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RESEARCH ARTICLE

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The effect of political control on financial performance, structure, and outcomes of US nursing homes

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Objective: To evaluate the effect of partisan political control on financial performance, structure, and outcomes of for-profit and not-for-profit US nursing homes.

Data Sources/Study Setting: Nineteen-year panel (1996-2014) of state election outcomes, financial performance data from nursing home cost reports, operational and aggregate resident characteristics from OSCAR of 13 737 nursing homes.

Study Design: A linear panel model was estimated to identify the effect of Democratic and Republican political control on next year's outcomes. Nursing home outcomes were defined as yearly facility revenues, expenses, and profits; the number of Medicaid, Medicare, and private-pay residents; staffing levels; and selected resident outcomes.

Principal Findings: Democratic political control leads to an increase in financial flows to for-profit nursing homes, boosting profits without producing observable improvements in resident outcomes. Republican political control leads to lower revenues and profits of for-profit nursing homes. A shift from Medicaid to more profitable private-pay residents following Republican political control is observed for all nursing homes. Financial performance of not-for-profit nursing homes is not significantly affected by changes in political control.

Conclusion: Political control of the two legislative chambers—but not of the governorship—shapes the structure of the nursing home industry as seen in provider behavior.

KEYWORDS
Medicaid, political control, public spending

1 | INTRODUCTION

US health care expenditures represent a substantial portion of public spending and are therefore likely to be affected by partisan political control. At the federal level, for example, the budget for and organization of health care were heavily debated by Republicans and Democrats during the enactment of the Patient Protection and Affordable Care Act and the Health Care and Education Reconciliation Act in 2010 as well as the American Health Care Act of 2017. The health care budget is debated not only at the federal level but also at the state level, which results in considerable variation across the United States.[1] At the state level, the Medicaid budget competes with other state spending priorities, such as education, pensions, and welfare. At 27.4% of total state spending, Medicaid represents the largest single component of total state expenditures[2] and constitutes a 30.7% share of nursing homes' (NH) revenues.[3]

The aim of this study was to improve the understanding of the impact of political control on US NHs. We empirically assess how political control of the state legislature and of the state governorship affects the financial performance, the staff structure, the resident composition, and selected resident outcomes at the facility level. The findings of this empirical analysis may shed some light on the debate on political control and its impact on the real world. The study closes the gap between studies exploring the effect of political control on

overall health expenditure or social spending and studies examining the effect of single regulatory measures on NH outcomes.

1.1 | The role of political control at the executive and legislative levels

The effect of political control of the legislature on outcomes has been empirically tested by exploiting the variation across US states and internationally by exploiting the variation across OECD countries. Democratic control results in higher budget totals, tax burdens, and welfare spending than Republican control.[4-7] Similarly, cross-country research reveals that leftist governments increase overall social spending,[8-10] although two studies document a weakening of this relationship in the 1990s.[11,12]

Empirical evidence on the role and importance of the governor is mixed. Lewis et al[13] and Barrilleaux and Berkman[14] present evidence that governors play a significant role in pursuing redistributive policies, while Reed[7] and Ferguson[15] do not find support for this hypothesis. However, considering that the executive officer's formal power is often limited and a veto can be overruled by a legislative supermajority in all states, it is likely that the political control wielded by the governor affects NHs to a lesser extent than political control of the legislative chambers.

1.2 | How political control affects Medicaid's long-term care services

Although Medicaid primarily covers acute care, 25.0% of its budget was spent on long-term care in 2014.[16] Medicaid's $118.7 billion long-term care budget represents more than one-third of NHs' revenues.[17] Unlike Medicare, which is a national health insurance program that is solely administered and funded by the federal government, Medicaid is a joint federal-state program that is administered by the states. The state programs have to conform to federal guidelines in order for the state to receive matching funds and grants. However, with increasing state discretion over the past 50 years, state governments are now the most important decision makers with regard to eligibility, reimbursement, and the provision of care in Medicaid long-term care programs.[18]

Changes in Medicaid regulations are shaped at the state level through the legislative process. In all US states except Nebraska,* the legislative procedure resembles the federal process. After a bill is introduced, it must pass both legislative chambers, that is, the House and the Senate. During this cumbersome process, the bill is debated and modified if necessary. Bills can die by failing to gain a majority in the subcommittees, through gatekeeping by the chair,[19] or due to filibuster.[20] After the debate in the legislature, the bill must be signed by the two presiding chairs and, depending on the state, by the governor. In some states, the constitution allows for a gubernatorial veto that can be overruled by the two chambers with a supermajority.[21]

Politicians' political party plays a significant role in defining Medicaid eligibility criteria and benefit coverage.[22] NHs' revenues can be managed through changes in Medicaid reimbursement rates and Medicaid eligibility, and the provision of care is sensitive to the reimbursement structure.[23] Effort and expenses can be deliberately influenced by imposing regulatory requirements, such as minimum staffing ratios,[24] wage pass-through laws,[25] care guidelines, staff education regulations,[26,27] and documentation requirements.[28] In addition to directly influencing revenue and expenses, the acting government may issue mandates to improve resident outcomes by strengthening public reporting,[29,30] altering the regulatory process or implementing practice guidelines.[31]

State governments frequently use their power and their instruments to shape the delivery of care. In 2015, 31 states increased Medicaid spending, while 13 cut it.[2] In 2009, the average state reimbursement was $165.33 per resident day.† Between-state variation was very high, with South Dakota offering only approximately half the rate of New York ($114.03 vs $228.52). In addition to between-state variation, reimbursement also varied substantially across time. While Oregon (+131.2%) and Arkansas (+122.8%) more than doubled their reimbursements between 1999 and 2009, North Carolina (+34.9%) and Illinois (+34.9%) increased reimbursements by only approximately one-third over the same 11-year period. Regulatory requirements also varied substantially: 29 of the reporting states collected a resident bed tax, 37 had a bed-hold policy in place that awards a reduced rate for holding a bed while a resident is in the hospital, and 12 states granted wage pass-through payments to increase wages and benefits for direct-care staff.

1.3 | Nursing homes' responses to a changing political environment

In order to optimize overall business performance, NH managers align their engagement in their main business segments, that is, Medicaid, Medicare, and private-pay services, with the political and regulatory environment. In case of revenue losses in the Medicaid segment, managers stabilize revenues and profit margins by targeting higher-margin Medicare and private-pay residents more intensely[32,33] or by restricting access for high-need, high-cost, but low-profit residents, for example, dual eligibles.[34] Managers may also reduce staffing, which represents their largest cost category.

However, reactions may differ between not-for-profit and for-profit NHs. Approximately 75% of all facilities in the US market are considered to be for-profit NHs,[35] and they are assumed to operate as profit maximizers[36] that can be achieved by preferring private-pay and Medicare over Medicaid residents.

