DO LOCAL GOVERNMENTS REPRESENT VOTER PREFERENCES? EVIDENCE
FROM HOSPITAL FINANCING UNDER THE AFFORDABLE CARE ACT

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ABSTRACT

A mainstream motivation for decentralized government is to enable public service investments to better align with political preferences that may differ by geographical region. This paper examines how political preferences determine local government provision of hospital services. We find that local governments in areas more supportive of public insurance expansion responded to such state action by increasing expenditures on hospitals, whereas those in areas that voted against such expansions used the savings to reduce property taxes. This finding suggests that local government financial responses indeed align with political preferences.

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1 Introduction

According to Oates' 1972 Decentralization Theorem, one of the main rationales for the existence of local (as opposed to only state or national) governments is that they can better respond to differing consumer-voter preferences for the public provision of goods and services (Oates, 1993; Besley and Coate, 2003; De Groot, 1988; Brueckner, 2000). However, scholars and practitioners have long expressed skepticism about whether decentralization works in practice, particularly as voters may not be able to monitor local government actors due to asymmetric information. Preemption policies (e.g. Local Tax-And-Expenditure Limits, Dillon Rules) that grant states the power to constrain local governments are arguably motivated by the perspective that local voters systematically lack the capacity to constrain the actions of their local governments for their own benefit.

While much research in the political economy literature demonstrates government errors–particularly in the area of fiscal illusion, whereby voters underestimate the cost of government spending–there is comparatively little causal empirical research on government adherence to voter preferences. Another prominent critique of decentralization is that local governments will not be efficient providers of welfare or poverty assistance programs due to inter-jurisdictional competition: local governments compete for mobile actors who will only support taxes for services from which they directly benefit, and hence higher levels of government are better suited for the provision of social insurance programs. These competing concerns regarding the trustworthiness of local governments to support efficient and equitable societies are important determinants in a longstanding debate over the appropriate degree and scope of governmental decentralization.

Local governments participate in the healthcare system as both patient-care providers and third-party payers. This paper provides evidence of local government adherence to voter preferences by treating state expansion of Medicaid under the 2010 Affordable Care Act (ACA) as an exogenous relative price shock for public provision of health services. Specifically, by providing reimbursement to a previously uninsured pool of patients, the ACA allows local governments to reduce their financial role in supporting local hospitals and spend more on other public services or reduce tax burdens. Alternatively, the ACA represents an opportunity to expand local hospital provision given a new source of reimbursement for community healthcare activities that may not have been financially feasible prior to expansion.[1]

The value of the ACA as an identification strategy for investigating local government responses to incentives lies in its contentious political and legal history. In 2012, the

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[1]Journalistic coverage and ACA advocates have emphasized that when states opt into Medicaid expansion, they present a valuable opportunity for fiscal relief to local governments already providing support for hospital and health services (e.g. see Ollove (2015)).

U.S. Supreme Court ruled the Medicaid expansion provision of the ACA to be voluntary for individual states. To date, 31 states have elected to expand Medicaid. Other provisions of the ACA, such as the creation of an individual health insurance marketplace and extensions of employer-sponsored health insurance to young adults, were applied nationally. Subsequent state-level decisions to expand Medicaid under the ACA represent an arguably exogenous shock at the local government level. This expansion reduces the share of uninsured patients within local markets. We find that in 2013, county-level estimates of uninsurance among those meeting the Medicaid expansion provision's income criteria ranged from nine to 65% of the population.[2] Moreover, the federal government covers the cost in the initial years of the expansion: thus local governments acting to capitalize on this opportunity do not impose heavy costs on state budgets.

From the perspective of a voter with preferences regarding local public goods and services, the Medicaid expansion provision of the ACA resembles a matching categorical aid grant to local governments in that it offers reimbursements for previously uncompensated hospital care services.[3] A median voter whose preferences include delivering services to poor community residents might encourage an expansion of these services as they become further subsidized through Medicaid. On the other hand, if their voter demand for public sector altruism is already satiated near current levels, then local governments may take this opportunity to retreat from their role of underwriting hospital provision, spend on other public goods, or reduce taxes to increase private consumption. How these different possible financial reactions actually net out is an empirical question addressed by this paper. Assessing the effect of state Medicaid expansion on relevant local government fiscal variables enables us to study the elasticity of local government support for hospitals to alternative sources of payment.

To test our central question of whether local governments behave in ways that are consistent with voter preferences, we split our sample based on whether the encompassing county voted for Barack Obama or Mitt Romney in the 2012 presidential election as a proxy for local voter preferences for the ACA and, more generally, for public intervention in the financing of healthcare. We believe this proxy to accurately reflect voter preferences for local government response to ACA incentives because healthcare reform was the most divisive issue of the election.[4] The inference assumption is that the propensity toward

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[2]Authors' own analysis of the Small Area Health Insurance Estimates based on Census data.

[3]Prior to the ACA, hospitals reporting uncompensated charity care were partially compensated by lump-sum payments under the federal Disproportionate Share Hospital (DSH) program. These payments are highly concentrated; large, urban hospitals received over 90% of total DSH payments. Previous studies have also noted uneven distribution of these payments across regions (Fagnani and Tolbert, 1999).

[4]Further support for this inference can be found in a study by Hollingsworth et al. (2018) demonstrating that gains in health insurance predicted gains in Democratic vote share in the 2008 to 2016 elections.

greater fiscal engagement with hospitals would be greater in Obama-voting areas than in Romney-voting areas. Regardless of whether a state expanded Medicaid, in 2012 there was wide variation in the presidential preferences of individual local populations (see Figure 1).

We examine local government behavior in areas that had high uninsurance prior to 2014, as these are the areas that stood to financially gain the most from Medicaid expansion, compared to areas with low baseline rates of uninsurance. Using data from the U.S. Census of Governments for the years 2006-2015, we examine governments' fiscal decisions, paying special attention to hospital-related expenditures and to revenue raised from property taxes. We find that on average, there was no response to ACA state expansion in terms of local hospital spending decisions: states that expanded and states that didn't expand see similar changes post 2013. However, when we split our sample by 2012 presidential preference, we find notable opposing effects: local governments in Obama-supporting areas increased their spending on local hospital services, whereas those in Romney-leaning areas reduced their spending and lowered property taxes. This pattern holds consistently across local governments with urban and rural designations. We also confirm are findings are robust to controlling for other significant differences in demographic composition.

Local governments primarily support public hospitals in their area. Increased local government spending after the ACA could reflect an effort to support public hospitals subjected to "cream skimming" if now-profitable patients relocate to nonpublic hospitals. In order to rule out competing explanations for the results we observe, we supplement our study with an analysis of financial data for hospitals receiving government support, as well as for other competing hospitals in the area. Examining hospital financial records to rule out this alternative explanation, we find that low profits for public hospitals following expansion does not account for our observed result. Indeed, we find that public hospitals experienced profit *increases*.

This paper most directly contributes to the literature on the quality of local democratic governance. However, almost all political economy research in this space assumes a decisive-voter model and infers deviations from that model as evidence of government failure. In particular, the literature on fiscal illusion typically begins with the presumption that local governments behave according to the preferences of the median voter and then identifies patterns that are inconsistent with that model. For instance, Hines and Thaler (1995) point out that states and localities typically increase spending on services in response to federal lump-sum grants by the full amount of the grant, when in theory this increase should be limited to the amount predicted by income elasticity alone. Setting aside specification errors, they argue that the remaining explanations are voter confusion

3

or self-interested government bureaucrats (p. 222). Studies typically follow in this mold, testing hypotheses of fiscal illusion to mixed results while relying upon the underlying assumptions of a median-voter-driven local government.[5] Similar to this literature, our paper assumes a decisive-voter model but infers responses to the ACA's incentives by presidential preference as evidence of government responsiveness to constituent preferences.

