down reserves to a degree that they cannot continue to finance their ongoing operations or the necessary capital investments (Sloan et al., 2007).[9] We confirm this conjecture in Table IA.1 of the Internet Appendix, where we compare summary statistics for nonprofit hospitals which later converted to for-profits with those of hospitals which never convert. Hospitals which converted to for-profit tend to be smaller and have worse financial performance, which is consistent with the idea that hospital conversions occur at the end of a period of deteriorating financial performance. Thus, a simplistic comparison of hospital outcomes before and after conversion does not allow differentiating between the effect of alleviating capital constraints, a change in ownership and management, and the effect of being "for-profit" (i.e., β_1 is likely to be biased). Possibly due to this challenge, early studies on this topic have not found a consistent connection between hospital for-profit status and hospital actions (Sloan et al., 2001; Joynt et al., 2014).

To overcome this challenge, we exploit variation in stakeholder orientation that results from state-level law changes governing the conversion of hospitals from nonprofit to for-profit. About half of U.S. states have passed legislation regulating the conversion of healthcare institutions. These laws, many of which were passed during a wave in the late 1990s, feature several provisions limiting the ability of charitable hospitals to convert to for-profit. We focus on the three types of provisions typically considered to be the most relevant. Specifically, we consider provisions that require for-profit conversions to be approved by the state's attorney general or by another state-level agency. We also consider the requirement of a "certificate of need," which mandates the review of major changes of ownership and investment in the healthcare sector.[10]

We construct an index based on these three types of legal provisions for all 50 U.S. states

[9] Lu and Lu (2021) describe a similar dynamic in the nursing home sector, with financially underperforming nursing homes being the most likely to convert to for-profit status.

[10] Note, these provisions consist of "hard vetoes," which can prevent hospital conversions if exercised. Certificate of need provisions were originally introduced to curb excessive competition in the healthcare sector, and were effectively mandatory under federal law from 1974 until 1987.

going back to 1990. The index captures the introduction and the removal of these regulatory hurdles. For example, an index equal to 0 signals a state without impediments to conversion, whereas an index equal to 3 signals a state that requires attorney general approval, second agency approval, as well as a certificate of need. Therefore, a higher index value indicates more hurdles for a nonprofit hospital to convert to for-profit. Figure 1 plots the geographic distribution of the index in 1990 (Panel A) and 2010 (Panel B).[11] Overall, the figure shows that there is substantial variation in the value of the index both across states and time.[12]

[Insert Figure 1 Here]

To overcome the selection concern described above and identify the effect of stakeholder orientation on hospital outcomes, we follow a two-stage least-squares/IV (2SLS/IV) framework. More specifically, we use the previously described index as an instrument for the for-profit conversion decision of hospitals. From here on, we refer to this index as the *conversion index*. Thus, the first-stage regression is

$$1(for\ profit)_{i,t} = \alpha_2 + \beta_2 Conversion\ Index_{i,s,t-1} + X'_{i,s,t}\Gamma_2 + \epsilon_{2,i,s,t}, \tag{2}$$

where the instrument $Conversion\ Index_{i,s,t-1}$ is our measure of the level of regulatory hurdles to for-profit conversions of hospitals in hospital i's state s in year $t-1$ (i.e., the index is lagged one year). The second-stage regression is

$$Y_{i,t} = \alpha_3\beta_3 1(\widehat{for\ profit})_{i,t} + X'_{i,s,t}\Gamma_3 + \epsilon_{3,i,s,t}, \tag{3}$$

where $1(\widehat{for\ profit})_{i,t}$ are the fitted values from Equation (2). If the conversion index is a valid instrument, then $\beta 3$ is consistent.

[11] Figure IA.2 of the Internet Appendix plots the distributions in 2000 and 2019.

[12] The index increases over time for most states except for Alabama and Illinois. We find 29 changes in the index in 27 states throughout our sample period. Index changes range from -2 (representing the removal of two provisions) to +3 (representing the introduction of all three provisions). Most changes occurred in an initial wave in the late 1990s, however, there were also 9 changes after the year 2000. Table IA.2 of the Internet Appendix presents summary statistics for the conversion index and its components.

3. The conversion index as an instrument

3.1. First-stage regression

We begin our analysis by estimating the first-stage regression from Equation (2). For ease of interpretability, we standardize $1(for\ profit)$ to have a mean of zero and standard deviation of one. Table 2 shows the estimation results.

[Insert Table 2 here]

The most basic specification in column 1, which only includes hospital and year fixed effects, yields a coefficient estimate on the conversion index of -0.067, statistically significant at the 1% level. This coefficient indicates that conversion of healthcare institutions laws prevent hospital for-profit conversions and is consistent with the relevance condition of the IV estimation being satisfied.

However, it is possible that both the conversion decisions and the legal environment surrounding the conversion could be driven by a state's size, growth, or the economic cycle more generally. In column 2 of Table 2, we control for these potential confounding factors by adding state-level controls for income per capita, population size, and unemployment rate. In addition, since the summary statistics in Table IA.1 show that hospitals that decide to convert to for-profit status are different from other hospitals in both size and financial dimensions, we also add controls for the characteristics of hospitals (column 3) and their financials (column 4). In all specifications, our coefficient estimates on the conversion index remain stable both in terms of economic and statistical significance, with our most stringent specification yielding a coefficient of -0.058.

The conversion index shows not only economic relevance but also statistical power. The Kleibergen-Paap F-statistic of the entirety of the first stage is 17.24, well above the critical Stock and Yogo level for a maximum 10% bias in instrument size, and the individual F-statistic for the index in the most stringent specification is close to 16. Thus, the conversion

index not only meets the relevance condition but also shows properties that alleviate the concern of a weak instrument.

In the Internet Appendix, we present a series of additional robustness tests for our first-stage regressions. First, in Table IA.3, we show that our results are robust to variations in the degree to which we lag the conversion index. Specifically, first-stage coefficient estimates are robust to either not lagging the conversion index at all or lagging it by two years. Second, in column 1 of Table IA.4, we show that our results are robust to an event-centering approach that alleviates potential concerns with the staggered two-way fixed effects model in our analysis.[13] Finally, in column 2 of Table IA.4, we collapse the conversion index into a single indicator taking the value 1 for all observations in which at least one conversion of healthcare institutions law occurred. Results remain unchanged.

3.2. Additional instrument validation

Next, we investigate potential alternative channels through which the conversion index may impact hospital behavior and affect the validity of the exclusion restriction of the IV estimation. Studies exploiting state-level law changes need to carefully account for the legal and institutional context. Specifically, we implement three main groups of tests proposed in Karpoff and Wittry (2018) to validate the conversion index as an instrumental variable.

3.2.1 Lobbying and political elections

The first set of tests focuses on one of the main challenges that studies exploiting law changes face: the possibility of lobbying. If a subset of affected firms were to influence the legislative process to suit their needs, the identifying assumption of the quasi-exogeneity of the law changes would be violated.[14]

[13]The inclusion of event-time fixed effects drastically reduces our sample by 60% as we can only draw inference from states with actual law changes. However, the inference is still that a higher level of anti-conversion legislation reduces the propensity of conversion, even in this restricted sample.

[14]For example, in the case of business combination laws, Karpoff and Wittry (2018) show that the effects on firm behavior following the passage of these laws are concentrated in companies which had actively lobbied

To alleviate the concern that lobbying could impact our findings, we conduct a detailed news search in the two-year window surrounding each of the 29conversion law changes that occur in our sample period. We identify whether (1) any lobbying occurred, (2) lobbying occurred and was associated with a specific for-profit conversion, and (3) lobbying occurred and was conducted by nonprofit or for-profit hospital organizations. We then re-estimate our first-stage regression, excluding those states that show evidence of lobbying (based on the previous categories). The results are presented in Table **3**.

[Insert Table **3** here]

In column 1 of Table **3**, we exclude states in which we identify lobbying that is directly linked to the passage of conversion of healthcare institutions laws. In column 2, we exclude states in which we identify general medical sector lobbying surrounding the passage of conversion of healthcare institutions laws, without reference to the specific laws (i.e., "indirect lobbying").[15] In both cases, the first-stage coefficient remains statistically and economically very similar to that obtained from the full-sample estimation. In columns 3 and 4, we exclude states in which the lobbying effort can be traced to for-profit and nonprofit groups, respectively, to address the possibility that lobbying could be particularly strong if it comes from one specific group of hospitals (e.g., for-profit hospital associations). Our first-stage regression results remain robust, alleviating concerns that lobbying could drive our findings.

Another potential concern with the law changes that we utilize could be that they are the result of broader political posturing around elections. For example, if politicians running for office make conversion of healthcare institutions part of their campaign, the passage of these laws may systematically coincide with gubernatorial elections or other political and economic changes surrounding them. This can be an even bigger concern if one of the two main political parties systematically champions for conversion of healthcare institutions laws,

for them, calling into question the causal relationship between the passage of the laws and changes in firm behavior.

[15]Such indirect lobbying includes, for example, fights over the privatization of state-owned insurance companies.

meaning their passage systemically coincides with the election of governors from one specific party.

To address this concern, we collect data on gubernatorial elections surrounding the passage of all 29 law changes in our sample. First, we note that there is no pattern of partisan preferences among those changes. Of the 29 law changes, 12 were passed by Democratic governors, 15 by Republican governors, and two by independents.[16] Thus, changes in conversion of healthcare institutions laws appear to be non-partisan. Regardless, in column 5 of Table **3**, we exclude states in which the passage of conversion of healthcare institutions laws coincided with gubernatorial election years and we find that the first-stage regression coefficient remains almost unchanged.

3.2.2 First-generation and second-generation laws

A second set of potentially relevant factors that may affect the instrument's validity are the historical development of legal provisions.[17] In our setting, the candidate that is likely to be the most relevant among "historical" laws is the certificate of need (CON) provision. CON laws are intended to control healthcare costs by avoiding unnecessary over-investment in healthcare facilities and require state approval for major capital investments in healthcare. For-profit conversions often trigger these clauses, either because CON laws explicitly cover merger activity or because the conversion is associated with (dis)investments.[18]

To avoid the possibility that the legacy presence of CON laws drives our results, we carefully track CON law levels throughout our sample period, to avoid instances where laws

[16]In the two states that reduced the hurdles to conversion, one reduction occurred under a Democratic governor and one reduction occurred under a Republican governor.

[17]For example, in the case of business combination laws, Karpoff and Wittry (2018) show that in some cases the laws studied were in fact second-generation laws which partly re-instated previous provisions. As a result, some years assigned to the pre-treatment period actually feature first-generation business combination laws that are potentially more impactful than the second-generation laws used to define the treatment period.

[18]The first CON law was introduced in New York in 1964 (Simpson, 1985). In 1975, Congress passed the National Health Planning and Resources Development Act (NHPRDA) which effectively mandated state level CON laws for access to federal funds. As a result, all states except Louisianan had CON laws in place by 1982. In 1987, the federal mandate on CON laws was repealed, and, as a result, only 32 states had a CON law in place at the start of our sample period.

are first abolished and then re-established. In addition, we include these first-generation CON laws as part of our conversion index, making sure we take their presence into account.