Not-for-profit organizations are obliged to serve collective purposes, and they are usually driven by their mission. Nevertheless, they have to break even, and therefore, they have to consider profit in their objectives in addition to welfare and output maximization.[37] In some cases, not-for-profit organizations face the dilemma of entering commercial fields that may conflict with their social mission to overcome financial constraints. In particular in markets where not-for-profit and profit-oriented NHs are forced to compete, it is difficult to distinguish between not-for-profit and for-profit organizations.[38]

1.4 | Conceptual framework

Political control of the House and the Senate enables parties to pass laws that shape the Medicaid financed part of the NH industry according to their political ideals. Laws on state level (a) may influence financial performance of NHs, for example, through changes in Medicaid reimbursement rates, (b) may affect the resident composition, for example, by changing the Medicaid eligibility criteria, or (c) may have an impact on the outcomes, for example, through public reporting. The literature shows that NHs react to regulatory changes with changes in their resident mix,[39,40] staff structure,[41,42] or resident outcomes.[41,43,44] While we can observe the political control of the House and the Senate and the effects on NHs, we are often not able to observe and disentangle the multitude of different measures that are enacted simultaneously by the legislature (see Figure 1).

We hypothesize that the effects on financial performance, structure, and outcomes differ if one party controls House and Senate compared to a divided legislature because the parties do not have to compromise. In case of a unified Republican legislature, we expect that the legislature will pass a bundle that restrict access and reimbursement of Medicaid residents and loosen regulatory requirements. These measures will then lead to a decrease in NH revenues and expenses because of a lower occupancy with Medicaid residents and less regulatory burden. We expect that a legislature controlled by the Democrats will pass a bundle of laws and regulations that increase Medicaid eligibility, improve reimbursement, and tighten regulatory requirements[45] leading to increasing revenues and costs, while outcomes will improve, and more senior staff will be hired. Finally, we hypothesize that for-profit NHs are more likely to be affected by political control because the dependency on Medicaid residents is higher for for-profit NHs and because not-for-profit NHs are meant to pursue a charitable mission. However, if not-for-profit facilities are becoming increasingly like for-profit NHs as Weisbrod[38] suggests, effects of political control should not differ between NH types.

2 | METHODS

2.1 | Data

Financial facility-level data for the years 1996-2014 were retrieved from the mandatory, annually published Centers for Medicare and Medicaid Services (CMS) cost reports for NHs that are collected using the standardized forms CMS-2540-96 (until 2010) and CMS-2540-10 (since 2010). The cost report information includes data from all Medicare-certified NHs on total resident revenues (Title XVIII, Title XIX, and other third-party revenues) and total operating expenses across all business units as defined in the cost reports. Operating profit was defined as the difference between revenues and operating expenses. Cost reports with a reporting period of 90 days or more were considered. As financial year start dates and reporting periods vary by NH, we used June 30th as the reference date for each calendar year and standardized expenses, revenues, and profits to 365 days. All US$ amounts are inflation adjusted and represent 2014 US$.[46]

Nursing homes' operational and aggregate resident characteristics for the years 1996-2014 were retrieved from the Online Survey, Certification and Reporting data network (OSCAR). Specifically, we extracted the aggregate resident acuity index[‡]; the total number of beds; the ownership status; the number of current Medicaid, Medicare, and private-pay residents; and the staff structure in full-time equivalents (FTE), that is, the number of registered nurses (RNs), licensed practical nurses (LPNs), and certified nursing assistants (CNAs). We also extracted indicators for residents' health outcomes, that is, percentage of residents hospitalized, percentage of residents on psychoactive drugs, and percentage of residents with pressure ulcers.

Data on the majorities in the two legislative chambers and the governorship during the legislative sessions from 1995 to 2013 were retrieved for all US mainland states with a bicameral legislature,[§]

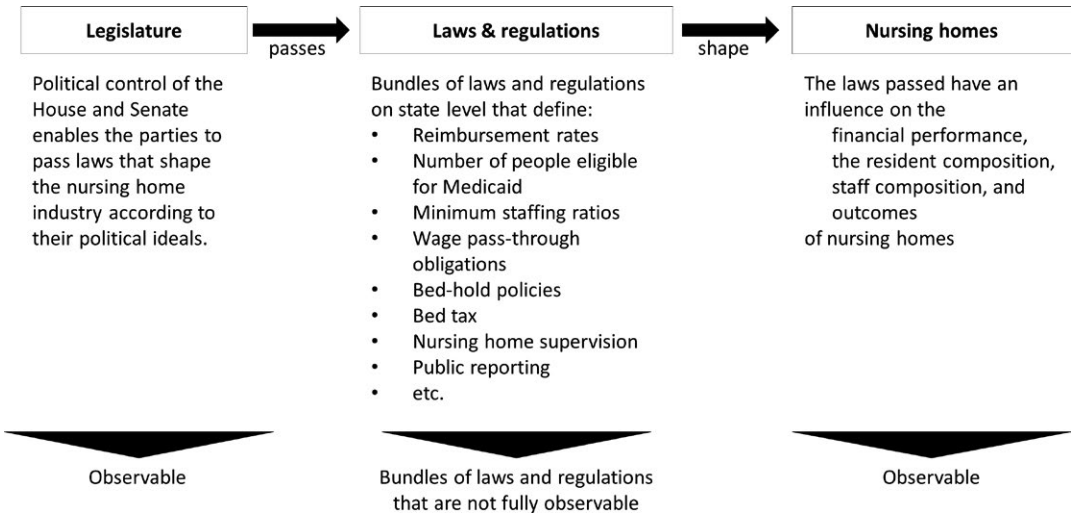

FIGURE 1 Mechanisms by which political control influences financial performance, resident composition, and outcomes of nursing homes

that is, all states except Nebraska, Alaska, Hawaii, and the District of Columbia. For both parties, we coded a binary variable indicating a unified legislature in the session year. A legislature was considered unified if the same party held more than 50% of the votes in both chambers.

We constructed a 19-year panel by merging data from OSCAR and the cost reports using the provider identifier and year. State election outcomes were merged by state and year. We excluded public and hospital-based NHs, as they are likely to have different organizational and financial structures. Reported revenues or expenses per occupied bed-day that belonged to the 1st or the 99th percentile of a calendar year were considered inconsistent, and the facility-year was truncated. A sensitivity analysis using the 5th and 95th percentile and the yearly thresholds applied are provided in Appendices S1 and S2. The panel is unbalanced, as some NHs opened or closed during the period of observation.