The literature on decentralization and government responsiveness also intersects with our work. In recent decades, the study of fiscal federalism and the appropriate degree of devolution has been particularly motivated by widespread governmental structure reforms throughout Latin America, many parts of Asia and Africa, and in the regions of the former Soviet Union. The rise of the European Union has further spurred the debate. In this context, proponents of decentralization and devolution argue that local governments will be more responsive than state or federal governments, by virtue of their ability to customize spending decisions to local needs, preferences, and values (Wallis and Oates, 1988). The critical literature, particularly where equity-based services are paramount, has articulated the case for centralization on the basis of expertise and capability at higher levels of government, as well as a greater robustness to the corruption and organized interests that might be experienced among relatively resource-poor local governments (Crook and Sverrisson, 1999).

While the decentralization literature is massive, most of it investigates various observable differences in economic indicators as decentralization occurs. This literature looks for the effect of decentralization on any number of topics that include economic growth (Oates, 1993; Zhang and Zou, 1998), total government spending (Fiva, 2006), and public service quality (de Janvry et al., 2012; Galasso and Ravallion, 2005). Few studies, however, demonstrate whether such differences are a consequence of adhering to local voter preferences. Investigations of voter responsiveness have tended to be case studies of decentralization, particularly in countries that have experienced recent structural shifts, making generalizations quite difficult (Robinson, 2007; von Braun and Grote, 2000).[6] Faguet (2004) is an exception and the most similar of the decentralization literature to this paper. Faguet studied the case of substantial structural decentralization in Bolivia following a major national reform in 1994. A unique database of objective indicators based on local "needs" was linked to measures of public investment. The study finds that in these areas of need, public investment increased with decentralization; this finding is consistent with the view that local governments are better than central governments at

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[5]Further examples of this approach include fiscal illusion tests of the revenue elasticity hypotheses (Ross and Yan, 2013), renter effects (Banzhaf and Oates, 2013), and debt illusion (McEachern, 1978).

[6]For an extensive overview of these studies, see the special issue of *World Development* introduced by Faguet (2014).

targeting public investment. While there is perhaps some argument that decentralization responds to voters' own subjectively determined priorities rather than a central authority's objective determination of local needs, this study nevertheless provides compelling evidence of local governments' institutional capabilities beyond rejecting evidence of fiscal illusion or failed decentralization.

Our study represents a new contribution to the literature because it examines local government responsiveness to changes in institutional setting (the exogenous incentive under Medicaid expansion), whereas prior work has examined cases in which government functions and purposes were realigned. That is, we study a moment when, due to a changing environment, local governments were presented with an opportunity in which they could respond in accordance with local voter preferences.[7] Such a setting should carry greater external validity than the settings of previous case studies, since shifting vertical assignment functions within federalist systems are a less common occurrence than the many presumed environmental changes citizens expect their government to respond to while representing their interests.

Finally, in addition to contributing to our understanding of representative democracy, the course of this research contributes to a generally understudied stakeholder in the public health service economy (local governments), making it policy-relevant research. In the aggregate, local governments represent the majority contributor to public hospitals and to health-related services as measured by expenditures, as they have outspent state governments by about $3-to-$2 on hospitals (see Figure 2) and matched state spending on public health service expenditures.[8] While total spending is driven by a relatively small number of local governments (802 of 89,004), these entities serve one third of the American population. Furthermore, hospitals represent a significant consumer of government inputs, with one tenth of non-education-related local government employees working in hospitals (see Figure 3). Despite this high level of fiscal involvement, almost no attention has been given to the public economics of healthcare delivery at the local government level.

To this end, this paper also contributes to the literature on the financing of hospitals and charity care. Medicaid expansion following the ACA significantly reduced hospital financial losses related to the provision of charity care (Dranove et al., 2016), which suggests financial improvement on the part of hospitals in expansion states. However, previous policies similarly intended to alleviate charity care costs costs (such as California

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[7]While it is certainly the case that work on topics like categorical aid grants to local governments often relies on decisive voter models for theoretical predicted impacts, such papers typically measure general elasticities, given the theoretical ambiguity of government responses; we are aware of no such studies that attempt to empirically establish evidence that these responses are actually in line with voter preferences.

[8]Authors' analysis of FY 2013-2015 data from the Census of State and Local Governments.

enhancement of DSH policy) may have left publicly supported hospitals worse off due to cream-skimming behaviors from private competitors (Duggan, 2002). As mentioned in our preview of results, this is treated as a competing hypothesis to our own about voter preference, and in exploring it this paper contributes an empirical assessment of how publicly supported hospitals were affected by the ACA and state Medicaid expansion. This potential for cream skimming is highly policy-relevant due to the already anticipated $44 billion cut in federal support for hospital charity scheduled to take effect by 2025 (Ellison, 2017; Aizer et al., 2005). As mentioned in our preview of results, this type of compensatory behavior by local governments could also lead to the results we observe in our paper. We thus include an additional analysis of hospitals profits, which separately contributes an empirical assessment of how publicly supported hospitals were affected by the ACA and state Medicaid expansion.

2   Background: The Affordable Care Act and Related Research

Medicaid is a federal and state partnership with shared authority and financing. The central purpose of Medicaid is to provide health insurance to low-income, medically needy individuals (Cohen et al., 2015). Traditionally, the program has concentrated on low-income children, pregnant women, the elderly, and individuals with disabilities. All states must meet federal minimum requirements, but they have options for expanding Medicaid beyond the minimum federal guidelines. States, at their discretion, have extended coverage to parents of children in low-income homes and to childless low-income adults (Kaiser FF).

The Medicaid expansion provision of the ACA fills coverage gaps among low-income households by creating a minimum Medicaid income eligibility level (income up to 138% of the federal poverty line) across the country. That minimum level took effect as of January 1, 2014 and represented the largest expansion of the program since its inception (Cohen et al., 2015). To encourage adoption of the threshold, the federal government offered to reimburse state governments for costs associated with the eligibility expansion. This enhanced rate was 100% in 2014 and is scheduled to decrease at regular intervals to a minimum federal reimbursement rate of 90% by 2020; the regular match rate continues for other eligibility avenues. Thus far, 31 states and the District of Columbia have expanded Medicaid in response to these new incentives. However, the actual effect within and across states is expected to vary because of differences in pre-expansion levels of uninsurance among low-income adults. For states without prior adult Medicaid coverage, like New

Mexico, this provision was predicted to increase enrollment by 30%. For other states, like Connecticut, the anticipated effect was small because the pre-ACA income eligibility requirements of the state already exceeded the ACA's threshold. Within states, wide variation exists in initial uninsurance rates as well.

The ACA explicitly offered fiscal relief to state governments through a number of mechanisms, but importantly for identification in our study, no similar provisions were available to local governments.[9] Further, projections of the ACA's net impact on non-federal finances have focused on states (Bachrach et al., 2015; Dorn et al., 2015). State-specific reports indicate encouraging financial results from the ACA Medicaid expansion decisions (Antonisse et al., 2016). Several states reported savings in non-health budget items like criminal justice (Smith et al., 2015). Sommers and Gruber (2017) find that the national increase in spending associated with Medicaid expansion was funded by the federal government (12.2 percent increase), with no significant increases in state spending. Despite the relatively small net change in state spending at the national level, there has been considerable heterogeneity across states: while states allocated an additional $846 million in 2017 to their Medicaid programs overall, 19 states implemented mid-year budget cuts (NASBO, 2017). States represent the level at which Medicaid operates, but local governments represent the level that engages in healthcare delivery: they are healthcare providers (owning hospitals), or else substantially supporting such providers financially. Thus to judge government response to expanded insurance in relation to voter preferences, we turn to the local government level. This is the first study, to our knowledge, to consider the effect of the ACA and the Medicaid expansion on local government finances.