Our two other index components, approval by state attorney general or other agencies, are novel features introduced in conversion of healthcare institutions laws in the late 1990s. In Panel A of Table 4, we separately investigate the three components of our index. We find that each index component, not just CON laws, is negatively associated with hospitals' for-profit conversions. Thus, each of our individual index components is an important, independent measure of legal hurdles against hospital conversions to for-profit status.

[Insert Table 4 here]

The final challenge in the spirit of Karpoff and Wittry (2018) is the potential presence of other rules and laws that might overlap with the one studied in a specific setting.[19] To address this potential concern, we collect additional data on numerous other laws and regulations regarding the for-profit conversion of hospitals. Specifically, we investigate various provisions contained in two types of model legislation that influenced many conversion laws: (1) the 1997 National Association of Attorneys General model act and (2) the 2003 model act created by two non-governmental organizations, Community Catalyst and Consumers Union.[20]

These model acts contain a variety of rules regarding various aspects of the hospital conversion process that are of lesser importance than an outright veto power, as measured by our conversion index. These rules could, nonetheless, still act as a deterrent for hospital conversion. Thus, we collect additional information in each state and year on the presence of the following secondary provisions: (1) the requirement of advanced written notice to state attorney general (AG) before conversion, (2) a non-binding form of AG recommendation (i.e., a right to challenge the deal by the AG), (3) the possibility of public notice or public hearings, and (4) whether the law allows for ex-post monitoring of the transaction.

[19]For example, in the case of business combination laws, contemporaneous poison pill measures may confound inference.

[20]See government accountability office report for detailed description and comparison at https://www.gao.gov/assets/hehs-98-24.pdf.

In Panel B of Table 4, we re-estimate our first-stage regression using indicator variables for each secondary provision as the main independent variable. We find that all four secondary components from the model legislation have an economically and statistically insignificant association with for-profit conversion.

3.2.3 Effects on general M&A activity

Another concern related to the instrument's validity is that conversion of healthcare laws may not merely impact the conversion of hospitals to for-profit status, but also reduce the likelihood of conversions in the opposite direction, or hamper mergers and acquisitions (M&A) activity more generally.

Thus, we begin by investigating if conversion of healthcare institutions laws impact conversions from for-profit to nonprofit. If our index also impacted this type of conversion, our results may not capture the effect of for-profit conversion, but rather an effect from a decrease in nonprofit conversion. To test for this possibility, we create a sample of beginning-of-sample period for-profit hospitals analogous to our main sample construction, and construct a new indicator variable, *1(nonprofit)*, that takes value 1 if a hospital is a nonprofit. We estimate regressions similar to our first-stage regressions using *1(nonprofit)* as dependent variable. Column 1 of Table 5, shows no evidence of a relationship between conversion of healthcare institutions laws and for-profit to nonprofit conversion.

[Insert Table 5 here]

Next, we examine the concern that conversion of healthcare institutions laws capture a generally negative climate for M&A activity in the healthcare sector. To test for this possibility, we obtain data on mergers from Cooper et al. (2019).[21] The data show that, while some mergers lead to a change to from nonprofit to for-profit, most mergers are between institutions of the same for-profit status. Out of the 1,137 merger events for 985 hospitals

[21]These data, which only covers 2000 to 2014, do not perfectly overlap with our sample leading to a smaller sample size in these tests.

in our sample, only 78 (8%) led to a for-profit conversion. In column 2 of Table 5, we investigate whether conversion of healthcare institutions laws impact merger activity more broadly, rather than just through for-profit conversion. The outcome variable is *1(target)*, an indicator that takes the value 1 if a hospital is the target of an M&A transaction in a given year (regardless of whether the takeover attempt is by a for-profit or nonprofit hospital). We find no statistical or economically significant relationship between conversion of healthcare laws and general M&A activity.

3.2.4 Effects on market competition

We implement one last test to further validate the use of our conversion index as an instrument, which we report in the internet appendix. Specifically, we investigate if conversion laws are associated with changes in market competition. One additional challenge to the exclusion restriction may be that states with more stringent laws see a generally lower level of hospital concentration, resulting in lower competition that may affect hospital behavior.[22] In Table IA.5, we present results from panel regressions of county-level Herfindahl-Hirschman indices on the conversion index. The coefficients associated with the index are economically close to zero and statistically insignificant in all specifications, providing no support to the notion that conversion of healthcare institutions laws could be associated with changes in the competitive environment of hospitals.

3.3. The determinants of the conversion Index

We conclude this section by investigating what drives changes in hospital conversion laws. For example, conversion index changes could be due to an ongoing conversion wave. In this case, changes in conversion status would drive the index, rather than the index impacting conversions. Alternatively, failed for-profit conversions could lead state legislators to regulate

[22]This is particularly relevant as one of the three provisions captured by the conversion index (i.e., the certificate of need requirements) apply to all hospitals irrespective of for-profit status.

hospital for-profit conversion,[23] or the willingness of states to modify conversion laws may be related to state healthcare provisions such as hospital care spending, hospital discharges, and mortality rate. Finally, changes in hospital conversion laws may be driven by economic fundamentals or political ideology.

In Table IA.**6** of the Internet Appendix, we estimate regressions of year-over-year changes in the conversion index on different variables that attempt to capture the previously described potential drivers, and do not find economically meaningful relationships between any of the variables and changes in the index.[24]

4. The effects of shareholder focus

4.1. Hospital output with high community value

We begin this section by examining whether firm for-profit orientation reduces the provision of likely unprofitable, community-oriented services. Specifically, the most prominent of the activities we examine is the provision of ER care, irrespective of patients' ability to pay. ERs provide basic medical services as a form of safety net and are a major source of charity care (Horwitz, 2005b; Morganti et al., 2013). Therefore, our first outcome of interest is hospital emergency room expenditures. As hospitals change from nonprofit to for-profit, they might cut back expenditures on this cost center.

Panel A of Table **6** presents the results from estimating Equation (3) using ER expenses as the dependent variable. Standard errors are clustered at the hospital level to account for serial correlation in error terms within a hospital. For ease of interpretation, we standardize our main instrumented indicator variable, *1(for-profit)*, so that the coefficient estimate

[23]We consider a for-profit conversion as "failed" when the hospital converts back to nonprofit or shuts down within 5 years.

[24]Specifically, we include measures related to hospital spending and discharges, age-adjusted mortality rates, population size, population income, unemployment rate, number of hospitals, number of for-profit conversions, number of failed for-profit conversions, and the political party in control of the governorship. The only variable that is statistically significant at the 10% level is the number of previous for-profit conversions. However, the variable has an economically very small effect. A one standard deviation increase in the number of conversions in our sample (1.06) is associated with an index change of 0.01 points.

can be interpreted as the change in the outcome variable resulting from a one-standard-deviation change in the (instrumented) likelihood of being for-profit. In columns 1 through 4, we progressively control for state-level characteristics, hospital-level characteristics, and hospital financials. The coefficient associated with for-profit conversion ranges from -0.058 to -0.049. Specifically, in our most stringent specification (column 4), a one-standard-deviation increase in the likelihood of being for-profit decreases ER expenditure per bed by $55,000, a substantial amount compared to the sample mean of about $40,000.[25]

[Insert Table **6** here]

Another major cost center with high community value is the provision of services to Medicaid patients. Private insurance pays hospitals about 75% higher average rates than Medicaid (Selden et al., 2015), and Medicaid reimbursement covered just 87 cents for every dollar of costs in 2017, on average.[26] Thus, one could expect a reduction in the provision of medical services to Medicaid patients after hospitals' become for-profit. We test this conjecture by estimating Equation (3) with Medicaid inpatient days as the dependent variable, and report the results in Panel B of Table **6**.

The results show that, across specifications, a one-standard-deviation increase in the likelihood of becoming for-profit leads to 11–13 fewer Medicaid inpatient days per bed, consistent with hospitals cutting lower-paying Medicaid interactions following for-profit conversion.

Next, we turn to another unprofitable part of hospital operations: the provision of critical care beds not associated with surgery. These beds include cardiac, neonatal, pediatric, burn, and other ICU beds (Barrett et al., 2015). Importantly, all these types of critical care are relatively unprofitable (Horwitz, 2005b) but provide potentially large community benefits.

[25]This large economic magnitude likely reflects that the IV coefficient estimate captures the local average treatment effect (LATE) on ER expenditure on those hospitals that would have converted to nonprofit in the absence of conversion of healthcare institution laws, that is, the compliers. These compliers are likely hospitals in substantial financial trouble and with large initial ER expenditures, which could explain these high estimates.

[26]See Dranove and White (1998) and Frakt (2011) for evidence on Medicaid reimbursement in earlier years.

In fact, the reduction in such beds, especially pulmonary critical care beds by for-profit hospitals has been discussed as a potential amplifier of the damage caused by the COVID-19 pandemic. Column 1 of Table 7 shows that for-profit hospitals indeed reduce the provision of these non-surgical ICU beds.

[Insert Table 7 here]

We examine another measure of "community benefits" in column 2 of Table 7, namely if for-profit conversion leads to a lower propensity to provide social worker services. These services are not revenue-generating but are associated with lower rates of re-admission after treatment. Therefore, they provide benefits to patients and their communities, but not to hospitals (Steketee et al., 2017). In column 2, the outcome variable in the second stage of our 2SLS estimation is the indicator *1(social work services)*, which takes the value 1 if a hospital provides social work services. We find that, while 87% of our sample hospitals provide social services, a one-standard-deviation increase in the likelihood of being for-profit reduces the prevalence of social work services by a sizable 15.2 percentage points (ppt).

Taken together, the previous results suggest that for-profit orientation reduces the provision of unprofitable, community-oriented services consistent with a change in stakeholder orientation away from communities and towards shareholders.

4.2. Profit-generating activity

For-profit hospitals may not merely reduce unprofitable activities that provide community benefits but also increase their focus on revenue generation. Next, we examine this possibility.

Columns 1 to 3 of Table 8 present results from the second stage of our 2SLS estimation for three outcomes: (1) the amount of medical supplies charged to patients (column 1),(2) the amount of drugs charged to patients (column 2), and (3) the number of surgical ICU beds (column 3).[27] Consistent with the idea that for-profit hospitals increase medical charges

[27]Since a rise in medical charges could simply reflect higher hospital utilization under new and improved management, we scale the first two outcomes by the amount of care provided, that is, the number of inpatient days. Similarly, we scale the number of surgical ICU beds by the total number of beds in the hospital.

to patients, we find substantial increases in charges associated with both medical supplies and drugs. Similarly, column 3 shows that there is a substantial increase in the number of surgical ICU beds at for-profit hospitals. As surgeries are considered a particularly profitable part of hospitals' operations, this result is consistent with the idea that for-profit hospitals have a stronger focus on profits, and it stands in contrast to the reduction in non-surgical ICU beds we documented previously.