2.2 | Empirical Model

First, we specified the following empirical model to identify the effect of Democratic and Republican political control on outcomes:

$$y_{ist} = X_{ist}\beta + NH + L^{D}_{st-1}\gamma^{*}NH + L^{R}_{st-1}\delta^{*}NH + T^{D}_{st-1}\lambda + T^{R}_{st-1}\rho + \mu_{s} + \nu_{i} + \eta_{t} + \epsilon_{ist}, \quad (1)$$

where y_{ist} represents a time-varying outcome variable at the NH level. Depending on the model, the dependent variable represents yearly facility revenues, expenses, and profits; the number of Medicaid, Medicare, and private-pay residents; the number of RNs, LPNs, and CNAs; or resident outcome indicators. The selected variables are likely to be sensitive to changes in political control. For definitions and rationales, consult Table 1. X_{ist} represents a set of time-varying NH characteristics, that is, the total number of beds and the acuity index. By controlling for the average residents' acuity at the facility level, we can separate need-based budget adjustments from partisan-motivated adjustments. *NH* is defined as a binary variable indicating NH type, that is, for-profit and not-for-profit NH. L^{D}_{st-1} and L^{R}_{st-1} are binary lagged variables representing the previous year's unified legislature of the Democratic and the Republican party, respectively. T^{D}_{st-1} and T^{R}_{st-1} are binary lagged variables that indicate a trifecta, that is, T^{D}_{st-1} is coded one if a unified Democratic legislature coincides with a Democratic governor, while T^{R}_{st-1} is coded one if a unified Republican legislature coincides with a Republican governor. The coefficients γ, δ, λ, and ρ are the coefficients of primary interest, as they measure the effect of political control on outcomes. μ_{s} and ν_{i} control for unobservables at the state and facility levels. The year fixed effect η_{t} makes the model robust against unobserved time-varying trends affecting all NHs, such as general technological progress, a shift from NH to home-based care, changes in accounting policies, inflation, overall efficiency improvement, or health policy changes at the federal level.

Correlation between the explanatory variables and the residuals was handled using mean differencing. Mean differencing allows one to exploit within-facility variation and to avoid bias arising from unobserved and potentially confounding cross-sectional heterogeneity, for example, time-invariant environmental factors such as urban vs rural settings, deprivation, or other social determinants. We use restricted maximum-likelihood estimation with Huber-White corrected standard errors, that is, clustered standard errors on state level, to estimate (2).

$$\Delta y_{ist} = \Delta X_{ist}\beta + NH + \Delta L^{D}_{st-1}\gamma^{*}NH + \Delta L^{R}_{st-1}\delta^{*}NH + \Delta T^{D}_{st-1}\lambda + \Delta T^{R}_{st-1}\rho + \eta_{t} + \Delta\epsilon_{ist} \quad (2)$$

In the final step, we tested whether the variables indicating a trifecta, T^{D}_{st-1} and T^{R}_{st-1}, improve the model fit using an F test, as one might assume that holding the governorship in addition to both legislative chambers increases the partisan effect. Accounting for a trifecta does not improve the model fit, that is, the parameter estimates do not differ, $F = 1.40$ ($P > 0.2475$). This finding also does not change when excluding the six states without line-item veto power of the governor, that is, by excluding Indiana, Nevada, New Hampshire, North Carolina, Rhode Island, and Vermont. Therefore, we restricted the model to the following reduced form for all estimations:

$$\Delta y_{ist} = \Delta X_{ist}\beta + NH + \Delta L^{D}_{st-1}\gamma^{*}NH + \Delta L^{R}_{st-1}\delta^{*}NH + \eta_{t} + \Delta\epsilon_{ist} \quad (3)$$

In all estimations, we accounted for the hierarchical structure by nesting NHs within states. Further, we imposed blocks with an autoregressive structure in the covariance matrix at the facility level to account for correlation due to time-repeated measures within the error term.[47] All estimations were performed using SAS®9.4, SAS Institute Inc., Cary, NC, USA.

3 | RESULTS

From 1995 to 2013, a total of 346 state-years of a unified Democratic legislature and 348 state-years of a unified Republican legislature were observed. Only a few states have consistently voted for one party over the full 19 years of observation, although conventional wisdom might suggest strong political persistence of red and blue states (see Appendix S3). A unified Democratic legislature lasted an average of 7.61 years, and a unified Republican legislature lasted an average of 6.96 years. After merging and refining the datasets, we obtained a sample of a total of 13 737 NHs and 196 320 facility-years (Table 2). Their average size was 115.3 (SD: 57.7) beds. The average number of beds decreased from 123.6 (SD: 63.8) in 1996 to 111.6 (SD: 55.0) in 2014, while the average acuity index increased from 11.6 (SD: 1.3) to 12.2 (SD: 1.2) over the same period. Occupancy fell from 89.1% (SD: 10.1) in 1996 to 83.5% (SD: 11.8) in 2014. Not-for-profit NHs amount to 3815. Resident composition of NHs differs by type. For-profit NHs have a higher share of comparatively low paid Medicaid residents, while not-for-profit NHs serve more private-pay residents. However, not-for-profit NHs generate lower profits on average than for-profit NHs, but not-for-profit NHs have been closing the

TABLE 1 Definitions and rationales of dependent variables

Dependent variables	Definition	Rationale
Financial performance		
Revenues	Total resident revenue for the entire facility	Measures the asset inflow. Revenues are sensitive to changes in the Medicaid budget and reimbursement rates
Operating expenses	Total operating expenses for the entire facility	Measures the asset outflow. Expenses are sensitive to changes in regulatory requirements, for example, wage pass-through legislation or documentation requirements
Operating profit	Total resident revenue minus total operating expenses	Measures the extent to which asset inflows (revenues) compare with asset outflows (expenses). Operating profit is sensitive to changes in expenses or changes in revenues
Operating profit margin	Operating profit divided by revenues	Measured how well a nursing home is being managed. Operating profit margin is sensitive to changes in expenses, revenues, and profits
Resident composition		
Medicaid (Title XIX)	Number of residents who are paid for by Medicaid	Medicaid residents belong to the most vulnerable population. Reimbursement rates are defined by the states and are usually lower than Medicare and private-pay rates. The number of Medicaid residents is sensitive to changes in the Medicaid budget, rates, or regulations because nursing homes must adapt to a new regulatory environment
Medicare (Title XVIII)	Number of residents who are paid for by Medicare	Medicare covers post-acute care services for up to 100 days in case of a prior hospital stay. Reimbursement rates are defined at the federal level and are usually higher than Medicaid but lower than private-pay rates. The number of Medicare residents should not be sensitive to changes in the state government because the Medicare budget, rates, and regulation are administered at the federal level
Private payer	Number of residents who are paid for privately	Private-pay residents freely negotiate reimbursement. Reimbursement is usually higher than regulated Medicaid or Medicare rates. The number of private-pay residents may be sensitive to changes in the number of Medicaid and Medicare residents, for example, nursing homes may substitute private-pay for Medicaid residents
% occupancy	Number of residents divided by total number of beds	The occupancy rate serves as a proxy for access to long-term care services. The occupancy rate may be sensitive to changes in Medicaid eligibility
Staff structure		
Registered nurses	Number of individuals licensed to practice as registered nurses in the state where the facility is located (full-time equivalents)	Registered nurses are the most skilled professionals, and they work independently in many areas. An adequate number and high qualifications for the staff are essential for high-quality care, but the staff also represents the largest cost category in a nursing home. The number of registered nurses is sensitive to changes in regulatory requirements, for example, minimum staffing ratios or changes in reimbursement
Licensed practical nurses	Number of individuals licensed to practice as licensed practical nurses in the state where the facility is located (full-time equivalents)	Licensed practical nurses are usually supervised by registered nurses. An adequate number and high qualifications for the staff are essential for high-quality care, but the staff also represents the largest cost category in a nursing home. The number of licensed practical nurses may be sensitive to changes in regulatory requirements, for example, minimum staffing ratios or changes in reimbursement
Certified nursing assistants	Number of individuals who have completed a state-approved training and competency evaluation program and who are providing nursing or nursing-related services to residents (full-time equivalents)	Certified nursing assistants are supervised by licensed practical nurses or registered nurses. An adequate number and high qualifications for the staff are essential for high-quality care, but the staff also represents the largest cost category in a nursing home. The number of licensed practical nurses may be sensitive to changes in regulatory requirements, for example, minimum staffing ratios or changes in reimbursement
Resident outcomes		
% of residents on psychoactive drugs	Percentage of residents receiving any psychoactive drugs	Psychoactive agents may be misused as a convenient way to quiet down annoying residents. The percentage of residents on psychoactive drugs is sensitive to changes in staff intensity and changes in regulatory requirements