There are plausible indirect channels through which both state and local governments stand to benefit from the ACA. For instance, to the extent that expanded coverage reduces non-emergency use of emergency department services by diverting that care to an ambulatory setting, the volume of charity care provided by hospitals should decline. Previous studies suggest that a reduction in non-emergent use of ER services could affect volume by nearly one third (DeLia, 2006). General population health improvements may similarly affect finances; indeed, a study by Freudenberg et al. (2006) shows that reductions in municipal government support of hospitals ultimately translated into a five-times-the-cut increase in spending due to worsened rates of tuberculosis, human immunodeficiency virus (HIV) infection, and homicide. Further, Medicaid services, such as mental and behavioral health programs, are funded by state and local funds. The expansion reduces the state's pre-ACA share of the cost from their federal match rate of at least 45% to 0% under the enhanced federal funding rate (increasing to 10% in

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[9]For example, state governments were expected to gain revenue as insurers and healthcare providers gained revenue from increased demand (Bachrach et al., 2015).

2020) (Rudowitz, 2014). Following Medicaid expansion, these services are reimbursed at the enhanced match rate with federal dollars, rather than state and local funds. A recent working paper by Duggan et al. (2017) found that California Medicaid expansion crowds out local government-funded coverage and results in high hospital revenue among hospitals that serve a high proportion of uninsured patients.

3 Conceptual Framework and Empirical Strategy

3.1 Medicaid Expansion and Voter Demand for Local Public Hospital Services

Local governments are substantive actors in the healthcare system through their support of community hospitals (see Figures 2 and 3), so we motivate our conceptual framework to be one in which local governments' constituent voters derive some utility from the provision of some set of low-income hospital services (h), as well as from private and other non-hospital public services (z). The cost per unit of providing services h is P, but voter preferences for a particular level of local government provision will be based on some fraction of P defined as $s \in (0, 1)$. The fraction s can be regarded as the share of P not recovered through patient charges or insurance reimbursements. We assume some agreement between the government representative serving as the voters' agent and representatives of the hospital as they establish some h^* as their provision level. Taxes on the voter must therefore cover the local government's share of the expenditures on delivery. Likewise, observed expenditures by the government will be sPh^*.

If the local government resides within a state that opted to expand Medicaid to all low-income adults under the ACA, then care providers of the newly covered patients can now bill Medicaid and seek reimbursement; this includes health providers with whom they had negotiated sPh^* in the pre-expansion period. This represents an effective price reduction to providing service h. If we define $\gamma \in (0, 1)$ to be the share of P remaining after Medicaid reimbursement, then the local government agent negotiates the delivery of services on the effective price of $s\gamma P$ for each unit of h. The new negotiated service provision level in the post-period is defined as h^{**}, which consequently results in local government expenditures of $s\gamma Ph^{**}$ that must be supported by local taxpayer revenue.

The magnitude of change from h^* to h^{**} results from income and relative price substitution effects of the usual Slutsky decomposition. The negotiated service level will not increase at all (i.e. $h^* = h^{**}$) if the voter demand price and income elasticities are zero at current margins, so consequently local public expenditures on h will fall by $(1 - \gamma)sPh^*$. Agents negotiating for voters with positive income and/or non-zero price

8

elasticities should negotiate $h^{**} > h^*$. Defining the change in provision as Δh, the *observed* change in spending from the pre-period will become $sPh^*(\gamma(\Delta h/h^*) - 1)$ and is ambiguous in sign.[10] If the Marshallian price elasticity exceeds one, then the reduction in price induced by γ will increase local spending on h.

Observing a change in spending on h as a result of the ACA is, by itself, not indicative of whether local government agents are representing their constituents' interests. If spending on hospital services increases, for example, it could mean that hospitals or local organized medical interest groups have been able to leverage the opportunity into additional subsidies by lobbying local governments. While the framework demonstrates that state Medicaid expansion will have ambiguous effects on local government expenditures on health services, it also implies that, *ceteris paribus*, observed change in h should be more positive for a local government representing a voter with a high preference (i.e., high income or price elasticity) than it would for a local government representing a voter with a low preference; this offers a potential testable prediction.

We do not directly observe voter preferences for h, but we argue that preference levels are signaled through voting data for the 2012 presidential election. Elections, and particularly the 2012 presidential election, presumably signal to the researcher voter preferences that local government officials already know. In the 2012 election, survey respondents ranked healthcare and public insurance as second in importance only to the state of the economy (Blendon et al., 2012).[11] The candidates themselves had distinct brands of healthcare reform: "Obamacare" and "Romneycare," which while actuarially similar in value, were characterized as favoring government intervention and market-based intervention, respectively.

Therefore, the ACA offers a quasi-experimental design opportunity: states make initial decisions about whether to expand Medicaid to all low-income adults, and then health care providers bill and seek reimbursement from Medicaid. This decision represents a price reduction in the provision of healthcare to local governments in Medicaid expansion states, which can be used by the local government to increase hospital-related spending, increase the provision or quality of other non-health services, or transfer funds back to the median voter via lower taxes. The key assumption for our inference on the representativeness of local governments is that local governments with constituents who voted for Obama will have higher income elasticity and price elasticity for local public hospital services than those whose constituents voted for Romney in 2012.

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[10]The term "observed" here is not meant to be implied in the empirical counterfactual sense, but in the perfectly identified sense where s, P, γ, and h are all unobservable to the researcher, as only spending outcomes are observable.

[11]By contrast, Americans did not list healthcare and public insurance as a top-five concern in the 2008 election (Blendon et al., 2012).

Section 3.2 provides more detail on the empirical model specifications and the fiscal outcomes we monitored in order to draw inferences for the research question.

3.2 Empirical Approach

To assess local governments' responses to the ACA, and in particular to the Medicaid expansion, we estimate a difference-in-differences-in-differences model using local government-year observations. This model leverages three sources of variation: pre/post differences defined as before/after the standard start date of the expansion ($Post2013$), differences in Medicaid expansion and non-expansion states ($Expansion_s$), and differences in pre-expansion uninsurance rates at the county level ($Unins2013_l$). This last dimension is the potential intensity of treatment, as it captures the degree to which the population at hand was impacted by the expansion of Medicaid, following previous literature (e.g. Courtemanche et al. (2017), Miller (2012)). The effect of the ACA on local governments in non-expansion states is presented by β_1, as the ACA could have impacted market conditions even in non-expansion states. The effect of the Medicaid expansion in expansion states is presented by β_2. Thus the full effect of the ACA in expansion states is $\beta_1 + \beta_2$. However, because this paper asks whether local governments responded to the price change incentives created by state Medicaid expansion, the effect of interest is β_2. Both terms will be systematically reported for those interested in the full effect, but our identification claims and discussion will be restricted to β_2.

$$
\begin{aligned}
Y_{lst} = {} & \alpha + \beta_1 Post2013 \times Unins2013_l \\
& + \beta_2 Post2013 \times Expansion_s \times Uninsur2013_l \\
& + X_{lt}\beta_3 + \theta_l + \theta_t + \theta_{st} + \epsilon_{lst}
\end{aligned}
\tag{1}
$$

Outcome Y_{lst} refers to financial indicators of local government l in state s at time t. Outcomes of interest are (1) total hospital expenditures, (2) expenditures on hospital construction, (3) hospital charges received by the local government, and (4) property tax revenues. Total hospital expenditures is the fiscal outcome directly motivated by the conceptual model in section 3. Hospital construction is a subset of total hospital expenditures and might provide insight as to whether local governments changed their propensities to invest in hospital systems as a result of Medicaid expansion. Property taxes represent a sacrifice of private sector spending from the local constituency. Most American local governments rely on the property tax because it is a stable source of revenue. Local governments can declare in the budget process an amount to collect in property tax revenues from their stock of taxable property wealth, as opposed to other revenue instruments

10

where a rate is set and the base fluctuations are forecast for anticipated revenues (Mikesell and Liu, 2013). The consequence of this approach is that, at the margin, the last dollar of public budget expenditures is implicitly determined by property tax revenues (Ross et al., 2015).[12] Finally, anticipated reimbursements from Medicaid for hospital care charges are a source of revenue that can be used as government income, particularly for care provided by public hospitals that are dependent on local governments. Even when hospitals are privately-run, governments may fund and subsequently share in the hospital charges that are successfully collected for a subset of services. Consequently, Medicaid expansion could increase revenue to local governments as more charges are paid. Alternatively, observe revenues from this source could decrease if governments and hospitals no longer undertake such agreements because local governments expect hospitals to better finance themselves from Medicaid reimbursements alone.