[Insert Table **8** here]

In columns 4 to 6 of Table **8**, we turn our attention towards the cost side of hospital operations, in addition to costs associated with the provision of community benefits. First, we find that for-profit status is associated with substantially lower facility expenses (column 4). In addition, Glaeser (2002) predicts that in the absence of shareholders as residual claimants, non-profits should have a tendency to overspend on personnel, particularly personnel close to management. Consistent with this idea, column 5 shows a reduction in the number of full-time doctors employed by the hospital, and column 6 documents a decrease in payroll. These results could reflect either a general increase in efficiency, or a substitution of doctors with less-trained and lower-paid professionals such as nurse practitioners (Geurts-Laurant et al., 2004; Laurant et al., 2018; Goryakin et al., 2011). Overall, the results in this section support the idea that hospitals with for-profit orientation cut costs and expenditures while increasing revenue to increase margins.

4.3. Patient health

A shift from stakeholder to shareholder orientation could impact hospitals beyond their financial focus; it could impact the provision and quality of healthcare itself. In this section, we examine this possibility. We measure hospital care quality using (mandatory) CMS patient satisfaction survey data.[28] Because rating scales differ across the survey's questions,

[28]These data are available at https://data.cms.gov/provider-data/dataset/dgck-syfz.

we follow the literature and define the outcome variable of interest as the share of patients that give the highest rating to each question (e.g. Aghamolla et al. (2021)).

Table 9 presents ordinary least squares (OLS) regressions where the dependent variables are different measures of patience satisfaction (e.g., quality of doctor and staff communication, quality of pain management, hospital rating) and the independent variable of interest is the indicator variable for for-profit status. Results show that, across all question categories, patient satisfaction decreases after nonprofit hospitals convert to for-profit. Specifically, for-profit conversion is associated with worse communication by doctors, nurses, and staff (columns 1 to 3). Similarly, patients at for-profit hospitals report having received less help from medical professionals regarding their health concerns, and worse quality of pain management (columns 4 and 5). Likewise, patients report poorer hospital ratings and that they are less willing to recommend the hospital to others (columns 6 and 7). Overall, the results in Table 9 are consistent with our previous findings that for-profit hospitals tend to hire fewer employees and reduce facility and payroll expenses, which increases profits for shareholders while reducing the benefits to important stakeholders (i.e., the patients).

[Insert Table 9 here]

Next, we consider the effect of for-profit orientation on health outcomes for the community more broadly. We focus on four different aspects, including medical costs, patient discharges, end-of-life inpatient care, and mortality. Specifically, from the Dartmouth Health Atlas Project, we obtain HSA-level measures of price-adjusted Medicare reimbursements per enrollee to proxy for medical costs, medical discharges per 1,000 Medicare enrollees to proxy for total healthcare provision, and the percent of Medicare decedents hospitalized at least once during the last six months of their lives to proxy for end-of-life inpatient care. Due to the lack of HSA-level mortality data, we obtain county-level mortality rates from the CDC WONDER online databases. Since we are limited to regional health data, we restrict the sample to HSA regions with only one hospital, where the conversion from nonprofit to for-profit of the only hospital in the area is most likely to influence our health measures.

The 2SLS results in Table **10** show that for-profit status is positively associated with local medical costs (column 1), and negatively associated with medical discharges and end-of-life inpatient care (columns 2 and 3, respectively). Finally, for-profit conversion appears to be positively associated with local mortality rates (column 2).

Overall, the results in this section show a general deterioration of health outcomes after a for-profit conversion and are consistent with the declines in patient health and compliance with care standards documented at nursing homes after private equity buyouts Gupta et al., 2021.

[Insert Table **10** here]

4.4. Spillover effects

A change in hospital's corporate behavior resulting from a change in stakeholder orientation may impact not just the converted hospital itself, but also the surrounding hospitals. For example, if a converted hospital downsizes its ER, some of the unmet demand for ER services from local residents might spill over into the neighboring hospitals (due to longer waiting times, lower quality of care, or simply because the downsized ER is not able to take all patients). Such spillovers to neighboring hospitals could explain part of the effects on the health outcomes documented in the previous section. In this section, we take an initial step towards the analysis of spillover effects stemming from hospital conversion to for-profit. To do so, we estimate a difference-in-differences specification that captures the effect of for-profit conversions on the neighboring nonprofit hospitals. Specifically, we estimate the following regression:

$$Y_{i,t} = \alpha_4 + \beta_4 1(nonprofit) \times 1(post\ conversion)_{i,s,t} + X'_{i,s,t}\Gamma_4 + \epsilon_{4,i,s,t}, \tag{4}$$

where the explanatory variable of interest is $1(nonprofit) \times 1(post\ conversion)_{i,s,t}$, the interaction of two indicator variables. The first variable, $1(nonprofit)$, is an indicator for

the nonprofit status of a hospital. The second variable, 1(*post conversion*), is an indicator that takes the value 1 in years following the for-profit conversion of a hospital in the same HSA. The outcome variables of interest are the number of emergency room visits (column 1 of Table 11) and the total cost of emergency rooms (column 2 of Table 11). If hospitals converting to for-profit downsize their ERs, one could expect an increased burden from higher utilization (and costs) to neighboring nonprofit hospitals. Consistent with this idea, we find a positive and statistically significant increase in both the volume and cost of ER care for nonprofit hospitals following a for-profit conversion of a neighboring hospital. To the best of our knowledge, this is the first evidence of such spillover effects in the literature and this evidence can inform the current policy debate on the consequences of hospital for-profit conversion.

[Insert Table 11 here]

5. Corporate governance channels

This section discusses different ways in which both classic governance channels and the tax code may connect hospital operations to the objective function different types of stakeholders.

5.1. Corporate governance through boards

The main mechanism through which the actions of organizations are aligned with the interests of stakeholders is the board of directors. We obtain data on board composition for a subset of for-profit and nonprofit hospitals from Execucomp.[29] Specifically, we examine the mix of educational and professional backgrounds of directors following for-profit conversion. Table 12 presents the results of OLS regressions of changes in board composition on changes to for-profit.

[29]Board composition data is available more widely for nonprofit hospitals through regulatory filings, but not for for-profit hospitals. We choose to limit our sample to hospitals in Execucomp to have the most comparable subsets of hospitals.

[Insert Table **12** here]

In column 1, the dependent variable is an indicator for having at least one board member holding an MBA or JD degree. The coefficient estimate of 0.268 indicates that for-profit conversion is associated with a 26.8 ppt increase in the likelihood that the board features at least one board member with an MBA or JD, that is, business-oriented professional degrees. On the other hand, column 2 (which considers an indicator for at least one board member holding a MD degree as dependent variable) shows that there is a 37.5 ppt decrease in the likelihood of having at least one MD on the board, on average. These results are consistent with for-profit owners shifting the expertise and focus of the board, the main governance organ, to business rather than to medicine. These results are also consistent with the larger sample summary statistics and analyses of governance in hospitals provided by Lewellen et al. (2023).

5.2. Corporate governance through the tax code

Hospitals have historically had nonprofit status in the U.S. Early hospitals were essentially charitable organizations providing basic healthcare to ordinary citizens, financed exclusively through donations. Tax exemption for these charitable hospitals has been a staple of American tax codes since the 1984 Wilson-Gorman Tariff Act (Arnsberger et al., 2008; Gentry and Penrod, 2007). Over time, legislators became concerned that the tax-exempt status of private foundations could be abused for tax evasion, leading to changes in the Tax Reform Act of 1969 that require tighter documentation of the charitable nature of operations to qualify for tax exemption.[30]

Specifically, the IRS calls for six provisions for hospitals to qualify for nonprofit status: (1) operating an emergency room open to all, regardless of ability to pay, (2) maintaining a board of directors drawn from the community, (3) maintaining an open medical staff policy,(4) providing hospital care for all patients able to pay, including those who pay their

[30]See IRC section 501(c)(3).

bills through public programs such as Medicaid and Medicare, (5) using surplus funds to improve facilities, equipment, and patient care, and (6) using surplus funds to advance medical training, education, and research.

Hospitals that qualify for tax-exempt status under these conditions are exempt from most federal and state taxes, including tax on corporate profits or property taxes. These hospitals also qualify for charitable donations and enjoy effectively subsidized access to capital through tax-exempt status of their bonds (Gentry and Penrod, 2007). The idea behind the tax exemption is that hospitals use these benefits to finance the provision set out in the tax code, which are unprofitable. Of particular concern are Medicaid patients (Selden et al., 2015) and emergency rooms, which constitute a bulk of uncompensated care (Horwitz, 2005b; Morganti et al., 2013) and require subsidization. Therefore, we hypothesize that for-profit hospitals would scale back these services after they are no longer required to provide them.

Our results are consistent with these tax incentives being a major driver that aligns hospital behavior with stakeholders. As hospitals convert from nonprofit to for-profit, we show that they reduce all these activities that were previously mandated by the tax code to retain tax-exempt status. As shown in the previous sections, newly converted for-profit hospitals shuffle their boards, reduce the size of their emergency room and treatment of Medicaid patients. The tax code appears to be a substitute to the weak traditional governance mechanics in nonprofit hospitals documented in Lewellen et al. (2023).

6. Cross-sectional heterogeneity

In this section, we investigate whether the effects we document vary in the cross section based on pre-conversion ownership status (i.e., private versus public) and patient income. We focus on the subset of outcomes that relate to the provision of community benefits by hospitals.

6.1. Ownership status

We first consider heterogeneity in responses to for-profit status based on hospital pre-conversion ownership status. Decision-makers in private nonprofit hospitals could be as responsive to incentives as their counterparts in for-profit facilities, as it relates to revenue generation. If private nonprofit hospitals behave similarly to for-profit hospitals, our results could be mainly driven by the privatization process, rather than by the conversion from nonprofit to for-profit.

To examine this possibility, we split our sample based on hospital pre-conversion status into public nonprofit hospitals and private nonprofit hospitals. We then repeat our previous IV estimation with our main dependent variables of interest for each subsample. The results, in Table IA.7 of the Internet Appendix, show a similar effect of for-profit status for both public nonprofit hospitals (Panel A) and private nonprofit hospitals (Panel B). In particular, the magnitude of effects of for-profit status on private nonprofit hospitals are relatively larger than those for public nonprofit hospitals. Overall, these results show that our main results are not simply driven by public hospital for-profit conversion but also by private hospital conversion.

6.2. Patient income

Next, we examine potential differences in hospital conversion responses based on residents' income at the HSA. Magge et al. (2013) estimate that more than one-third of low-income adults are underinsured and that 8% and 13% of adults defer or delay obtaining medical care or prescription medications, respectively. After for-profit conversion, profit maximizing hospitals could be more likely to implement budget cuts if they service more low-income patients. In this case, our main results could be amplified for for-profit hospitals in poor neighborhoods.

To examine this, we split the sample based on the median value of resident income at

the county in which hospitals are located.[31] Table IA.8 of the Internet Appendix shows that for-profit conversion negatively and significantly affects hospital behavior regardless of the type of county where the hospital is located. However, it is worth noting that the magnitudes of the effects of for-profit status appear to be slightly larger for hospitals located in relatively richer counties (i.e., the economic magnitude of the coefficient of interest is larger in Panel A than in Panel B).