(Continues)

TABLE 1 (Continued)

Dependent variables	Definition	Rationale
% of residents with pressure ulcers	Percentage of residents with pressure ulcers	Pressure ulcers are caused by unrelieved pressure to the skin and are a sign of nursing home neglect. The percentage of residents with pressure ulcers is sensitive to changes in staff intensity and changes in regulatory requirements
Hospitalizations	Number of hospitalizations during the calendar year for every 365 resident days	Nursing home residents are transferred to hospitals if they have an acute change in their condition. Hospitalizations can usually be avoided by timely care from staff members who know their residents' needs. The number of hospitalizations therefore indicates the general quality of care. The number of hospitalizations is sensitive to changes in staff intensity and changes in regulatory requirements

profit gap to their for-profit peers in recent years. Summary statistics are reported in Table 2.

The main results are presented in Table 3. Political control has a significant impact on the financial performance of for-profit NHs, whereas this is not the case with not-for-profit NHs. For-profit NHs gain significantly in revenues by $85 977 ($P = 0.0449$) every year following a unified Democratic legislature compared to a divided legislature. Revenues decrease by −$124 940 ($P = 0.0424$) after the Republicans controlled the legislature. Potential effects on not-for-profit NHs show in the same direction, but are not significant at the 5%-level.

We do not observe a significant change in expenses, but we observe significant effects on operating profits. A unified Republican legislator leads to a reduction in operating profit of −$94 012 ($P = 0.0265$), representing 5.5% of the average NH's operating profit. A unified Democratic legislator leads to an increase in operating profit of $73 653 ($P = 0.0153$), representing 4.3% of the average NH's operating profit. Operating profit margins are not significantly affected.

Resident payer mix composition is affected by political control. Republican political control leads to increase in private-pay residents (0.53; $P = 0.0096$), while Democratic political control leads to a decrease in private-pay residents of −0.54 residents ($P = 0.0472$) in for-profit NHs. Following Republican political control, the number of Medicaid financed residents decreases by −1.06 ($P = 0.0002$) and the number of private-pay residents increases by 0.52 ($P = 0.0274$) in not-for-profit NHs, while the numbers do not change significantly after Democratic political control. These numbers are substantial considering that an average NH accommodates on average 64.8 Medicaid and 21.6 private-pay residents. As hypothesized, the number of Medicare financed residents seems not to be sensitive to state level political control because the United States Congress decides on Medicare issues on federal level. Staffing levels as well as resident outcomes do not change for both NH types after unified takeover of the legislature.

4 | DISCUSSION

Analyzing the effect of political control in the three decisive policy institutions, that is, the two houses of the legislature and the governorship, provides important insights into how these political institutions shape the provision of long-term care at the facility level. According to our results, political control of the two legislative chambers is more important than holding the governorship. Whether Republican or Democrat, both parties start immediately implementing their diverging political visions after they obtain the majority in both chambers of the legislature with observable results in the following year. Their political agendas not only significantly differ from each other but also significantly differ from the more moderate political decision making that can be observed during a divided legislature. However, not all facilities are similarly affected. The effect of political control is less intense for not-for-profit NHs than for-profit NHs, most likely because they have different missions and because of their different resident composition.

The observed changes in resident composition are most likely due to restrictions or expansions of Medicaid eligibility. Following a Republican controlled legislature, we observe a stronger decrease in Medicaid than an increase in private-pay residents. Therefore, access to Medicaid NH services seems to be constrained by Republicans and not all individuals previously entitled to Medicaid can afford to pay their long-term care out-of-pocket. However, access to long-term care services may not be necessarily worse because some individuals may receive home health care instead. However, to our knowledge, evidence as to whether quality of home health care is similar to NH care is very limited.

Variables concerning financial performance and resident composition seem to be more sensitive to changes in political control compared to staff structure and health outcomes. This does not necessarily mean that political control does not affect health outcomes, but it may indicate that the mechanism how regulatory measures impact health outcomes is more complex because health outcomes also depend on unobserved or contingent factors. This makes the causal relationship between regulatory measures and health outcomes less obvious which makes it more difficult to implement effective measures for political decision makers. Similarly, Bowblis, Applebaum[48] find in their analysis of increased reimbursement for NHs an increase in staffing levels but they could not demonstrate effects in non-staffing quality outcomes caused by changes in Medicaid reimbursement. Also, Grabowski, Stevenson, Caudry, O'Malley, Green, Doherty, and Frank[49] could find little impact of a value-based purchasing demonstration on

TABLE 2 Summary statistics of the dependent and independent variables

	Observations (facility-years)	Unit	Mean	SD	5th Pctl	95th Pctl
Financial performance						
Revenues	196 320	$1000	10 576	8180	2919	23 825
For-profit	153 773	$1000	10 143	7030	2917	22 462
Not-for-profit	42 547	$1000	12 139	11 271	2927	29 290
Operating expenses	196 320	$1000	8879	6851	2710	19 103
For-profit	153 773	$1000	8277	5250	2678	17 191
Not-for-profit	42 547	$1000	11 058	10 530	2839	25 858
Operating profit	196 320	$1000	1696	3021	−763	6 482
For-profit	153 773	$1000	1867	2838	−443	6 604
Not-for-profit	42 547	$1000	1081	3537	−2333	5 876
Operating profit margin	196 320		0.126	0.167	−0.114	0.361
For-profit	153 773		0.144	0.153	−0.078	0.371
Not-for-profit	42 547		0.060	0.196	−0.241	0.314
Resident composition						
Medicaid (Title XIX)	196 320	# of residents	64.8	42.7	14.0	139.0
For-profit	153 773	# of residents	65.6	39.6	17.0	136.0
Not-for-profit	42 547	# of residents	62.3	52.5	7.0	151.0
Medicare (Title XVIII)	196 320	# of residents	12.9	12.0	1.0	34.0
For-profit	153 773	# of residents	13.3	11.8	1.0	34.0
Not-for-profit	42 547	# of residents	11.6	12.6	1.0	32.0
Private payer	196 320	# of residents	21.6	18.0	3.0	55.0
For-profit	153 773	# of residents	19.1	15.2	2.0	47.0
Not-for-profit	42 547	# of residents	30.8	23.4	4.0	74.0
% occupancy	196 320	Percent	86.1	11.4	61.7	98.9
For-profit	153 773	Percent	85.2	11.6	60.7	98.5
Not-for-profit	42 547	Percent	89.2	10.0	67.5	100.0
Staffing structure						
Registered nurses	196 230	FTE	7.0	8.0	0.7	18.6
For-profit	153 692	FTE	6.7	7.6	0.6	17.6
Not-for-profit	42 538	FTE	8.3	9.0	1.1	21.9