One challenge to our approach is the potential for omitted variable bias. Local governments may differ in their spending patterns due to differences in baseline population or heterogeneity in local economic conditions. We control for this possibility in the vector X_{lt}: median income at the county level; population demographics: age, sex, and race; and hospital market characteristics, such as market concentration by hospital bed size and the number of private hospitals operating within the same hospital referral region as the public hospital. Further, given the richness of the data, we include local government unit fixed effects (θ_l) to account for time-invariant differences among units, like council structure or use of a professional city manager. To control for national changes in the demand and supply of hospital services, the specification also includes year-fixed effects (θ_t), which control for changes in patient mix from provisions in the ACA that apply to all states, such as the individual health mandate. These two-way fixed effects present a basic difference-in-differences framework to estimate the effect of Medicaid expansion on local government outlays. We also include state-by-year interaction dummies to account for differences across states over time (θ_{st}). These trends account for differences in trajectory related to other aspects of Medicaid program design, the federal match rate that subsidizes state costs, or population health. In particular, they subsume variation typically controlled for by a $Post2013 \times Expansion_s$ indicator.

The estimation of equation (1) is not easily interpretable because it requires a selected level of $Unins2013_l$ in order to report magnitude and statistical significance levels. For presenting our main results, $Unins2013_s$ will be replaced with an indicator variable that equals 1 if the local government is in a county that fell into the highest quartile of the national uninsured distribution. This specification is provided in equation (2) and will

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[12]This is a bit of an oversimplification, since a variety of state rules exist to regulate local government property taxation; it is accurate enough, however, that we can infer a general picture of local government behavior in response to Medicaid expansion.

appear in the main body of the paper, while estimates of equation (1) will be provided in the appendix.

$$
\begin{aligned}
Y_{lst} \;=\;\; & \alpha + \beta_1 Post2013 \times Unins2013Qt4_l \\
& + \beta_2 Post2013 \times Expansion_s \times Uninsur2013Qt4_l \qquad\qquad (2)\\
& + X_{lt}\beta_3 + \theta_l + \theta_t + \theta_{st} + \epsilon_{lst}
\end{aligned}
$$

Finally, as described in the conceptual framework, estimates on β_2 (the full sample of governments) do not necessarily indicate that local governments are acting according to their constituents' preference. Our main inference will come from splitting the sample based on whether the county voted for Obama or Romney in the 2012 election, so we will report β_2^k, where k is an indicator for Romney or Obama samples.[13]

A fundamental assumption of this approach is that trends among treatment groups are parallel in the pre-period. Visual inspection of these outcomes in the difference-in-differences setting (Figure 4) indicates that the assumption holds for our four outcome variables. We formally test this assumption via an event-study regression. Restricting the sample to data from 2006 to 2013, we drop the post-period from the specification and test for pre-trends by interacting individual years from the pre-treatment period instead of $POST$ to provide comparable estimates of β_1 and β_2. The results for each fiscal outcome and eventual subsample explored in the paper are provided in the Appendix, Tables A1 to A4. Overall, the pre-trend assumption seems reasonably satisfied. Looking at total hospital expenditures in Appendix Table A1, the pre-trend year interactions with $Unisur2013 \times Expansion$ are not significant in the Obama or Romney county samples. Among the subsamples, only rural Romney voting areas demonstrate problematic pre-trend significance levels. Nevertheless, the overall samples for the main results (Obama and Romney) look promising for the pre-trend assumptions, and this pattern is repeated throughout the other dependent variables shared in Appendix Tables A2 through A4.

3.3 Data

Measures of local government fiscal indicators are collected from the Census's Annual Survey of State & Local Government Finances. For the purposes of the study, we focus on local general-purpose governments that constitute counties and municipalities providing

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[13]About one fourth of our general-purpose local governments are cities, rather than counties, which introduces some concern of errantly binning cities according to the wrong presidential preference if the non-city portion of counties (or city portions outside the home county) are sizable enough with opposing magnitudes. However, we have no reason to believe the difference is or would be systematic for one presidential side.

general government services. This focus leads us to exclude specialized districts such as those for schools, fire services, waste treatment, etc. Further, we limit the sample to general-purpose local governments that had hospital expenditures in the pre-period and were observed in the survey at least twice. The Census surveys large governments annually and a sample of smaller local governments are sampled at random throughout the period. The result is an unbalanced panel of 802 local governments observed over the 2006-to-2015 period.

As measured by population, these governments represent relatively large units. The average population size for the local governments appearing in our 2006 sample was 200,301, collectively representing about 98 million Americans. Consequently, these local governments are sampled more frequently in the annual Census of Government Finances, with 45 percent appearing in every year of the data, and just 7 percent appear only twice. With a mean hospital spending level of $8.4 million in 2006, the corresponding per capita mean was $42. Table 1 offers a sense of the governments represented, listing the 30 largest local governments by total hospital spending as well as the Obama share of the 2012 election votes. For these governments expenditures on hospitals represent a large share of their total expenditures, averaging 35% in 2012 (Figure 5). Most (76 percent) of the governments are county rather than municipality; there are no examples of city and county overlap among the 802 general-purpose local governments that meet these sample criteria (e.g. Hamilton and Cuyahoga County appear in the sample, but Cincinnati and Cleveland do not).

The four outcomes described in Section 3.2 are extracted from the Annual Survey to assess local government responses to voter preferences: (1) total hospital expenditures made by local governments, regardless of hospital ownership status; (2) expenditures on hospital construction; (3) hospital charge revenue received by the local government; and (4) property tax revenue. Presenting the results based on within-variation in the levels means that results across dependent variables are directly comparable if governments substitute across each other, e.g. a $1 reduction in hospital expenditures and a $1 reduction in property tax revenues would imply the government passed the reduced expenditures onto households via a tax cut. Furthermore, the levels of expenditures and property tax revenues correspond directly to the financial concept that is altered through the local government budgeting process. However, since the levels can be more sensitive to outlier level responses, we demonstrate in the Appendix that the inferences are not driven by this phenomena by applying the log transformation to these variables.

The measure of pre-Medicaid expansion uninsurance rates at the county level is extracted from the Census Bureau's Small Area Health Insurance Estimates data. We include the estimated uninsurance rate among adults 19-64 who reported income less

than 200% of the federal poverty line in 2013. We also use the Census Bureau's Small Area Income and Poverty Estimates program, which produces single-year estimates of income and poverty for all U.S. states and counties.

We limit the sample by excluding states that expanded Medicaid after early 2014: Alaska, Indiana, Pennsylvania, Montana, and Louisiana. These states adopted later, either in 2014 or in 2015; therefore, their post-period is brief. As a sensitivity check, we confirm that the main results are not altered when we exclude states that implemented some level of Medicaid expansion prior to January 1, 2014 (Appendix Table A14). Table 2 provides corresponding summary statistics to reference sizes for the regression results.