7. Additional tests

7.1. OLS and reduced-form regression results

Although OLS is subject to selection concerns and it is likely to provide biased estimates, we present these results in the Internet Appendix for completeness and benchmarking purposes. Specifically, in Panel A of Table IA.9, we regress the majority of the outcome variables that we consider in our previous tests on the indicator for for-profit conversion. We find that, for the most part, OLS produces statistically significant results, with the two notable exceptions being the Medicaid inpatient days and other ICU beds regressions. However, although the signs of the OLS regressions are consistent with our IV results, coefficient magnitudes are generally larger for the IV regressions, highlighting the need for an empirical strategy as the one we utilize.

In addition, in Panel B of Table IA.9, we present the reduced-form regression for the majority of our IV estimations. Specifically, we regress our set of outcome variables on the conversion index, and find that the coefficients of interest are statistically significant for all specifications, with signs that are consistent with our IV coefficient estimates.

[31] We obtain county-level income per capita information in 1990 from the BEA website and match it to our sample based on the hospital's address.

7.2. Controlling for the secondary index

We conclude this section by presenting IV regressions that control for the secondary legal provisions discussed in Section 3.2.2. Results are presented in Table IA.**10** of the Internet Appendix. All our previous results hold, with the only exception being our result on Medicaid inpatient days becoming slightly less significant. Overall, while we cannot fully rule out the presence of yet other types of legal provisions not captured by the model acts we consider, these results are reassuring in that one of the most obvious competing legal frameworks is not driving our results.

8. Conclusion

We examine how the objective function of firms in the form of different stakeholder orientations impacts firm behavior. We compare for-profit and nonprofit hospitals competing in the same sector and introduce a novel index of state-level legislation governing for-profit conversion of healthcare institutions. We overcome the non-randomness of stakeholder orientation by using this index as an instrument for the for-profit conversion decision of hospitals. We show that for-profit hospitals systematically pivot their behavior consistent with a change in their objective function. For-profit hospitals reduce operations with large community benefits but high financial costs, such as emergency rooms that provide the bulk of charity care. At the same time, they increase revenue by charging more for drugs and equipment and expanding profitable surgeries, while cutting costs.

The owners of these for-profit hospitals align the actions of their organizations with their new objective function through standard corporate governance mechanisms, such as changing the composition of the board of directors. At the same time, our evidence is also consistent with the tax code (i.e., government oversight) being important to align nonprofit hospital behavior with the objectives of their communities.

Our findings raise concerns that for-profit hospitals may prioritize profitability at the ex-

pense of community benefits. Moreover, these costs may be amplified by negative spillover effects such as the increase in ER costs and volume in neighboring nonprofit hospitals following a for-profit conversion and the declines in patient satisfaction and local health outcomes that we document. However, it is important to highlight that we are unable to measure the overall welfare consequences of for-profit conversions. Reductions in medical staff and expenses could reflect improved efficiency, and the reduction in community benefits, such as charity care, would ultimately need to be compared with the benefits of higher tax revenue following for-profit conversions. Our paper takes an important first step in the direction of establishing a causal link between firm stakeholder orientation and firm behavior. Estimating the aggregate welfare implications of these events is an important question that we leave for future research.

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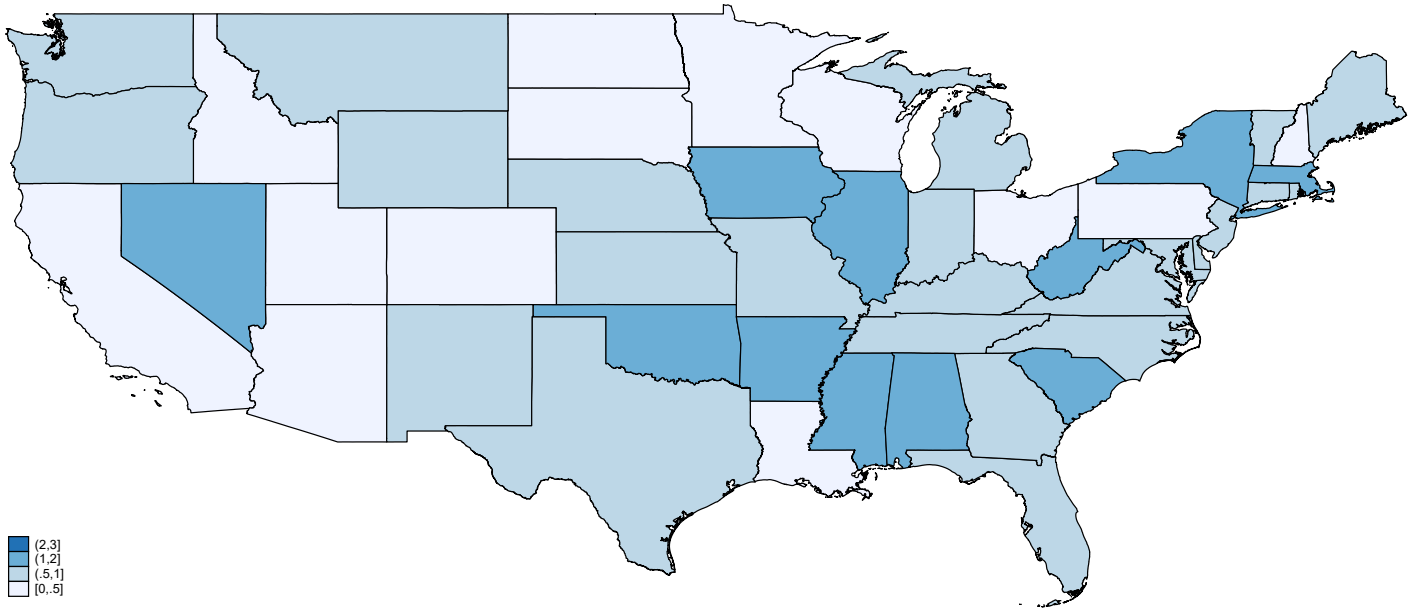
Figure 1
Conversion index by state and time
This figure shows the value of *Conversion Index* by state in 1990 (Panel A) and in 2010 (Panel B). The darker areas represent a higher value of the index, which indicates a higher level of regulatory hurdles to for-profit conversions of hospitals.

Panel A: 1990



Panel B: 2010

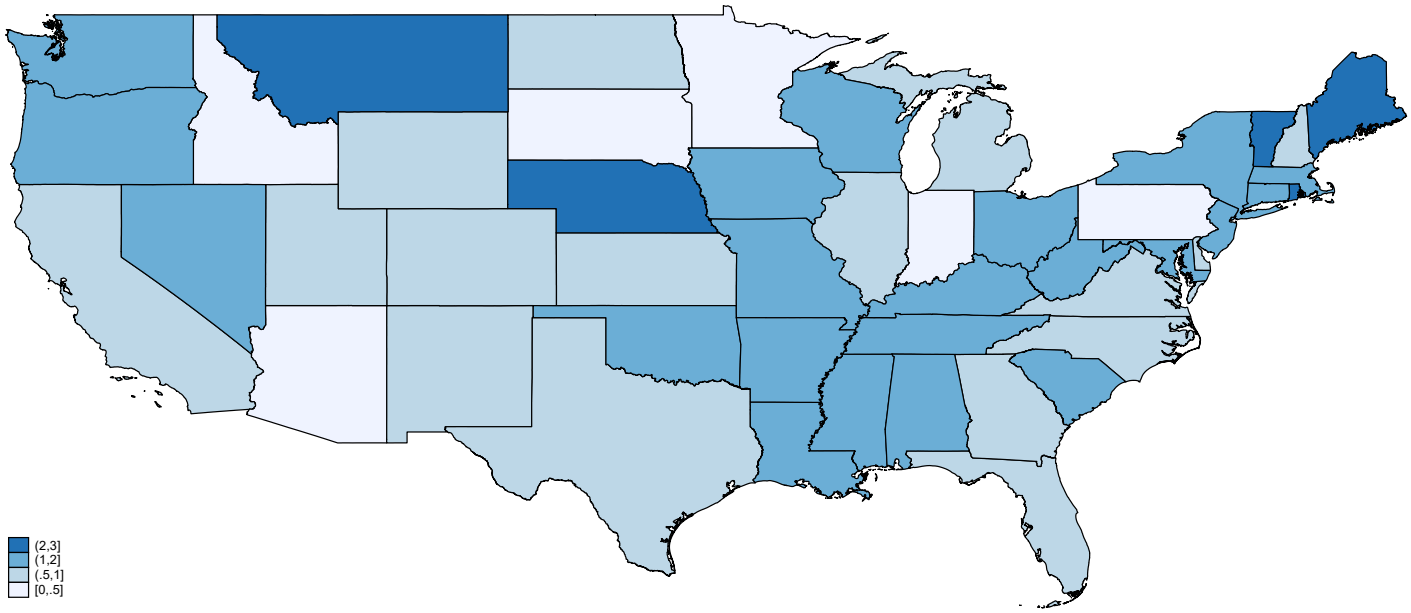


Table 1
Data summary
This table describes the data. Panel A and B describes the sample of for-profit and nonprofit hospitals. Hospital characteristics variables are obtained from the AHA and hospital financial variables are obtained from the HCRIS. The sample period spans from 1991 to 2019. Federal-owned hospitals and hospitals that are for-profit at the beginning of the sample period are excluded, and variables are winsorized at the 1% level.

Panel A: For-profit hospitals

	N	Mean	SD	p10	p50	p90
Hospital beds	5,096	145.97	123.62	25.00	112.00	332.00
Payroll expenses ($,million)	5,096	0.21	0.13	0.08	0.19	0.37
Full-time doctors	5,096	0.04	0.08	0.00	0.02	0.11
Facility expenses ($,million)	5,096	0.56	0.36	0.21	0.48	1.00
Surgical ICU beds	3,769	0.06	0.05	0.00	0.06	0.13
Other ICU beds	3,524	0.01	0.02	0.00	0.00	0.00
Non surgical beds	3,769	0.94	0.05	0.87	0.94	1.00
Revenues ($,million)	5,096	0.60	0.43	0.20	0.50	1.08
ER expenses ($,million)	5,096	0.04	0.04	0.01	0.03	0.08
Medical supply charges (per day)	5,035	461.55	380.67	80.68	344.97	1037.92
Drug charges (per day)	5,089	933.05	651.39	257.30	768.75	1953.99
Medicaid days	4,904	20.78	22.26	1.92	13.51	48.29
ER visits	5,096	190.98	132.48	61.69	160.76	366.14
Social worker services	3,769	80.45	39.67	0.00	100.00	100.00
Assets ($,million)	5,096	74.58	98.64	3.65	40.40	187.81
Liabilities ($,million)	5,086	51.51	69.09	2.39	25.13	131.03
Leverage	5,096	0.85	0.55	0.17	0.79	1.67