(Continues)

TABLE 2 (Continued)

	Observations (facility-years)	Unit	Mean	SD	5th Pctl	95th Pctl
Licensed practical nurses	196 161	FTE	14.9	9.6	3.6	32.2
For-profit	153 636	FTE	14.8	9.1	3.8	31.2
Not-for-profit	42 525	FTE	15.3	11.4	3.1	35.9
Certified nursing assistants	196 237	FTE	43.4	26.3	14.8	87.1
For-profit	153 700	FTE	41.9	23.5	14.8	81.8
Not-for-profit	42 537	FTE	49.0	34.1	14.9	107.1
Resident outcomes						
% of residents on psychoactive drugs	196 320	Percent	61.1	15.4	34.5	84.0
For-profit	153 773	Percent	61.2	15.7	33.9	84.6
Not-for-profit	42 547	Percent	60.6	14.1	36.6	81.5
% of residents with pressure ulcers	196 320	Percent	6.9	4.6	1.1	14.7
For-profit	153 773	Percent	7.1	4.7	1.2	15.1
Not-for-profit	42 547	Percent	6.1	4.3	0.0	13.4
Hospitalizations[a]	149 588	Hosp./resident/year	0.9	0.5	0.3	1.7
For-profit	116 987	Hosp./resident/year	0.9	0.5	0.4	1.8
Not-for-profit	32 601	Hosp./resident/year	0.8	0.4	0.3	1.5
Control variables						
Number of beds	196 320	Count	115.3	57.7	48.0	215.0
For-profit	153 773	Count	114.9	52.7	49.0	207.0
Not-for-profit	42 547	Count	117.0	72.8	42.0	242.0
Acuity index	196 320	Index	12.0	1.4	9.9	13.9
For-profit	153 773	Index	12.0	1.4	9.9	14.0
Not-for-profit	42 547	Index	11.8	1.3	9.9	13.6

NH, nursing home; Pctl, percentile; SD, standard deviation.
[a]Due to data restrictions, for 2000-2013 only.

NHs' quality outcomes. Therefore, the non-significant findings in health outcomes should be considered with care. Staff levels are likely not affected because there is a general shortage in nurses on all levels. Therefore, NHs will not reduce staff levels with a decreasing occupancy and they have difficulties to increase staff levels despite increasing residents.

With our study on political control, we complement studies that analyze the effect of distinct policy initiatives, such as the effect of minimum staffing standards,[50,51] certificate-of-need regulations,[52,53] and reimbursement changes.[41,43,54] In comparison with those studies, we analyze the full range of Republican and Democratic possibilities for policy making and how these affect the NH industry. Although we cannot attribute the effects to specific policy interventions, this approach is not necessarily a disadvantage. We provide a more holistic and balanced overview of the effect of political control, and our empirical model specification is less affected by unobserved confounding. Confounding is often a major limitation in policy intervention analyses because most interventions differ in design, and they are often implemented simultaneously through a whole array of policy measures.

4.1 | Unified Republican legislature

We observe a significant reduction in Medicaid residents and a significant increase in private-pay residents following a unified Republican legislature. This shift in resident composition is more likely to be a result of restrictive Medicaid policies than it is a deliberate decision of a NH to focus on the more lucrative private-pay segment. If it would be a deliberate decision of the NH to substitute residents, one would expect that the effect on not-for-profit NHs would be smaller than on for-profit NHs. The strive for profit maximization may incentivize for-profit NHs to more strongly prefer the private-pay segment in which eligibility, reimbursement rates, and service levels are more freely negotiable compared to not-for-profit NHs that at least partly follow a charitable mission. In addition, choices of NHs are often restricted. Most NHs operate at low capacity which is at 86.1% on average. At these levels, NHs cannot choose between admitting an unattractive Medicaid or a private-pay resident. They rather choose between a Medicaid resident or an empty bed.

We do not observe a significant effect of Republican political control on NHs' expenses. Here, it is likely that two opposing effects occur that are under the control of the facilities. NHs may reduce service levels for Medicaid and invest in more demanding private-pay residents to address the new environment. One may also argue that state mandates are put in place that prevent NHs from reducing service levels for Medicaid beneficiaries or that it is more difficult for NHs to enforce cost reductions than to increase expenses. However, the increase in the private-pay segment does not fully offset the loss in the important Medicaid segment because profits—the residual of revenues and expenses—seem to be negatively affected by Republican political control.

4.2 | Unified Democratic legislature

Revenues of for-profit NHs increase the year following a Democratic domination of the legislature while revenues of not-for-profit NHs do not change significantly. This results in a significant increase in profits of $73 653. The observed increase in revenues therefore raises the question of whether the additional resources are tied to further regulatory requirements. Such requirements may ask NHs to serve more Medicaid beneficiaries, obey minimum-staffing ratios, increase wages of direct-care staff, extend bed-hold policies, or pay higher bed taxes. However, according to our data, we do not observe significant changes in the number of Medicaid residents, the number of staff, or in the facilities' expenses. This indicates that the potential regulatory requirements are presumably not expensive, not effective, or not existent and in turn lead to observable increases in profits for the for-profit NHs.

One might also argue that boosting NHs' financial performance[55] or providing higher reimbursement[54,56] leads to better resident outcomes. However, according to our results, political control is not significantly related to resident outcomes. This finding is surprising, as a large number of hospitalizations are considered to be inappropriate or avoidable,[57] and the number of hospitalizations seems to be sensitive to changes in reimbursement policies.[58] However, Medicare pays for hospitalization, while Medicaid is neutral or even leads to savings when a resident is hospitalized.

4.3 | For-profit vs not-for-profit nursing homes

According to our data, not-for-profit NHs are less sensitive to political control than are for-profit NHs. The share of private-pay residents in not-for-profit NHs is 29.4%, about 50% higher than in for-profit NHs (19.5%). The higher share of state-regulated Medicaid residents renders for-profit NHs more exposed to political control, while the higher share of high-margin non-regulated private-pay residents provides not-for-profit NHs with more financial flexibility. This financial flexibility allows NHs to achieve charitable goals and to break even simultaneously. Interestingly, since for-profit and not-for-profit NHs are affected differently by political control, it may be the case that not-for-profit NHs are not becoming like private firms as Weisbrod[38] suggests.