4 Effect of Medicaid Expansion on Local Government Expenditures and Revenue

4.1 Main Results

Table 3 presents the estimated treatment effect of Medicaid expansion on local government finances for the specifications in equation (2) for the following outcomes: local government total expenditures on hospitals, local government expenditures on hospital construction, local government revenues from hospital charges, and property tax revenue. The regressions include local government and state-year time trends. Robust standard errors are reported in parentheses. The causal variable of interest is $Post \times Qt4Unins2013 \times Expansion$, but as described in section (3.2) the sum of the two coefficients provides an overall estimated effect of the Medicaid expansion provision due to potential impacts experienced in non-expansion states.

The first column of results in Table 3 provides the estimation of equation (2) before sample splitting. Broadly, the results are not statistically significant and quite small when compared to the dependent variables' respective means and standard deviations. The exception is that spending on hospital construction declines by a margin that is significant at the 0.05 level and a magnitude that is about 20% of the pre-period standard deviation of the expansion states. Aside from this finding, no clear effects or patterns emerge from the first column.

The second and third columns of Table 3 split the sample based on whether the encompassing county voted for Obama or Romney in the 2012 elections, as these are the main specifications for inference. In three of the four cases, signs on the variable of interest take opposing directions. For total health expenditures, the Obama-voting governments in Medicaid expansion states increased total expenditures on hospitals by about $32.7 million, which is about 30% of the standard deviation in the pre-treatment

period and is statistically significant at the 0.01 level. Romney areas, by contrast, reduced spending on hospitals by a \$4.9 million margin that is statistically significant at the 0.10 level. Both specifications for local government expenditures on hospital construction were negative and statistically insignificant, implying that total expenditures were driven by non-capital expenditures.

On the revenue side, Obama-voting local governments in expansion states reported more revenue from hospital charges while Romney governments reported less, but neither case was statistically significant or economically meaningful in value. Revenue from property taxes decreased by economically small magnitudes that were statistically insignificant in both cases, albeit the magnitude of the decrease was greater in Romney-voting than Obama-voting areas.

A possible counter explanation is that the results in Table 3 are simply picking up differences between populations that reside in these areas: education, income, racial composition. Time-varying controls in the main specification control for most of these possibilities.[14] As a sensitivity check, consider the possibility that results are driven by an urban-rural divide in response to the ACA, as hospitals in these types of areas are likely to be very different types of entities. If there is a correlation between party voting across these geographic types within this sample (such as if urban areas are likely to contain more Democratic voters), then the results could be described as an urban-rural phenomenon characterized incorrectly as a political dichotomy.

To consider this, we split the sample again for relevant distinctions; these results are also reported in Table 3. Splitting the full sample on urban or rural designations does not immediately reproduce the Obama-Romney results, though it does demonstrate differences between the two. While statistical significance is only occasionally present, hospital expenditures increase in both urban and rural areas, as do revenues from hospital charges and property in rural areas. Though it does not seem to be the case that the choice of Obama or Romney is simply a proxy for urban and rural designations, the differences in the specifications suggest that further investigation is warranted.

Splitting further the Obama and Romney sub-samples by urban and rural designations, we see in Table 3 that the original Obama versus Romney results remain directionally intact. That is, if we compare urban areas that voted for Obama to urban areas that went for Romney, then we see the same pattern emerge as in the full Obama and Romney samples. Urban Obama areas spent more on hospitals, but hospital charges and property taxes did not significantly change. In urban Romney areas, spending on hospitals declined by a larger magnitude and at a higher significance level than in the

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[14]Table A7 shows that these areas significantly differed along other demographics, besides rurality prior to the expansion. We present the robustness of our results to controlling for those differences (Table A8).

broader Romney results. Similarly, there was a larger decline in revenue from hospital charges for urban Romney areas than in the broader Romney results, but the effect remained statistically insignificant. However, it seems that this reduction in obligations from hospital services resulted in property tax savings for urban Romney areas, as a $1.5 million decrease in property tax revenues was significant at the 0.05 level. The urban Romney results suggest that about 17 percent of the reduced hospital expenditures were channeled into private consumption via lower property tax burdens.

In rural Obama areas, which represented a relatively small sample of local governments, the direction of the effects was the same as in the full Obama sample but without statistical significance for property taxes, total hospital expenditures, or expenditures on hospital construction. Rural Obama local governments did, however, report receiving larger revenues from hospital charges, consistent with receiving greater levels of reimbursements from patient services for local governments connected to hospitals. By contrast, rural Romney results were directionally different than the general Romney results under all outcomes, albeit the only statistically significant effect was for the $612 thousand increase in property taxes. In this particular subcase, the result may be due to previously discussed problematic pre-trends.

Another possibility is that other intergovernmental transfers for health and hospital services from the state or federal government are systematically changing on the expectation of improved financial conditions, thus biasing the results. In this scenario, state or federal institutions recognize that local governments in expansion states should be treated differently, and so they adjust intergovernmental grants in some manner that correlates with presidential voting and drives these results. We test this possibility by considering intergovernmental transfers for health and hospital services as outcomes in Table 4; the corresponding pre-trend analysis appears in Appendix Tables A5 and A6. Generally, the results offer no statistically significant evidence that transfers from the state to the local government or from the federal to the local government differed over time or between Medicaid expansion states in the sample. The only exception appears to be an increase in federal grants to urban Romney local governments, which is statistically significant at the ten percent level. The magnitude of the effect is quite small at $687 thousand, however, far short of the $12.3 million decrease in governments' own spending on local hospitals or the $1.5 million decrease in property taxes found in Table 3.

The pattern of results revealed in Table 3 demonstrates that, in general, local governments in counties that voted for Obama and Romney responded differently to state Medicaid expansion, particularly in urban areas. Obama-voting communities saw increased hospital expenditures among their local governments, while Romney communities saw decreases. In Romney-urban areas, some of these reduced expenditures on hospitals

16

translate into property tax reductions. Rural areas provide less clear evidence when using the Obama-Romney dichotomy.

4.2   Robustness Checks

In the time trend of Figure 4, there is a visible tick upward in many of the indicators, which could be evidence of some anticipatory responses on the part of local governments during the year between the Supreme Court ruling of 2012 and the 2014 implementation of the ACA's incentives for Medicaid expansion. If so, then our post-period treatment effect will be biased towards zero as the behavior becomes prevalent during the pre-treatment period. Appendix Table A9 presents results that exclude 2013 from the analysis, but this proves to have virtually no effect on the analysis, as the results are extremely similar to the main results of Table 3.

The main results also employ a dummy variable to indicate if the local government was part of a community that was in the state's top quartile of low-income uninsured people for 2013, which could potentially mask a non-linear effect. Table A10 exchanges this definition with a continuous measure of the size of the uninsured population. While comparing magnitudes and obtaining statistical significance at selected levels require computation with chosen uninsured rates, one can see from Appendix Table A10 that the directions are consistent with the main results of Table 3. This remains true if we also exclude 2013 from the analysis (Appendix Table A11).

It is possible that using the 2013 uninsured rate overestimates the return to Medicaid expansion. After the passage of the ACA, the Medicaid expansion provision was well publicized, as state governments challenged the federal mandate. While there was some uncertainty about which states would expand Medicaid following the 2012 Supreme Court decision, it is possible that our results are biased by an Ashenfelter dip whereby individuals dropped private coverage in anticipation of becoming Medicaid-eligible. Such anticipatory actions would bias measurement of treatment effects. To address this possibly, we re-estimate the results using a pooled measure of uninsurance from 2011 to 2013. These results are consistent in magnitude and direction with the main analysis (Table A12).