Panel B: Nonprofit hospitals

	N	Mean	SD	p10	p50	p90
Hospital beds	99579	171.55	179.10	25.00	105.00	413.00
Payroll expenses ($,million)	99579	0.26	0.20	0.07	0.20	0.52
Full-time doctors	99577	0.08	0.15	0.00	0.03	0.22
Facility expenses ($,million)	99579	0.63	0.51	0.14	0.48	1.31
Surgical ICU beds	88323	0.05	0.05	0.00	0.05	0.12
Other ICU beds	74978	0.01	0.02	0.00	0.00	0.00
Non surgical beds	88323	0.95	0.05	0.88	0.95	1.00
Revenues ($,million)	99579	0.64	0.54	0.13	0.48	1.35
ER expenses ($,million)	99579	0.04	0.04	0.01	0.03	0.09
Medical supply charges (per day)	96806	255.28	267.61	30.82	170.61	582.99
Drug charges (per day)	99334	488.51	447.81	81.77	364.02	1047.71
Medicaid days	97042	21.02	24.22	1.40	13.32	48.82
ER visits	99579	175.29	130.78	41.33	146.98	343.84
Social worker services	88316	87.25	33.35	0.00	100.00	100.00
Assets ($,million)	99579	157.96	284.82	4.78	49.96	414.36
Liabilities ($,million)	99536	74.97	144.46	1.40	21.04	196.32
Leverage	99579	0.50	0.34	0.14	0.44	0.89

Table 2

First stage: For-profit status and the conversion index

This table shows the first-stage estimates of the instrumental variable regressions. The dependent variable is an indicator for whether a hospital is for-profit. The independent variable of interest is *Conversion Index*, the number of regulatory hurdles to for-profit conversion in the hospital's state. The index is lagged by one year and the for-profit indicator is standardized to have a mean of zero and standard deviation of one. All regressions are estimated using ordinary least squares. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	For-profit			
	(1)	(2)	(3)	(4)
Conversion Index	-0.071***	-0.062***	-0.063***	-0.058***
	(0.014)	(0.014)	(0.014)	(0.014)
Hospital FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State-level controls	No	Yes	Yes	Yes
Hospital-level controls	No	No	Yes	Yes
Financial-level controls	No	No	No	Yes
N	104,675	104,675	104,675	104,675
$Adj.R^2$	0.59	0.59	0.59	0.60
Mean of dependent variable	0.05	0.05	0.05	0.05

Table 3

For-profit status and the conversion index excluding states with lobbying or election years

This table shows the first-stage estimates of the instrumental variable regressions for various subsamples. Column 1 excludes states where lobbying is directly linked to the passage of conversion of healthcare institutions laws. Column 2 excludes states where general medical sector lobbied surrounding the passage of conversion of healthcare institutions laws is identified (without reference to the specific laws). Column 3 excludes states in which lobbying efforts can be traced to for-profit hospital groups. Column 4 excludes states in which lobbying efforts can be traced to nonprofit hospital groups. Column 5 excludes states where the passage of conversion of healthcare institutions laws coincided with gubernatorial elections. The dependent variable is an indicator for whether a hospital is for-profit. The independent variable of interest is *Conversion Index*, the number of regulatory hurdles to for-profit conversion in the hospital's state. The index is lagged by one year and the for-profit indicator is standardized to have a mean of zero and standard deviation of one. All regressions are estimated using ordinary least squares. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital. $^{***}p<0.01$, $^{**}p<0.05$, $^{*}p<0.10$.

Sub-sample excluding	Direct lobby	Indirect lobby	For-profit lobby	Nonprofit lobby	Election years
	(1)	(2)	(3)	(4)	(5)
Conversion Index	-0.088***	-0.092***	-0.062***	-0.087***	-0.061***
	(0.015)	(0.018)	(0.015)	(0.017)	(0.016)
Hospital FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
State-level controls	Yes	Yes	Yes	Yes	Yes
Hospital-level controls	Yes	Yes	Yes	Yes	Yes
Financial-level controls	Yes	Yes	Yes	Yes	Yes
N	92,197	82,750	92,238	91,982	93,384
$Adj.R^2$	0.59	0.58	0.58	0.59	0.59
Mean of dependent variable	0.05	0.05	0.05	0.05	0.05

Table 4

For-profit status, first-generation, and second-generation state laws

Panel A shows the regression of for-profit indicator on the *Conversion Index* components. The dependent variable is an indicator for whether a hospital is for-profit. The independent variables of interest are the components of *Conversion Index*, which include CON law requirment, AG approval, and Approval from other agencies. The index components are lagged by one year and the for-profit indicator is standardized to have a mean of zero and standard deviation of one. Panel B shows the regression of for-profit indicator on the additional approvals. The dependent variable is an indicator for whether a hospital is for-profit. The independent variables are the additional approvals besides the *Conversion Index*, which include Adanced notice, AG non-binding review, Public disclosure hearing, Expost monitoring. The components are lagged by one year and the for-profit indicator is standardized to have a mean of zero and standard deviation of one. All regressions are estimated using ordinary least squares. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital. ***p <0.01, **p <0.05, *p <0.10.

Panel A: Conversion index components

Dependent variable	For-profit		
	(1)	(2)	(3)
CON law required	-0.069*		
	(0.041)		
AG approval		-0.051*	
		(0.027)	
Approval from other agencies			-0.122***
			(0.026)
Hospital FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
State-level controls	Yes	Yes	Yes
Hospital-level controls	Yes	Yes	Yes
Financial-level controls	Yes	Yes	Yes
N	104,675	104,675	104,675
$Adj.R^2$	0.60	0.60	0.60
Mean of dependent variable	0.05	0.05	0.05

Panel B: Additional state-level laws

Dependent variable	For-profit			
	(1)	(2)	(3)	(4)
Advanced notice	0.032			
	(0.024)			
AG non-binding review		0.019		
		(0.036)		
Public disclosure hearing			0.017	
			(0.023)	
Expost monitoring				0.012
				(0.028)
Hospital FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State-level controls	Yes	Yes	Yes	Yes
Hospital-level controls	Yes	Yes	Yes	Yes
Financial-level controls	Yes	Yes	Yes	Yes
N	104,675	104,675	104,675	104,675
$Adj.R^2$	0.60	0.60	0.60	0.60
Mean of dependent variable	0.05	0.05	0.05	0.05

Table 5
Nonprofit status, M&A activity, and the conversion index
Column 1 estimates regression identical to the first-stage regression in Table 2 except that the dependent variable is an indicator for whether a hospital is nonprofit and the sample consists of hospitals with a for-profit status at the beginning of the sample period (i.e., hospitals that can potentially convert to nonprofit). In column 2, the dependent variable is an indicator for whether the hospital is the target of an M&A transaction in a given year (regardless of whether the takeover attempt is by a for-profit or nonprofit hospital). The indicator is based on data from Cooper et al. (2019). In both columns the independent variable of interest is *Conversion Index*, the number of regulatory hurdles to for-profit conversion in the hospital's state. The index is lagged by one year and the dependent variable is standardized to have a mean of zero and standard deviation of one. All regressions are estimated using ordinary least squares. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	Nonprofit (1)	Target (2)
Conversion Index	-0.016	-0.013
	(0.052)	(0.020)
Hospital FE	Yes	Yes
Year FE	Yes	Yes
State-level controls	Yes	Yes
Hospital-level controls	Yes	Yes
Financial-level controls	Yes	Yes
N	23,784	50,261
$Adj.R^2$	0.72	0.02
Mean of dependent variable	0.35	0.02

Table 6

Second stage: The effect of for-profit conversion on ER expenses and Medicaid days

This table shows the second-stage estimates of the instrumental variable regressions estimated using 2SLS. In the first stage (in Table 2), the *Conversion Index* is used as an instrument for for-profit conversion. In the second stage, from panel A, the dependent variable, ER expenses, is the emergency room expenditures and scaled by total number of hospital beds. From panel B, the dependent variable, Medicaid days, is the number of Medicaid inpatients days and scaled by total number of hospital beds. The fitted value from the first stage is the main explanatory variable. The main explanatory variable is standardized to have a mean of zero and standard deviation of one. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital. ***p <0.01, **p <0.05, *p <0.10.

Panel A

Dependent variable	ER expenses			
	(1)	(2)	(3)	(4)
For-profit	-0.049***	-0.058***	-0.052***	-0.055***
	(0.012)	(0.016)	(0.014)	(0.015)
Hospital FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State-level controls	No	Yes	Yes	Yes
Hospital-level controls	No	No	Yes	Yes
Financial-level controls	No	No	No	Yes
N	104,675	104,675	104,675	104,675
F-statistic	24.91	18.89	18.94	17.24
Mean of dependent variable	0.04	0.04	0.04	0.04

Panel B

Dependent variable	Medicaid days			
	(1)	(2)	(3)	(4)
For-profit	-11.256***	-12.889**	-11.666**	-11.635**
	(4.338)	(5.048)	(4.837)	(5.205)
Hospital FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State-level controls	No	Yes	Yes	Yes
Hospital-level controls	No	No	Yes	Yes
Financial-level controls	No	No	No	Yes
N	101,939	101,939	101,939	101,939
F-statistic	30.79	24.09	24.15	21.92
Mean of dependent variable	21.01	21.01	21.01	21.01

Table 7

The effect of for-profit conversion on unprofitable hospital operations

This table shows the second-stage estimates of the instrumental variable regressions estimated using 2SLS. In the first stage (in Table 2), the *Conversion Index* is used as an instrument for for-profit conversion. In the second stage, in column 1, the dependent variable, Other ICU beds, is the total number of other ICU beds, including cardiac, neonatal, pediatric, burn, other special, and other intensive care beds and scaled by total number of hospital beds. In column 2, the dependent variable, Social worker services, is an indicator that equals one if a hospital provides social worker services. For ease of interpretation, the indicator is multiplied by 100. The fitted value from the first stage is the main explanatory variable. The main explanatory variable is standardized to have a mean of zero and standard deviation of one in all columns. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	Other ICU beds (1)	Social worker services (2)
For-profit	-0.112** (0.045)	-15.183** (7.638)
Hospital FE	Yes	Yes
Year FE	Yes	Yes
State-level controls	Yes	Yes
Hospital-level controls	Yes	Yes
Financial-level controls	Yes	Yes
N	78,172	92,040
F-statistic	8.77	20.61
Mean of dependent variable	0.05	86.99

Table 8
The effect of for-profit conversion on profit-generating activity
This table shows the second-stage estimates of the instrumental variable regressions estimated using 2SLS. In the first stage (in Table 2), the *Conversion Index* is used as an instrument for for-profit conversion. In the second stage, in column 1, the dependent variable, Medical supply charges, is medical supply charged to patients and scaled by total inpatient days. In column 2, the dependent variable, Drug charges, is the drug charged to patients and scaled by total inpatient days. In column 3, the dependent variable, Surgical ICU beds, is the total number of surgical ICU beds and scaled by total hospital beds. In column 4, the dependent variable, Facility expenses, is the facility expenses and scaled by total number of hospital beds. In column 5, the dependent variable, Full-time doctors, is the total number of full-time doctors and scaled by total number of hospital beds. In column 6, the dependent variable, Payroll expenses, is hospital's payroll expenses and scaled by total number of hospital beds. The fitted value from the first stage is the main explanatory variable. The main explanatory variable is standardized to have a mean of zero and standard deviation of one. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital. ***p <0.01, **p <0.05, *p <0.10.