4.4 | Gubernatorial power

In the sphere of NH care and Medicaid payment policies, political control matters at the legislative level but—according to our results—not at the gubernatorial level. Fundamentally, our finding is consistent with the median voter theorem.[59] Similar to Reed[7] and Leigh,[60] we argue that governors have to behave in a more centrist manner than the legislature because they have to appeal to the median voter of the whole state, while members of the legislature have to appeal to the median voters in their districts. Being more centrist than the legislature, the governor does not foster or inhibit the ambitions of the legislature in implementing partisan long-term care policies.

TABLE 3 Parameter estimates of unified Republican and Democratic legislatures and interaction effects with for-profit and not-for-profit nursing homes

	For-profit nursing homes				
	Estimate	**SD**	***P*-value**	**Lower CI**	**Upper CI**
Financial performance					
Revenues	$60 558***	$17 125	0.0004	$26 993	$94 123
Operating expenses	−$3 602	$16 047	0.8224	−$35 055	$27 851
Operating profit	$52 941 ***	$11 526	<0.0001	$30 351	$75 530
Operating profit margin	0.004***	0.001	<0.0001	0.003	0.006
Resident composition					
Medicaid (Title XIX)	−0.11	0.11	0.3144	−0.32	0.10
Medicare (Title XVIII)	0.13 **	0.04	0.0044	0.04	0.21
Private Payer	−0.09	0.07	0.2089	−0.23	0.05
% occupancy	−0.08	0.07	0.2156	−0.21	0.05
Staff structure					
Registered nurses	−0.01	0.03	0.7181	−0.07	0.05
Licensed practical nurses	0.04	0.03	0.2082	−0.02	0.11
Certified nursing assistants	−0.20†	0.11	0.0644	−0.42	0.01
Resident outcomes					
% of residents on psychoactive drugs	0.10†	0.06	0.0794	−0.01	0.21
% of residents with pressure ulcers	0.01	0.01	0.5521	−0.02	0.03
Hospitalizations	0.00	0.00	0.1305	−0.00	0.01
	Not-for-profit nursing homes				
	Estimate	**SD**	***P*-value**	**Lower CI**	**Upper CI**
Financial performance					
Revenues	Reference	–	–	–	–
Operating expenses	Reference	–	–	–	–
Operating profit	Reference	–	–	–	–
Operating profit margin	Reference	–	–	–	–
Resident composition					
Medicaid (Title XIX)	Reference	–	–	–	–
Medicare (Title XVIII)	Reference	–	–	–	–
Private Payer	Reference	–	–	–	–
% occupancy	Reference	–	–	–	–
Staff structure					
Registered nurses	Reference	–	–	–	–
Licensed practical nurses	Reference	–	–	–	–
Certified nursing assistants	Reference	–	–	–	–
Resident outcomes					
% of residents on psychoactive drugs	Reference	–	–	–	–
% of residents with pressure ulcers	Reference	–	–	–	–
Hospitalizations	Reference	–	–	–	–

Notes: Controlled for year, residents' acuity, and total number of beds in all models; Huber-White corrected (robust) standard errors.
***$P < 0.001$; **$P < 0.01$; *$P < 0.05$; †$P < 0.1$.
CI, confidence intervals; SD, standard error.

For-profit nursing homes*unified Republican legislator					For-profit nursing homes*unified Democratic legislator				
Estimate	**SD**	***P*-value**	**Lower CI**	**Upper CI**	**Estimate**	**SD**	***P*-value**	**Lower CI**	**Upper CI**
−$124 940*	$61 566	0.0424	−$245 609	−$4 272	$85 977*	$42 878	0.0449	$1 938	$170 016
−$56 343	$43 224	0.1924	−$141 062	$28 375	$30 788	$34 577	0.3733	−$36 983	$98 558
−$94 012 *	$42 359	0.0265	−$177 034	−$10 991	$73 653*	$30 355	0.0153	$14 157	$133 148
−0.004	0.004	0.3063	−0.012	0.004	0.003	0.003	0.2862	−0.003	0.010
−0.62†	0.35	0.0712	−1.30	0.05	0.58	0.36	0.1137	−0.14	1.29
−0.16	0.23	0.4857	−0.62	0.30	0.31	0.20	0.1274	−0.09	0.71
0.53 **	0.21	0.0096	0.13	0.94	−0.54*	0.27	0.0472	−1.07	−0.01
−0.18	0.21	0.4025	−0.60	0.24	0.18	0.27	0.5059	−0.34	0.70
−0.09	0.09	0.3117	−0.28	0.09	−0.10	0.16	0.5244	−0.40	0.21
−0.05	0.15	0.7442	−0.35	0.25	0.20†	0.11	0.0738	−0.02	0.43
0.03	0.45	0.9487	−0.85	0.91	0.08	0.33	0.8093	−0.56	0.72
0.24	0.30	0.4136	−0.34	0.82	−0.05	0.32	0.8771	−0.67	0.57
0.01	0.10	0.8820	−0.18	0.21	−0.14	0.10	0.1418	−0.33	0.05
−0.01	0.02	0.3854	−0.04	0.02	0.01	0.01	0.5538	−0.02	0.03

Not-for-profit nursing homes*unified Republican legislator					Not-for-profit nursing homes*unified Democratic legislator				
Estimate	**SD**	***P*-value**	**Lower CI**	**Upper CI**	**Estimate**	**SD**	***P*-value**	**Lower CI**	**Upper CI**
−$41 166	$48 222	0.3933	−$135 680	$53 348	$150 154	$129 078	0.2447	−$102 835	$403 143
−$8461	$41 383	0.8380	−$89 570	$72 649	$79 552	$82 349	0.3340	−$81 850	$240 954
−$68 050†	$41 216	0.0987	−$148 831	$12 732	$71 261	$55 488	0.1990	−$37 494	$180 017
−0.005	0.004	0.2004	−0.012	0.003	0.004	0.004	0.3211	−0.004	0.012
−1.06***	0.29	0.0002	−1.62	−0.50	−0.10	0.42	0.8070	−0.93	0.72
0.11	0.17	0.5076	−0.22	0.44	0.20	0.35	0.5608	−0.48	0.88
0.52*	0.24	0.0274	0.06	0.98	−0.33	0.56	0.5609	−1.43	0.78
−0.33†	0.17	0.0559	−0.68	0.01	−0.31	0.25	0.2094	−0.80	0.18
−0.11	0.11	0.3086	−0.32	0.10	−0.13	0.24	0.5783	−0.59	0.33
−0.11	0.13	0.3741	−0.36	0.14	−0.05	0.15	0.7311	−0.35	0.25
−0.05	0.37	0.8926	−0.78	0.68	−0.33	0.40	0.4054	−1.12	0.45
−0.31	0.29	0.2824	−0.89	0.26	−0.13	0.31	0.6646	−0.74	0.47
0.11	0.09	0.2175	−0.06	0.28	0.19†	0.10	0.0549	−0.00	0.38
0.00	0.01	0.8406	−0.02	0.02	0.00	0.01	0.7664	−0.02	0.02