Appendix Table A13 employs the logged transformations on the fiscal outcomes and estimates the main specifications once again. Statistical significance is sensitive to the transformation, but the overall pattern of results looks similar to how the Obama and Romney responses to expansion differ. While neither differs from zero, the elasticity on Obama and Romney for total health expenditures is 0.59 and -0.53, respectively. The reduction in property taxes is now statistically significant at the 0.01 level in Romney areas and the 0.001 level in urban Romney areas. The biggest departure from the main

17

results is that total hospital construction expenditures experience a statistically significant increase among local governments whose constituents voted for Obama, unlike the insignificant and negative results of the main results; this is undoubtedly a consequence of the within-government annual volatility characteristic of these capital expenditures. Broadly, the results still signal a greater propensity to spend in Obama areas, while Romney areas were more likely to cut spending and taxes.

Finally, six states undertook some early expansion of Medicaid in 2014.[15] Appendix Table A14 drops local governments in these states from the analysis and reports the results. For local governments whose constituents voted for Obama, the statistical significance is lower for hospital expenditures at the 0.05 level than in Table 3, but is otherwise similar. In Romney areas, the point estimates are similar, but now none of the results are significant, including total health expenditures. In Romney-urban areas, however, property tax reductions remain statistically significant.

5 Hospital Financial Conditions

It appears that the best explanation for the previous results is that local governments reacted to state Medicaid expansion in ways that are likely to be consistent with the preferences of their voters. Reducing the cost of supporting local hospitals caused Obama-voting counties to invest further in hospital service delivery, while Romney-voting counties used the ACA subsidy as a crowd-out of local efforts and passed the savings to their voters in the form of lower taxes.

In the following section we analyze hospital financial conditions to consider whether changes in the market conditions of local hospitals, rather than local voter preferences, drove post-expansion changes in local government spending. If changes in the market conditions of local hospitals also drove voting patterns, then this would overstate the relative effect of voter preferences. For the Obama results, an alternative explanation is that public hospitals represent an inferior good among those who were induced into obtaining private insurance because of the ACA, and as a result the local governments were helping these hospitals maintain services as they lost their more profitable patients ("cream skimming"). In the Romney results, if crowd-out is the primary factor at work, then it should not be the case that such hospitals were overall made worse off. Rather, they merely substituted funding to obtain similar services at a lower tax cost. These cases could be particularly likely in areas with limited provider access and where a strong component of the community safety net centers on the public funding of local hospitals.

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[15]These states are California, Connecticut, the District of Columbia, Minnesota, New Jersey, and Washington.

Using data from the Medicare Cost Reports, we can test to determine the extent to which these changes were driven by variation in patient profitability, as well as the subsequent effect of these changes on hospital finances.

5.1 Background: Hospitals and Government Compensation for Charity Care

The relationship between hospitals and local governments has traditionally been defined by public (owned by the local government) or private ownership status. However, these distinctions oversimplify the ways in which vulnerable populations access hospital care through private and public co-production. For example, local governments may directly fund extensions to the Medicaid program, which allow beneficiaries to seek care in either public or private hospitals; private hospitals may also receive direct subsidies from local governments if their operations are considered a public priority for the local government. Further, public hospitals bill public and private insurers and are not exclusively open to the publicly insured or uninsured. In this section, we describe hospitals that are likely to be affected by Medicaid expansion in terms of their patient case load and reliance on public funds, rather than ownership status.

In anticipation of lower rates of uninsurance, the ACA also included provisions to reduce federal financial support to hospitals providing uncompensated care to the uninsured ("charity care"). These cuts were intended to maintain budget neutrality and applied to all hospitals, regardless of their state's Medicaid expansion decision.

Hospitals with a 24-hour emergency department (ED) are unique from other health-care providers as the Emergency Medical Treatment and Labor Act (EMTALA) requires them to treat anyone who enters, regardless of the patient's insurance status or ability to pay. EMTALA is an unfunded mandate for hospitals to treat the uninsured as a form of "bad debt" (Lee, 2004; Coughlin et al., 2004). Hospitals also face potential financial losses from the treatment of Medicaid patients: the differences between treatment costs of Medicaid payments and Medicaid reimbursement rates are known as "Medicaid shortfalls" (Dobson et al., 2006). The term "charity care" is the sum of bad debt from uninsured patient care and Medicaid shortfalls.

Hospital charity care is indirectly compensated when hospitals provide a higher share of uncompensated care relative to others in their state. Such hospitals are designated as Disproportionate Share Hospitals (DSH) and, as a result, receive payments from the Centers for Medicaid and Medicare Services (CMS) to cover the costs of providing care to uninsured patients. DSH payments are paid by CMS to states and are capped at 12% of what states spend on their respective Medicaid programs. State governments, in

turn, distribute the payments to hospitals, though they are not required to target DSH payments to hospitals with high levels of uncompensated care.

In a study of hospital finances in California, Neuhausen et al. (2014) find that decreases in uncompensated care costs due to the ACA insurance expansion may be outpaced by losses related to patients who remain uninsured, low Medicaid reimbursement among the newly insured, and medical cost inflation. They estimate that unmet DSH costs will increase by $156 million by 2019, relative to 2010 levels. In a more recent descriptive survey, Hayford et al. (2016) find that one quarter of hospitals reported negative profit margins following Medicaid expansion, though these losses were not large enough to cause hospitals to discontinue operating.

The financial vulnerability of hospitals that receive local government funding has been established in the literature. In a survey about the role of local governments in three cities, Meyer (1999) finds that while sites differed in their financial solvency, none were completely financially secure or solvent. Duggan (2002) exploits a change to California's Medicaid program in 1990 that increased DSH payments. He finds that higher reimbursement for publicly insured patients resulted in a higher share of such patients in private hospitals. Moreover, local governments reduced funding to local hospitals at an equal rate to the hospitals' gains under the changed DSH policy. However, due to cream-skimming behaviors across hospitals, local public hospitals were left worse off because private hospitals treated the least severe, most profitable Medicaid patients. This conclusion implies that decentralized management of safety-net hospitals reduces waste when re-allocating funds from a centralized source. However, less is understood about how well local governments can predict changes in hospital financial dependence on transfers following changes in the patient insurance mix. Further, public hospital vulnerability arises from inelastic supply of unprofitable services (Hansmann et al., 2003) relative to private hospitals, whether for-profit or nonprofit.

5.2 Empirical Approach

Changes in Medicaid eligibility and the funding of that coverage could affect the financial performance and service provision of hospitals that rely on these local government transfers. We test this possibility by extending our analysis to evaluate hospitals in markets within and surrounding the local governments in the sample. This analysis is conducted at the hospital level (i) and includes hospitals that reported receiving state/local funds prior to Medicaid expansion. As in the case above, we can similarly predict changes in

hospital financial measures using the triple-difference specification:

$$
\begin{aligned}
HospFinance_{ist} \;=\; & \alpha + \beta Post_t \times Expansion_s \times Uninsur2013_{ist} \\
& + \theta_{lt} + \theta_l + \theta_t + \epsilon_{lst}
\end{aligned}
\tag{3}
$$

The hospital financial outcomes ($HospFinance_{ist}$) are (1) measures related to patient profitability: operating margins and profit margins; (2) measures of financial exposure: bad debt-to-receivables ratio (i.e., uncompensated care); (3) Medicaid care provision: outpatient visits and inpatient stays; and (4) hospital receipt of public funds (state or local grants or transfers made for hospital operations). This last measure is only available for a briefer time, after 2011, but captures partnerships between local governments and private hospitals, which are not centrally documented. Summary statistics of the universe of 2,440 acute-care hospitals are presented in Table 5.

The coefficient of interest (β) represents the change among hospitals operating in areas that expanded Medicaid and had low insured rates prior to Medicaid expansion among low-income households. $Uninsur2013_{ist}$ is an indicator variable that equals 1 if the local government is in a county that fell into the highest quartile of the uninsured distribution.