Panel A: Revenue variables

Dependent variable	Medical supply charges (1)	Drug charges (2)	Surgical ICU beds (3)
For-profit	129.164*	438.827***	0.051***
	(67.557)	(129.498)	(0.017)
Hospital FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
State-level controls	Yes	Yes	Yes
Hospital-level controls	Yes	Yes	Yes
Financial-level controls	Yes	Yes	Yes
N	101,837	104,416	92,047
F-statistic	17.77	16.98	20.61
Mean of dependent variable	265.48	510.21	0.05

Panel B: Cost variables

Dependent variable	Facility expenses (4)	Full-time doctors (5)	Payroll expenses (6)
For-profit	-0.872***	-0.176***	-0.370***
	(0.223)	(0.054)	(0.094)
Hospital FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
State-level controls	Yes	Yes	Yes
Hospital-level controls	Yes	Yes	Yes
Financial-level controls	Yes	Yes	Yes
N	104,675	104,673	104,675
F-statistic	17.24	17.24	17.24
Mean of dependent variable	0.63	0.08	0.26

Table 9
The effect on hospital care quality: patient's perspective
This table shows the regression of for-profit indicator on patient's satisfaction on hospital. The dependent variables are the share of patients that give the highest rating to questions on doctor communication, nurse communication, staff explanation, help received, pain management, hospital rating, and patient recommendation, respectively. The independent variable is an indicator for whether a hospital is for-profit. The sample is from 2009 to 2019. All regressions are estimated using ordinary least squares. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital. $^{***}p<0.01$, $^{**}p<0.05$, $^{*}p<0.10$.

Dependent variable	Doctor communication (1)	Nurse communication (2)	Staff explanation (3)	Help received (4)	Pain management (5)	Hospital rating (6)	Patient recommendation (7)
For-profit	-0.464*	-1.110***	-0.830**	-1.325***	-0.964***	-0.821*	-1.086**
	(0.260)	(0.297)	(0.350)	(0.418)	(0.329)	(0.422)	(0.448)
Hospital FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hospital-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Financial-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	35,776	35,776	35,751	35,773	29,366	35,776	35,776
$Adj.R^2$	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Mean of dependent variable	80.97	78.06	62.83	66.30	69.82	69.36	70.26

Table 10
Second stage: The effect of for-profit conversion on community health outcomes
This table shows the second-stage estimates of the instrumental variable regressions estimated using 2SLS. In the first stage, the *Conversion Index* is used as an instrument for for-profit conversion. To capture for-profit conversion on community health outcomes, we restrict the sample to only include hospitals that are the only hospital in a specific HSA across the sample period. In the second stage, in column 1, the dependent variable, Medicare costs, is the HSA-level price-adjusted total medicare reimbursements per enrollee. Due to the lack of high-quality HSA-level mortality rate data, we use the county-level age-adjusted mortality rate that is obtained from the CDC WONDER online databses. In column 2, we restrict the sample to only include hospitals that are only the hospitals in a specific county across the sample period. The dependent variable, Age-adjusted mortality rate, is age adjusted mortality rate and calculated per 100 persons. The fitted value from the first stage is the main explanatory variable. The main explanatory variable is standardized to have a mean of zero and standard deviation of one. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	Medicare costs (1)	Age-adjusted mortality rate (2)
For-profit	4023.614**	0.146*
	(1855.699)	(0.076)
Hospital FE	Yes	Yes
Year FE	Yes	Yes
State-level controls	Yes	Yes
Hospital-level controls	Yes	Yes
Financial-level controls	Yes	Yes
N	60,487	38,157
F-statistic	5.01	4.84
Mean of dependent variable	7538.03	0.87

Table 11
The effect of for-profit conversion on neighboring hospitals
This table shows the regression with the independent variable of interest NFP × Post Conversion, the interaction of NFP (an indicator for whether the hospital is nonprofit) and Post Conversion (an indicator taking the value of 1 in years following the for-profit conversion of a hospital in the same HSA). An HSA is a collection of ZIP codes whose residents receive most of their hospitalizations from the hospitals in that area. In column 1, the dependent variable, ER visits, is the number of emergency room outpatient visits and scaled by total hospital beds. In column 2, the dependent variable, ER expenses, is the emergency room expenditures and scaled by total hospital beds. All regressions are estimated using ordinary least squares. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	ER visits (1)	ER expenses (2)
NFP × Post Conversion	3.796* (2.125)	0.002*** (0.001)
Hospital FE	Yes	Yes
Year FE	Yes	Yes
State-level controls	Yes	Yes
Hospital-level controls	Yes	Yes
Financial-level controls	Yes	Yes
N	104,675	104,675
$Adj.R^2$	0.77	0.79
Mean of dependent variable	176.05	0.04

Table 12
The effect of for-profit conversion on board composition
This table shows the regression of for-profit indicator on hospital's board composition. In column 1, the dependent variable is an indicator for the presence of at least one director holding a MBA or JD degrees. In column 2, the dependent variable is an indicator for the presence of at least one director holding an MD degree. The independent variable is an indicator for whether a hospital is for-profit. All regressions are estimated using ordinary least squares. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital. $^{***}p<0.01$, $^{**}p<0.05$, $^{*}p<0.10$.

Dependent variable	MBA or JD (1)	MD (2)
For-profit	0.268*** (0.079)	-0.375** (0.170)
Hospital FE	Yes	Yes
Year FE	Yes	Yes
State-level controls	Yes	Yes
Hospital-level controls	Yes	Yes
Financial-level controls	Yes	Yes
N	776	776
$Adj.R^2$	0.80	0.71
Mean of dependent variable	0.40	0.41

Internet Appendix
Corporate behavior when running the firm for stakeholders: Evidence from hospitals

A. Supplementary figures and tables

Figure IA.1
Number of for-profit conversions per year
This figure shows the number of conversions from nonprofit to for-profit per year over the sample period.

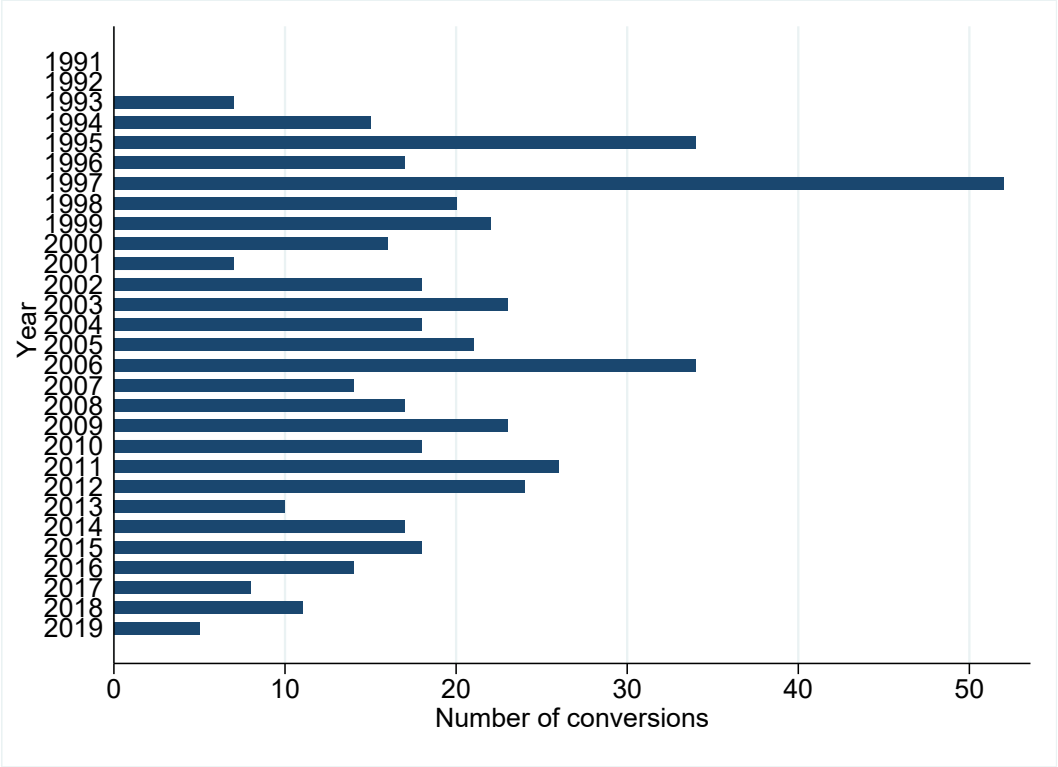
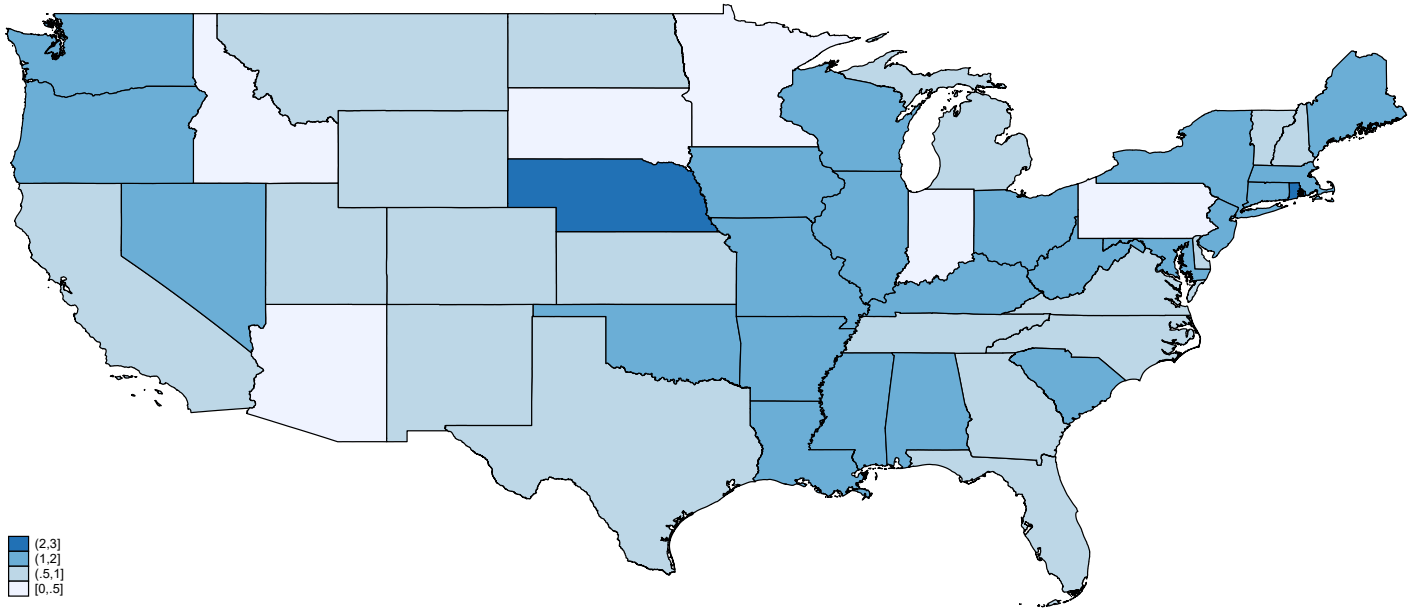


Figure IA.2
Conversion index by state and time (2000 and 2019)
This figure complements Figure 1 by showing the value of *Conversion Index* by state in 2000 (Panel A) and in 2019 (Panel B). The darker areas represent a higher value of the index, which indicates a higher level of regulatory hurdles to for-profit conversions of hospitals.