4.5 | Limitations and further research

Our study has several limitations arising from our need for a long data series and the observational nature of our question and analytic approach. First, our measures of quality are related to staffing and aggregated indicators reported in NH OSCAR reports as opposed to the more modern patient level measures derived from Medicare claims like hospitalizations and MDS-based measures like Activities of Daily Living. While widely used and considered as a valid outcome and process indicators in the NH literature,[61] hospitalizations are influenced by payer status,[62] psychoactive drug use varies with facility practice styles, and pressure ulcers may have been present before NH admission. Despite those shortcomings, we are not aware of more suitable quality measures that are measured consistently across 19 years and are available for all NHs in all states. In the future when a long enough data series with newer outcomes become available, our research should be replicated.

While an observational study, we took several measures to address confounding. Mean differencing makes the model robust against factors such as facility size, effects from chain affiliation, competition, general surrounding economic conditions, and deprivation in the area. In addition, the model includes year dummies that capture factors that change nationally, for example, the election of a new president. However, with this model specification, we might have missed time-varying factors that change at the state level, such as above-average economic growth or general economic conditions. Although we believe that we have controlled for most of the confounding factors, an unobserved variable bias may persist. Further research may attempt to control for those time-varying confounding factors using a longer panel or different methods.

Finally, our conceptual model measures the effect of political control of the legislature on NH financial performance, structure, and outcomes. However, the different laws and regulations ultimately causing the changes in the dependent variables are considered a black box. Further research may consider a mediation model where political control influences laws and regulations, especially reimbursement, and laws and regulations passed affect NH financial performance, structure, and outcomes.

5 | CONCLUSION

Our findings expand upon the literature analyzing the impact of political control on state policy decisions. By adding to the existing literature analyzing the impact of political control at the aggregate level, such as the state Medicaid budget or tax dollars, we provide insights into the way that political control affects the single facilities that provide the services. Based on our analysis, we can conclude that political control of the two legislative chambers—but not of the governorship—not only impacts aggregate budgets but also effectively shapes the provision of long-term care services in the field.

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CONFLICT OF INTERESTS

The authors declare that no potential conflict of interest exists.

ENDNOTES

*Nebraska has a unicameral system, while all other states have bicameral systems with two chambers.

†According to a survey of all Medicaid offices conducted at Brown University in 2010.

‡The acuity index is a facility-level aggregate measure defined by the LTC-focus research group at Brown University that is calculated based on the daily living assistance dependencies and other special treatment needs for all residents (see www.ltcfocus.org).

§Data on election results were compiled manually based on information mainly provided by www.ballotpedia.org and www.wikipedia.org. Data obtained was crosschecked with official state website data where available. Data collection was performed in March 2016.

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REFERENCES

1. Miller EA. State discretion and Medicaid program variation in long-term care: when is enough, enough? *J Aging Soc Policy*. 2002;14(3–4):15-35.
2. Officers NAOSB. *The Fiscal Survey of States*. Washington, DC: National Association of State Budget Officers; 2015.
3. Nursing Care Facilities and Continuing Care Retirement Communities; Aggregate and per Capita Amounts, Percent Distribution and Annual Percent Change by Source of Funds: Calendar Years 2010-2026. 2016. https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/Proj2017Tables.zip. Accessed February 14, 2018.
4. Alt JE, Lowry RC. Divided government, fiscal institutions, and budget deficits: evidence from the States. *Am Polit Sci Rev*. 1994;88(4):811-828.
5. Besley T, Case A. Does electoral accountability affect economic policy choices? Evidence from gubernatorial term limits. *Q J Econ*. 1995;110(3):769-798.
6. Alt JE, Lowry RC. A dynamic model of state budget outcomes under divided partisan government. *J Polit*. 2000;62(4):1035-1069.
7. Reed WR. Democrats, republicans, and taxes: evidence that political parties matter. *J Public Econ*. 2006;90(4–5):725-750.
8. Cusack TR. Partisan politics and public finance: changes in public spending in the industrialized democracies, 1955–1989. *Public Choice*. 1997;91(3):375-395.