Similar to the main analysis, we include local government unit fixed effects (θ_l) to account for time-invariant differences among local governments, such as different degrees of integration between local hospitals and local governments. To control for national changes affecting hospital finances, year-fixed effects(θ_t) are included, which control for changes that apply to all hospitals, such as any changes in Medicare policies. Local government-by-year interaction dummies account for differences across local governments over time (θ_{lt}). These trends account for differences in trajectory related to other aspects of hospital and local government situations, such as differences in safety net structures and population health.

5.3 Data

The data in the hospital-level analysis uses the Medicare Cost Reports (MCRs) to observe changes in hospital finances, the provision of care to publicly insured patients, and hospital size. The location of each hospital was verified using the Provider of Service files and Google API. Details of the MCRs are provided in Appendix. 3; this section will discuss sample selection criteria.

Assigning hospitals to the local governments that support them is not a straightforward task. Traditionally, ownership is one approach to the problem, but the designation of "public" versus "private" hospitals ignores transfers from local governments to private facilities. Further, private hospitals that treat Medicaid patients whose coverage is funded

by local governments are, in a sense, dependent on local government funds as well. Thus, we consider different means of assigning hospitals to local governments based on location.

By geo-coding addresses to government boundary maps, we can similarly split the sample according to the government types to see if the results are consistent with the government analysis and to rule out competing concerns of market conditions biasing the results. We assign hospitals in counties that overlap with local governments as belonging to the sample of potential hospitals from our local government sample affected by those changes in spending. As an alternative, we also consider patient-identified market boundaries ("hospital referral regions"), which result in a wider sample of hospitals with consistent results.[16]

The assumption of parallel trends appears to hold in the visual inspection of pre-trends for all outcomes, with the exception of profit margins (Figure 6). Using the event history approach, where a year indicator is interacted with the 2013 uninsured rate and the Medicaid expansion indicator, we find that the assumptions of parallel trends are likely to hold (Table B13 to Table B18). Since the triple-difference coefficients are collectively not significant, then trends observed after 2013 are reasonably attributable to Medicaid expansion that began in 2014.

The outcomes extracted from the Medicaid Cost Report data are operating margins, profit margins, and the ratio of bad debt to receivables. The inflows reported to calculate these measures consist of both public and private sources. The metrics related to utilization are the reported number of Medicaid inpatient days and the number of outpatient visits. The last outcome ("Any Government grants, appropriations, or transfers") equals 1 if hospitals received any state or local government funding and zero otherwise. Unfortunately for the purposes of this paper, this measure cannot separately distinguish between state and local funding. However, it operates as a proxy for the number of hospitals, at the extensive margin, receiving public support.

5.4 Results

Table 6 presents the estimated treatment effect of Medicaid expansion on hospitals located within and close to local governments in the sample, for the specifications in equation (3). The sample of included hospitals is split similarly to the government analysis. Robust standard errors are reported in parentheses, but clustering is not possible due to the limited number of observations. For rural areas that voted for Obama, there are too few

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[16]Hospital referral regions (HRRs) define hospital markets based on the utilization patterns of Medicare patients, because all hospitals accept Medicare, and utilization patterns are not constrained by administrative definitions of networks. Each of the 306 HRRs has a minimum population size of 120,000. Wennberg (1996) provides additional details on this market definition.

hospitals to estimate a triple-difference specification. The outcomes for the hospital-level analysis are hospital operating margins, profit margins, bad-debt-to-receivables ratio, and the number of inpatient days and outpatient visits provided to Medicaid patients. Finally, we consider the differences in the likelihood of receiving state/local funds, which is only available in the data from 2011 forward. The variable of interest is $Post \times Unins 2013Q4 \times Expansion$.

For hospitals in areas that voted for Obama, Medicaid expansion does not significantly change operating or profit margins between expansion and non-expansion states (Table 6). This finding indicates that the profitability of patient mix did not shift following Medicaid expansion. If there was cream-skimming among hospitals, the distribution of operating and profit margins would have shifted. While the direction of these coefficients suggests a decrease, none are statistically significant. Therefore, we do not find compelling evidence that hospitals that previously did not serve Medicaid patients began to extract the most profitable Medicaid patients from their usual choice of hospitals after the expansion. Charity care, as measured by the bad debt ratio, decreased by a statistically insignificant margin; this is inconsistent with a cream-skimming narrative in which hospitals supported by local funding face worsening financial conditions. The provision of Medicaid care did not change significantly, though the point estimates are generally positive in expansion states.[17] While state funding is mixed with local funding, Obama areas reported a slight, statistically insignificant increase in the likelihood of receiving any money from governments. The picture here appears to be more consistent with our inference of increased governmental support rather than a narrative of market condition changes induced by state Medicaid expansion under the ACA.

For the Romney results, across the board we see small effect sizes that are not statistically significant. There is nothing to suggest that these hospitals have been made financially worse off. This is consistent with the previous analysis that they are now being reimbursed by Medicaid, rather than relying on local tax support.

Table 6 shows that these findings remain in place across urban and rural political subsamples. As a further sensitivity check, we limit the sample to only hospitals that reported state/local funds prior to 2014 (Table 7). The coefficients are largely not statistically significant. However, hospitals in rural areas that voted for Romney are one exception. These hospitals reported improved profit margins following the expansion (0.47, significant at the 0.001 level). The broader trend, however, suggests that effects of local government spending were not isolated to a subset of hospitals identified as needing state/local government support prior to the expansion.

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[17]Appendix Figures B1 and B2 compare trends of included hospitals to the universe of acute-care hospitals to ensure comparable trends.

Our findings are robust to a number of sensitivity checks. First, we test for trends in the selected outcomes using pre-expansion uninsurance. We find no notable or consistent evidence that observed changes in the main analysis were underestimated due to pre-expansion trends (Appendix Table B13 to Appendix Table B18). We also check whether results are driven by the inclusion of states that expanded Medicaid before January 1, 2014 (Appendix Table B19). Finally, we test the sensitivity of these results by considering alternate definitions of hospitals that local governments could support, such as markets defined by Medicare patient flows (Appendix Table B20 and Table B21).

6   Conclusion

Whether governments represent the interests of their constituents is central to any argument for the existence of representative government. Yet in the case of local, representative governance, few empirical investigations of its effectiveness exist. Our paper provides evidence that American local governments did indeed react in a manner that was voter-preference consistent, given incentives created when states expanded Medicaid under the ACA. A difference-in-differences empirical analysis of data on general-purpose local governments from 2006 to 2015 demonstrates that local governments in areas that voted for Romney reduced their entanglement with local hospitals by reducing their spending on hospital services and cutting property taxes. By contrast, local governments in areas that voted for Obama took advantage of the lower cost of providing hospital services by raising property taxes and spending more on hospital services.

Yet, whether a preference is consistent with the superficial will of the electorate says nothing about its long-term impact on civic life. A Romney-voting district, for example, may disentangle local government from hospitals at one level, but increase its eventual obligation to provide healthcare services by unintentionally creating a sicker population. Our results demonstrate that the spending changes in both Obama- and Romney-voting areas closely correspond to changes in profitability, but not to changes in Medicaid patient volume or operating margins. Moreover, these findings imply that local government financing has had a substantial influence on hospital financing, even as the rate of uninsurance has declined. As future provisions of the ACA implement reductions in federal support for charity care through 2025, the role of local governments may be expected by policy makers or voters to increase over time.

Looking towards future research, this paper is the first to investigate the local, public economics of healthcare delivery. In doing so, it also establishes the existence of a sizable gap in the public and health economics literature by illustrating the importance of local governments to hospital service provision. Consequently, there are substantial op-

portunities for future work in the area of local government entanglement with hospitals. Moreover, while pre-policy trend analyses support the differences-in-differences approach employed here, in some subsamples, improvements would be desirable. Continuing research could employ propensity score matching to improve in this regard. Finally, the post-ACA period is, at this point, only two years long: future data releases will likely provide additional insights.