Panel A: 2000



Panel B: 2019

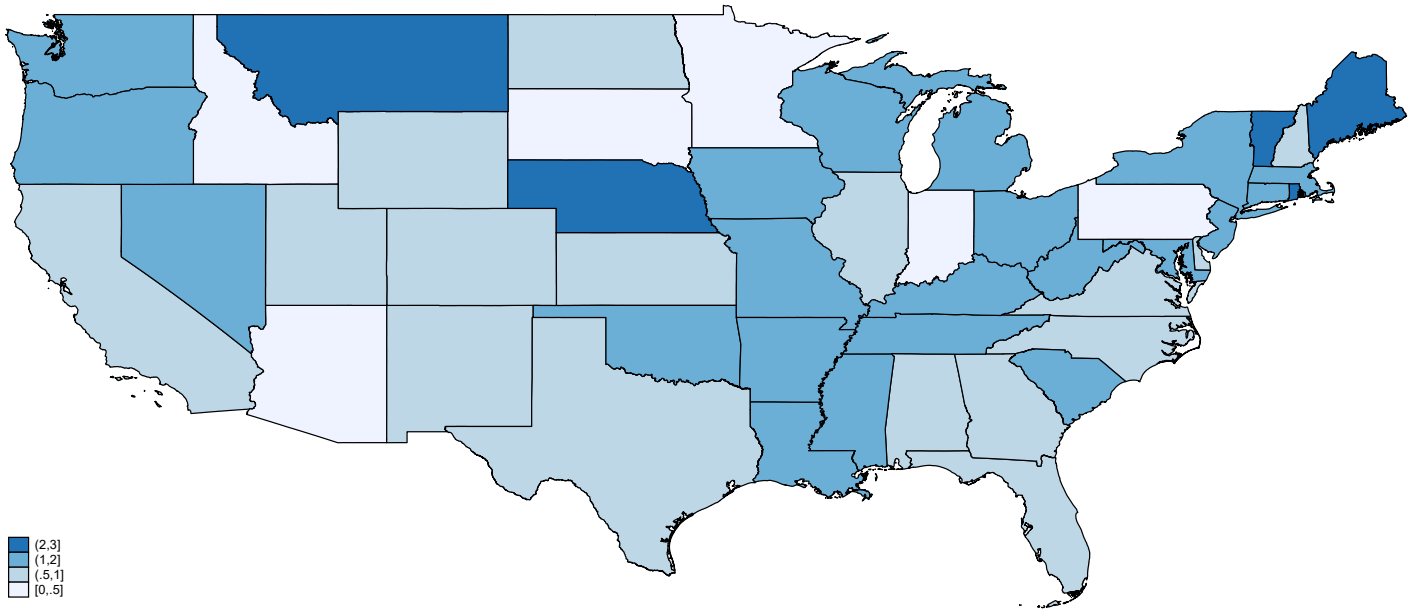


Table IA.1
Data summary

This table compares later-converted nonprofit hospitals with hospitals that has never converted. Hospital characteristics variables are obtained from AHA and hospital financial variables are obtained from the HCRIS. The sample period spans from 1991 to 2019. Federal-owned hospitals and hospitals that are for-profit at the beginning of the sample period are excluded, and variables are winsorized at the 1% level. p-values are based on heteroscedasticity-robust standard errors clustered by hospital. $^{***}p<0.01$, $^{**}p<0.05$, $^{*}p<0.10$.

Hospital groups	Converted hospitals	Nonconverted hospitals	Difference
Hospital beds	152.05	172.60	20.55***
Payroll expenses ($,million)	0.17	0.26	0.09***
Full-time doctors	0.05	0.09	0.04***
Facility expenses ($,million)	0.41	0.64	0.23***
Surgical ICU beds	0.05	0.05	-0.00*
Other ICU beds	0.00	0.01	0.00***
Non surgical beds	0.95	0.95	0.00*
Revenues ($,million)	0.43	0.65	0.22***
ER expenses ($,million)	0.03	0.04	0.01***
Medical supply charges (per day)	233.16	257.23	24.07***
Drug charges (per day)	435.30	492.28	56.97***
Medicaid days	21.66	20.97	-0.68*
ER visits	170.30	175.41	5.11**
Social worker services	84.99	87.34	2.35***
Assets ($,million)	82.67	162.35	79.67***
Liabilities ($,million)	48.38	76.50	28.13***
Leverage	0.63	0.49	-0.14***

Table IA.2
Conversion index summary
This table describes the conversion index and the legal provisions that comprise it. The components of conversion index include CON law required, AG approval, and Approval from other agencies. AG approval is an indicator that equals one if a state requires for-profit conversions to be approved by the state's attorney general. Approval from other agencies is an indicator that equals one if a state requires for-profit conversions to be approved by other agencies besides the state's attorney general. CON law required is an indicator that equals one if a state has the requirement of a "certificate of need," which mandates the review of major changes of ownership and investment in the healthcare sector. Finally, the main index is constructed based on three types of legal provisions, which captures the introduction and the removal of these regulatory hurdles. The sample period spans from 1990 to 2019.

	N	Mean	SD	p10	p50	p90
Approval from other agencies	1,530	0.47	0.50	0.00	0.00	1.00
AG approval	1,530	0.24	0.43	0.00	0.00	1.00
CON Law required	1,530	0.67	0.47	0.00	1.00	1.00
Conversion Index	1,530	1.38	0.83	0.00	1.00	2.00

Table IA.3
For-profit status and the conversion index (contemporaneous and 2-year lag)
This table shows the first-stage estimates of the instrumental variable regressions. The dependent variable is an indicator for whether a hospital is for-profit. The independent variable of interest is *Conversion Index*, the number of regulatory hurdles to for-profit conversion in the hospital's state. In column 1, *Conversion Index* is at the current time t; in column 2, *Conversion Index* is lagged by 2 year. The for-profit indicator is standardized to have a mean of zero and standard deviation of one. All regressions are estimated using ordinary least squares. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital $^{***}p<0.01$, $^{**}p<0.05$, $^{*}p<0.10$.

Dependent variable	For-profit	
	Contemporaneous	2-year lag
	(1)	(2)
Conversion Index	-0.054***	-0.062***
	(0.015)	(0.014)
Hospital FE	Yes	Yes
Year FE	Yes	Yes
State-level controls	Yes	Yes
Hospital-level controls	Yes	Yes
Financial-level controls	Yes	Yes
N	104,675	104,673
$Adj.R^2$	0.60	0.60
Mean of dependent variable	0.05	0.05

Table IA.4
Robustness: Event-time centered regression and collapsed indicator
This table shows the regression of for-profit indicator on *Conversion Index*. The dependent variable is an indicator for whether a hospital is for-profit. The independent variable of interest is *Conversion Index*, the number of regulatory hurdles to for-profit conversion in the hospital's state. The index is lagged by one year and the for-profit indicator is standardized to have a mean of zero and standard deviation of one. In column 1, we colapses *Conversion Index* into indicator that takes value 1 whenever the index is larger than 0. In column 2 we estimates regressions including event-time fixed effects. All regressions are estimated using ordinary least squares. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	For-profit	
	Stacked	Collapsed
	(1)	(2)
Conversion Index	-0.036*	-0.106***
	(0.019)	(0.025)
Hospital FE	Yes	Yes
Event-time FE	Yes	No
Year FE	No	Yes
State-level controls	Yes	Yes
Hospital-level controls	Yes	Yes
Financial-level controls	Yes	Yes
N	53,125	104,675
$Adj.R^2$	0.63	0.60
Mean of dependent variable	0.04	0.05

Table IA.5
County HHI and Conversion Index

This table shows the regression of *Conversion Index* on Herfindahl–Hirschman Index. The dependent variable is county-level HHI, which is calculated by hospital beds. The independent variable is *Conversion Index*, the number of regulatory hurdles to for-profit conversion in the hospital's state. The index is lagged by one year. All regressions are estimated using ordinary least squares. State and year fixed effects, as well as state-controls are included as reported. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state. ***p <0.01, **p <0.05, *p <0.10.

Dependent variable	County-level HHI			
	(1)	(2)	(3)	(4)
Conversion Index	0.003	-0.003	-0.003	
	(0.017)	(0.004)	(0.004)	
Conversion Index = 1				-0.007
				(0.009)
Conversion Index = 2				-0.005
				(0.011)
Conversion Index = 3				-0.025**
				(0.012)
State FE	No	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes
State-level controls	No	No	Yes	Yes
N	61,439	61,439	61,439	61,439
$Adj.R^2$	0.00	0.17	0.17	0.17
Mean of dependent variable	0.85	0.85	0.85	0.85

Table IA.6
Past conversions, economic fundamentals, and the conversion index
This table shows the regression of *Conversion Index* on state-level characteristics. The dependent variable is the change of *Conversion Index* from *t-1* to *t*. ln(Hospital care spending) is the nature log of state-level total hospital care spending per capita. In(Other healthcare spending) is the nature log of all healthcare spending per capita except hospital care spending, which include physician services spending, other professional services spending, dental services spending, home health care spending, percecription durgs spending, durable medical products spending, nursing home care spending, and other spending. Hospital discharges is the state-level hospital discharges rate. Age-adjusted mortality rate is the state-level age-adjusted mortality rate. Number of hospitals is the total number of hospitals from AHA in a given state and year. Number of FP conversions is the total number of hospitals that were converted from nonprofit to for-profit from AHA in a given state and year. Governor is democrat is an indicator which takes of 1 if a governor in a given state and year belongs to democrat party. Failed FP conversions the total number of hospitals that were converted to for-profit before but closed within 5 year. Closed NFP hospitals is the total number of nonprofit hospitals closed within last 5 years. The independent variables are lay by 1 year.The sample is from 1992-2019. The regression is estimated using ordinary least squares. All variables are winsorized by 1 percent. Reported standard errors in parentheses are heteroscedasticity-robust and clustered by state. $^{***}p$ <0.01, $^{**}p$ <0.05, $^{*}p$ <0.10.