9. Blais A, Blake D, Dion S. Do parties make a difference? Parties and the size of government in liberal democracies. *Am J Polit Sci*. 1993;37(1):40-62.
10. Blais A, Blake D, Dion S. Do parties make a difference? A reappraisal. *Am J Polit Sci*. 1996;40(2):514-520.
11. Kittel B, Obinger H. Political parties, institutions, and the dynamics of social expenditure in times of austerity. *J Eur Public Policy*. 2003;10(1):20-45.
12. Potrafke N. Did globalization restrict partisan politics? An empirical evaluation of social expenditures in a panel of OECD countries. *Public Choice*. 2009;140(1):105-124.
13. Lewis DC, Schneider SK, Jacoby WG. Institutional characteristics and state policy priorities: the impact of legislatures and governors. *State Polit Policy Quart*. 2015;15(4):447-475.
14. Barrilleaux C, Berkman M. Do governors matter? Budgeting rules and the politics of state policymaking. *Polit Res Quart*. 2003;56(4):409-417.
15. Ferguson MR. Chief executive success in the legislative arena. *State Polit Policy Quart*. 2003;3(2):158-182.
16. Kaiser Family Foundation. Distribution of medicaid spending by service. In. *State Health Facts*. Menlo Park, CA: Kaiser Family Foundation; 2014.
17. Centers for Medicare and Medicaid Services. The National Health Expenditure Accounts (NHEA). 2014.
18. Thompson FJ, Cantor JC, Farnham J. Medicaid long-term care: state variation and the intergovernmental lobby. *J Health Polit Policy Law*. 2016;41:763-780.
19. Denzau AT, Mackay RJ. Gatekeeping and monopoly power of committees: an analysis of sincere and sophisticated behavior. *Am J Polit Sci*. 1983;27(4):740-761.
20. Fisk C, Chemerinsky E. The filibuster. *Stanford Law Rev*. 1997;49(2):181-254.
21. Kollmann K. *The American Political System*. New York: W. W. Norton & Company, Inc; 2012.
22. Grogan CM. Political-economic factors influencing state medicaid policy. *Polit Res Quart*. 1994;47(3):589-622.
23. McKnight R. Home care reimbursement, long-term care utilization, and health outcomes. *J Public Econ*. 2006;90(1–2):293-323.
24. Zhang NJ, Unruh L, Liu R, Wan TT. Minimum nurse staffing ratios for nursing homes. *Nurs Econ*. 2006;24(2):78-85, 93, 55.
25. Foster AD, Lee YS. Staffing subsidies and the quality of care in nursing homes. *J Health Econ*. 2015;41:133-147.
26. Kuske B, Luck T, Hanns S, et al. Training in dementia care: a cluster-randomized controlled trial of a training program for nursing home staff in Germany. *Int Psychogeriatr*. 2009;21(2):295-308.
27. Kuske B, Hanns S, Luck T, Angermeyer MC, Behrens J, Riedel-Heller SG. Nursing home staff training in dementia care: a systematic review of evaluated programs. *Int Psychogeriatr*. 2007;19(5):818-841.
28. Hawes C, Mor V, Phillips CD, et al. The OBRA-87 nursing home regulations and implementation of the resident assessment instrument: effects on process quality. *J Am Geriatr Soc*. 1997;45(8):977-985.
29. Stevenson DG. Is a public reporting approach appropriate for nursing home care? *J Health Polit Policy Law*. 2006;31(4):773-810.
30. Werner RM, Konetzka RT, Kruse GB. Impact of public reporting on unreported quality of care. *Health Serv Res*. 2009;44(2p1):379-398.
31. Wiener JM. An assessment of strategies for improving quality of care in nursing homes. *Gerontologist*. 2003;43(suppl 2):19-27.
32. Grabowski DC. Medicare and medicaid: conflicting incentives for long-term care. *Milbank Q*. 2007;85(4):579-610.
33. Harrington C, Hauser C, Olney B, Rosenau PV. Ownership, financing, and management strategies of the ten largest for-profit nursing home chains in the United States. *Int J Health Serv*. 2011;41(4):725-746.
34. Mitchell JB, Haber SG. State payment limitations on medicare cost-sharing: impact on dually eligible beneficiaries. *INQUIRY* 2004;41(4):391-400.
35. Harris-Kojetin L, Sengupta M, Park-Lee E, et al. Long-term care providers and services users in the United States: data from the national study of long-term care providers, 2013-2014. *Vital Health Stat* 2016;38:1-118.
36. Weech-Maldonado R, Laberge A, Pradhan R, Johnson CE, Yang Z, Hyer K. Nursing home financial performance: the role of ownership and chain affiliation. *Health Care Managent Rev*. 2012;37(3):235-245.
37. Deneffe D, Masson RT. What do not-for-profit hospitals maximize? *Int J Ind Organ*. 2002;20(4):461-492.
38. Weisbrod BA. *To Profit or Not to Profit: The Commercial Transformation of the Nonprofit Sector*. Cambridge; New York: Cambridge University Press; 1998.
39. Feng Z, Grabowski DC, Intrator O, Mor V. The effect of state medicaid case-mix payment on nursing home resident acuity. *Health Serv Res*. 2006;41(4 Pt 1):1317-1336.
40. Rahman M, Gozalo P, Tyler D, Grabowski DC, Trivedi A, Mor V. Dual eligibility, selection of skilled nursing facility, and length of medicare paid postacute stay. *Med Care Res Rev*. 2014;71:384-401.
41. Konetzka RT, Yi D, Norton EC, Kilpatrick KE. Effects of medicare payment changes on nursing home staffing and deficiencies. *Health Serv Res*. 2004;39(3):463-488.
42. Feng Z, Lee YS, Kuo S, Intrator O, Foster A, Mor V. Do medicaid wage pass-through payments increase nursing home staffing? *Health Serv Res*. 2010;45(3):728-747.
43. Grabowski DC. Does an increase in the medicaid reimbursement rate improve nursing home quality? *J Gerontol Series B: Psychol Sci Soc Sci*. 2001;56(2):S84-S93.
44. Lin H. Revisiting the relationship between nurse staffing and quality of care in nursing homes: an instrumental variables approach. *J Health Econ*. 2014;37:13-24.
45. Miller EA. State health policy making determinants, theory, and methods: a synthesis. *Soc Sci Med*. 2005;61(12):2639-2657.
46. Bureau of Labor Statistics. Consumer Price Index (CPI). 2018.
47. Kincaid C. Guidelines for selecting the covariance structure in mixed model analysis. Proceedings of the Thirtieth Annual SAS Users Group International Conference. 2005(198-30).
48. Bowblis JR, Applebaum R. How does medicaid reimbursement impact nursing home quality? The effects of small anticipatory changes. *Health Serv Res*. 2017;52(5):1729-1748.
49. Grabowski DC, Stevenson DG, Caudry DJ, et al. The impact of nursing home pay-for-performance on quality and medicare spending: results from the nursing home value-based purchasing demonstration. *Health Serv Res*. 2017;52(4):1387-1408.
50. Matsudaira JD. Government regulation and the quality of healthcare: evidence from minimum staffing legislation for nursing homes. *J Hum Resour*. 2014;49(1):32-72.
51. Bowblis JR, Hyer K. Nursing home staffing requirements and input substitution: effects on housekeeping, food service, and activities staff. *Health Serv Res*. 2013;48(4):1539-1550.
52. Grabowski DC, Ohsfeldt RL, Morrisey MA. The effects of CON repeal on medicaid nursing home and long-term care expenditures. *INQUIRY* 2003;40(2):146-157.
53. Harrington C, Swan JH, Nyman JA, Carrillo H. The effect of certificate of need and moratoria policy on change in nursing home beds in the United States. *Med Care*. 1997;35(6):574-588.
54. Mor V, Gruneir A, Feng Z, Grabowski DC, Intrator O, Zinn J. The effect of state policies on nursing home resident outcomes. *J Am Geriatr Soc*. 2011;59(1):3-9.
55. Park J, Werner RM. Changes in the relationship between nursing home financial performance and quality of care under public reporting. *Health Econ*. 2011;20(7):783-801.

56. Cohen JW, Spector WD. The effect of Medicaid reimbursement on quality of care in nursing homes. *J Health Econ*. 1996;15(1):23-48.
57. Ouslander JG, Lamb G, Perloe M, et al. Potentially avoidable hospitalizations of nursing home residents: frequency, causes, and costs. *J Am Geriatr Soc*. 2010;58(4):627-635.
58. Mor V, Intrator O, Feng Z, Grabowski DC. The revolving door of rehospitalization from skilled nursing facilities. *Health Aff*. 2010;29(1):57-64.
59. Downs A. An economic theory of political action in a democracy. *J Political Econ*. 1957;65:135-150.
60. Leigh A. Estimating the impact of gubernatorial partisanship on policy settings and economic outcomes: a regression discontinuity approach. *Eur J Polit Econ*. 2008;24(1):256-268.
61. Spilsbury K, Hewitt C, Stirk L, Bowman C. The relationship between nurse staffing and quality of care in nursing homes: a systematic review. *Int J Nurs Stud*. 2011;48(6):732-750.
62. Cai S, Mukamel DB, Veazie P, Katz P, Temkin-Greener H. Hospitalizations in nursing homes: does payer source matter? Evidence from New York state. *Med Care Res Rev*. 2011;68(5):559-578.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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