Dependent variable	Change of Conversion Index (1)
ln(Hospital care spending)	-0.036
	(0.034)
ln(Other healthcare spending)	-0.010
	(0.050)
Hospital discharges	0.097
	(0.122)
Age-adjusted mortality rate	-0.080
	(0.067)
ln(Population)	-0.009
	(0.007)
ln(Income per capita)	-0.006
	(0.044)
Unemployment rate	-0.003
	(0.002)
Number of hospitals	-0.000
	(0.000)
Number of FP conversions	0.007*
	(0.004)
Governor is democrat	-0.003
	(0.009)
Failed FP conversions	0.000
	(0.025)
Closed NFP hospitals	0.001
	(0.002)
N	1,428
R^2	0.01
Mean of dependent variable	0.02

Table IA.7
Subsample: public vs private hospitals on public goods
This table shows the second-stage estimates of the instrumental variable regressions estimated using 2SLS. In the first stage, the *Conversion Index* is used as an instrument for for-profit conversion. In panel A, we only include hospitals which are public at the beginning of the sample, while in panel B, we only include hospitals which are private-nonprofit at the begining of the sample. In column 1, the dependent variable, ER expenses, is the emergency room expenditures and scaled by total number of hospital beds. In column 2, the dependent variable, Medicaid days, is the number of Medicaid inpatients days and scaled by total number of hospital beds. In column 3, the dependent variable, Other ICU beds, is the total number of other ICU beds, including cardiac, neonatal, pediatric, burn, other special, and other intensive care beds and scaled by total number of hospital beds. In column 4, the dependent variable, Social worker services, is an indicator that equals one if a hospital provides social worker services. For ease of interpretation, the indicator is multiplied by 100. The fitted value from the first stage is the main explanatory variable. The main explanatory variable is standardized to have a mean of zero and standard deviation of one in all columns. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital. $^{***}p<0.01$, $^{**}p<0.05$, $^{*}p<0.10$.

Panel A: Only public hospitals pre-conversion

Dependent variable	ER expenses (1)	Medicaid days (2)	Other ICU beds (3)	Social worker services (4)
For-profit	-0.035*	-14.520*	-0.041*	-9.963
	(0.019)	(8.427)	(0.024)	(12.876)
Hospital FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State-level controls	Yes	Yes	Yes	Yes
Hospital-level controls	Yes	Yes	Yes	Yes
Financial-level controls	Yes	Yes	Yes	Yes
N	33,360	32,152	24,443	28,805
F-statistic	5.62	11.86	7.71	12.34
Mean of dependent variable	0.04	18.94	0.03	76.63

Panel B: Only private hospitals pre-conversion

Dependent variable	ER expenses (1)	Medicaid days (2)	Other ICU beds (3)	Social worker services (4)
For-profit	-0.057***	-9.365	-0.132*	-23.155**
	(0.017)	(5.841)	(0.069)	(9.396)
Hospital FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State-level controls	Yes	Yes	Yes	Yes
Hospital-level controls	Yes	Yes	Yes	Yes
Financial-level controls	Yes	Yes	Yes	Yes
N	71,315	69,787	53,729	63,235
F-statistic	14.65	14.99	4.84	13.67
Mean of dependent variable	0.04	21.97	0.06	91.71

Table IA.8
Subsample: high vs low local income on public goods

This table shows the second-stage estimates of the instrumental variable regressions estimated using 2SLS. In the first stage, the *Conversion Index* is used as an instrument for for-profit conversion. In panel A, we only include hospitals which are located in above median county-income per capita in 1990, while in panel B, we only include hospitals which are located in below median county-income per capita in 1990. In column 1, the dependent variable, ER expenses, is the emergency room expenditures and scaled by total number of hospital beds. In column 2, the dependent variable, Medicaid days, is the number of Medicaid inpatients days and scaled by total number of hospital beds. In column 3, the dependent variable, Other ICU beds, is the total number of other ICU beds, including cardiac, neonatal, pediatric, burn, other special, and other intensive care beds and scaled by total number of hospital beds. In column 4, the dependent variable, Social worker services, is an indicator that equals one if a hospital provides social worker services. For ease of interpretation, the indicator is multiplied by 100. The fitted value from the first stage is the main explanatory variable. The main explanatory variable is standardized to have a mean of zero and standard deviation of one in all columns. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital. ***p <0.01, **p <0.05, *p <0.10.

Panel A: Above median county-income per capita

Dependent variable	ER expenses (1)	Medicaid days (2)	Other ICU beds (3)	Social worker services (4)
For-profit	-0.071**	-9.038	-0.355	-10.676
	(0.034)	(10.034)	(0.313)	(12.504)
Hospital FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State-level controls	Yes	Yes	Yes	Yes
Hospital-level controls	Yes	Yes	Yes	Yes
Financial-level controls	Yes	Yes	Yes	Yes
N	67,825	66,246	50,792	59,979
F-statistic	4.78	5.06	1.34	4.30
Mean of dependent variable	0.04	23.08	0.07	91.29

Panel B: Below median county-income per capita

Dependent variable	ER expenses (1)	Medicaid days (2)	Other ICU beds (3)	Social worker services (4)
For-profit	-0.047***	-14.854**	-0.007	-19.654*
	(0.017)	(6.035)	(0.016)	(10.103)
Hospital FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State-level controls	Yes	Yes	Yes	Yes
Hospital-level controls	Yes	Yes	Yes	Yes
Financial-level controls	Yes	Yes	Yes	Yes
N	35,846	34,716	26,701	31,215
F-statistic	12.78	19.95	9.73	20.67
Mean of dependent variable	0.04	16.98	0.02	78.51

Table IA.9
Reduced form regression

Panel A shows the regression of for-profit indicator on our main hospital's outcomes. Panel B shows the regression of *Conversion Index* on our main hospital's outcomes. In column 1, the dependent variable, ER expenses, is the emergency room expenditures and scaled by total number of hospital beds. In column 2, the dependent variable, Medicaid days, is the number of Medicaid inpatients days and scaled by total number of hospital beds. In column 3, the dependent variable, Other ICU beds, is the total number of other ICU beds, including cardiac, neonatal, pediatric, burn, other special, and other intensive care beds and scaled by total number of hospital beds. In column 4, the dependent variable, Social worker services, is an indicator that equals one if a hospital provides social worker services. For ease of interpretation, the indicator is multiplied by 100. In column 5, the dependent variable, Medical supply charges, is medical supply charged to patients and scaled by total inpatient days. In column 6, the dependent variable, Drug charges, is the drug charged to patients and scaled by total inpatient days. In column 7, the dependent variable, Surgical ICU beds, is the total number of surgical ICU beds and scaled by total hospital beds. In column 8, the dependent variable, Facility expenses, is the facility expenses and scaled by total number of hospital beds. In column 9, the dependent variable, Full-time doctors, is the total number of full-time doctors and scaled by total number of hospital beds. In column 10, the dependent variable, Payroll expenses, is hospital's payroll expenses and scaled by total number of hospital beds. All regressions are estimated using ordinary least squares. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital. $^{***}p<0.01$, $^{**}p<0.05$, $^{*}p<0.10$.

Panel A

Dependent variable	ER expenses (1)	Medicaid days (2)	Other ICU beds (3)	Social worker services (4)	Medical supply charges (5)	Drug charges (6)	Surgical ICU bed (7)	Facility expenses (8)	Full-time doctor (9)	Payroll expenses (10)
For-profit	-0.008***	0.417	-0.003	-5.722***	103.360***	232.246***	0.003*	-0.120***	-0.034***	-0.061***
	(0.001)	(0.641)	(0.003)	(1.435)	(10.934)	(18.486)	(0.002)	(0.011)	(0.003)	(0.004)
Hospital FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hospital-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Financial-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	104,675	101,939	78,172	92,040	101,837	104,416	92,047	104,675	104,673	104,675
$Adj.R^2$	0.25	0.03	0.02	0.00	0.02	0.10	0.03	0.29	0.04	0.26
Mean of dependent variable	0.04	21.01	0.05	86.99	265.48	510.21	0.05	0.63	0.08	0.26

Panel B

Dependent variable	ER expenses (1)	Medicaid days (2)	Other ICU beds (3)	Social worker services (4)	Medical supply charges (5)	Drug charges (6)	Surgical ICU bed (7)	Facility expenses (8)	Full-time doctor (9)	Payroll expenses (10)
Conversion Index	0.003***	0.743**	0.005***	0.865**	-7.762**	-25.437***	-0.003***	0.051***	0.010***	0.022***
	(0.001)	(0.290)	(0.001)	(0.400)	(3.745)	(5.637)	(0.001)	(0.006)	(0.002)	(0.002)
Hospital FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hospital-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Financial-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	104,675	101,939	78,172	92,040	101,837	104,416	92,047	104,675	104,673	104,675
$Adj.R^2$	0.25	0.03	0.02	0.00	0.01	0.08	0.03	0.29	0.04	0.26
Mean of dependent variable	0.04	21.01	0.05	86.99	265.48	510.21	0.05	0.63	0.08	0.26

Table IA.10
Controlling for secondary index

This table shows the second-stage estimates of the instrumental variable regressions estimated using 2SLS and include the secondary index (see Table 4) as a control variable. In the first stage, the *Conversion Index* is used as an instrument for for-profit conversion. In column 1, the dependent variable, ER expenses, is the emergency room expenditures and scaled by total number of hospital beds. In column 2, the dependent variable, Medicaid days, is the number of Medicaid inpatients days and scaled by total number of hospital beds. In column 3, the dependent variable, Other ICU beds, is the total number of other ICU beds, including cardiac, neonatal, pediatric, burn, other special, and other intensive care beds and scaled by total number of hospital beds. In column 4, the dependent variable, Social worker services, is an indicator that equals one if a hospital provides social worker services. For ease of interpretation, the indicator is multiplied by 100. In column 5, the dependent variable, Medical supply charges, is medical supply charged to patients and scaled by total inpatient days. In column 6, the dependent variable, Drug charges, is the drug charged to patients and scaled by total inpatient days. In column 7, the dependent variable, Surgical ICU beds, is the total number of surgical ICU beds and scaled by total hospital beds. In column 8, the dependent variable, Facility expenses, is the facility expenses and scaled by total number of hospital beds. In column 9, the dependent variable, Full-time doctors, is the total number of full-time doctors and scaled by total number of hospital beds. In column 10, the dependent variable, Payroll expenses, is hospital's payroll expenses and scaled by total number of hospital beds. The fitted value from the first stage is the main explanatory variable. The main explanatory variable is standardized to have a mean of zero and standard deviation of one in all columns. Hospital and year fixed effects, as well as state-, hospital-, and financial-level controls are included as reported. Standard errors in parentheses are heteroscedasticity-robust and clustered by hospital. $^{***}p<0.01$, $^{**}p<0.05$, $^{*}p<0.10$.

Dependent variable	ER expenses (1)	Medicaid days (2)	Other ICU beds (3)	Social worker services (4)	Medical supply charges (5)	Drug charges (6)	Surgical ICU bed (7)	Facility expenses (8)	Full-time doctors (9)	Payroll expenses (10)
For-profit	-0.037***	-4.469	-0.111**	-25.720***	259.088***	545.257***	0.052***	-0.578***	-0.120***	-0.258***
	(0.010)	(4.133)	(0.043)	(8.362)	(76.655)	(135.434)	(0.017)	(0.141)	(0.038)	(0.062)
Hospital FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hospital-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Financial-level controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Secondary index control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	104,675	101,939	78,172	92,040	101,837	104,416	92,047	104,675	104,673	104,675
F-statistic	21.44	23.25	8.83	19.68	21.69	21.14	19.68	21.44	21.44	21.44
Mean of dependent variable	0.04	21.01	0.05	86.99	265.48	510.21	0.05	0.63	0.08	0.26