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7 Tables

Table 1: 30 Largest Local Governments by Own Spending on Hospitals ($100s), 2006

	Name	Hospital Expenditures	% Voting for Obama
1	New York City	7,647,884	84.2
2	Los Angeles County	2,454,328	68.9
3	Metropolitan Dade County	1,380,005	61.6
4	Dallas County	1,010,143	57.1
5	Cook County	915,516	74.0
6	Santa Clara County	904,683	69.8
7	Harris County	887,926	49.4
8	Cambridge City	700,137	62.6
9	San Francisco City And County	596,898	83.4
10	Westchester County	591,179	60.4
11	Bexar County	577,714	51.6
12	Cuyahoga County	576,386	68.8
13	Indianapolis City	548,498	60.2
14	Madison County	512,120	45.1
15	Clark County	494,641	56.4
16	Jefferson Parish	488,914	39.8
17	Hennepin County	479,839	62.5
18	Tarrant County	445,583	41.4
19	Hamilton County	437,662	41.3
20	Contra Costa County	436,950	65.7
21	New Hanover County	433,079	47.1
22	Colorado Springs City	417,011	38.1
23	Alameda County	394,373	78.5
24	Nassau County	379,512	52.9
25	San Bernardino County	376,381	51.6
26	Flint City	334,470	63.6
27	North Kansas City	334,249	44.8
28	Shelby County	307,401	62.6
29	Forrest County	283,670	43.5
30	Lubbock County	282,330	28.8

Note: (1) Table reports 30 largest total hospital expenditures made by local governments in 2006. (2) Local governments that operate as specialized districts such as those for schools, fire services, waste treatment, etc., are excluded.

Source: Census' Annual Survey of State & Local Government Finances, 2006

Table 2: Summary Statistics of Local Government Sample

	Non-expansion States			Expansion States			Δ Expansion-Non-expansion
	2006-2013	2014-2015	Δ	2006-2013	2014-2015	Δ	2006-2013
Outcomes							
Total Hospital Expenditure	82591.7 (204894.8)	119120.7 (256349.8)	-36529.0**	144095.4 (640428.0)	300736.0 (1055937.1)	-156640.6**	-1631.3
Hospital Construction	2816.9 (10465.5)	2714.3 (7269.1)	102.6	4154.1 (28385.7)	9425.6 (43697.2)	-5271.5*	-2255.4
Hospital Charges	63587.5 (139044.1)	55453.7 (120956.8)	8133.8	83931.6 (283435.6)	122505.4 (402203.9)	-38573.8+	7607.7
Property tax	56361.3 (190480.1)	78466.4 (223278.9)	-22105.1*	208529.3 (1259112.3)	241454.0 (1634578.1)	-32924.7	72730.2
Covariates:							
Poverty Rate	0.16 (0.062)	0.15 (0.064)	0.013***	0.13 (0.049)	0.16 (0.054)	-0.025***	-0.014
Median household income	42760.1 (9974.6)	50301.6 (12970.6)	-7541.6***	48754.1 (12644.9)	48765.3 (12570.7)	-11.1	6943.0+
Total population	134569.5 (381509.6)	166371.1 (426192.2)	-31801.6	367854.3 (1106857.4)	310513.6 (933442.9)	57340.7	219676.3
Non-White	18.4 (18.5)	17.3 (19.2)	1.15	11.1 (12.7)	12.1 (12.1)	-1.01	4.26
Above 65	14.8 (3.78)	17.1 (3.62)	-2.33***	15.8 (3.89)	17.1 (4.75)	-1.29***	-0.62
Female	50.3 (1.98)	50.6 (1.29)	-0.22***	50.2 (1.67)	49.6 (2.23)	0.61***	0.58*
Sample Subset:							
Obama majority (2012)	0.23 (0.42)	0.35 (0.48)	-0.13***	0.43 (0.50)	0.21 (0.41)	0.22***	0.16
Rural	0.28 (0.45)	0.27 (0.45)	0.0097	0.31 (0.46)	0.41 (0.49)	-0.098***	-0.12
Obs.	2588	553	3141	1790	380	2170	38

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

Note: (1) Rural refers to areas with Rural-Urban Continuum Codes between 7 and 9. (2) Non-white, Above 65, and Female are the share of the county population that fall within those respective categories. (3) Excluded states that adopted Medicaid expansion after 1/1/2014: AK, IN, PA, MT, and LA. (4) Includes only local governments that reported hospital expenditures. (5) Reports average values within each time period and standard deviations in the parentheses.

Table 3: Effect of Medicaid Expansion on Selected Outcomes Among Local Governments Reporting Hospital Expenditures

	Total Hospital Expenditure								
	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Obama	Rural/Romney
Post × Qt4Unins2013	6972.5	-134123.6***	24558.7	15700.6	-123874.6***	48569.9	-15748.9*	-28695.5**	-19424.4+
	(15292.7)	(33612.4)	(21550.8)	(20159.7)	(36883.8)	(30811.7)	(7465.7)	(8522.3)	(10811.1)
..× Expansion	10614.1	322692.7**	-48888.7+	47719.0	374637.9**	-89089.8*	12435.3	2910.9	14883.7
	(48820.9)	(119852.7)	(24954.0)	(83212.3)	(133497.6)	(37231.9)	(8520.4)	(12931.6)	(11666.5)
	Hospital Construction								
Post × Qt4Unins2013	746.8	-7297.9**	1081.9	1007.7	-7484.3*	1635.9	-452.2	369.8	-144.3
	(1112.2)	(2478.1)	(1585.7)	(1468.0)	(3020.0)	(2289.6)	(599.5)	(946.0)	(808.1)
..× Expansion	-5703.8*	-8438.8	-779.3	-8893.7+	-9016.8	-1601.8	664.0	-1972.8	406.3
	(2907.4)	(11040.6)	(1730.2)	(4829.2)	(11952.1)	(2539.8)	(714.4)	(1492.3)	(904.7)
	Hospital Charges								
Post × Qt4Unins2013	5215.6	-29898.8**	10726.1	7437.0	-45335.9***	16641.4	-3249.9	-11518.3***	-1875.5
	(5713.8)	(10114.0)	(7539.4)	(7707.6)	(11535.0)	(11050.6)	(2547.5)	(3207.3)	(3790.1)
..× Expansion	-6046.4	43622.5	-9573.1	4852.4	72940.0	-18593.7	5022.4+	16615.9**	3218.3
	(16299.1)	(45198.6)	(8822.7)	(27179.3)	(49197.7)	(13689.5)	(2905.3)	(5125.9)	(4076.2)
	Property tax								
Post × Qt4Unins2013	2255.9	-26582.1	1611.0	5165.8	-16567.1	2591.0	102.8	358.4	57.5
	(2823.7)	(19941.1)	(1883.8)	(4444.3)	(29583.9)	(2699.9)	(305.5)	(669.5)	(370.4)
..× Expansion	-14800.3	-1181.4	-6152.4	-27139.5	-23245.2	-15249.7*	5172.1+	-386.1	6123.6*
	(11762.0)	(39322.7)	(4253.6)	(19486.3)	(49191.3)	(6877.4)	(2716.0)	(888.3)	(3091.6)
Obs.	5077	1353	3646	3548	1136	2332	1447	146	1265

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Post period: after 1/1/2014. (2) *Qt4Unins*2013 equals one if the local government is in a county ranked in the top quartile of low-income uninsured rate of 2013. The sample of the distribution of the uninsured rate is defined by the column title. (3) Excludes governments without hospital-related expenditures. (4) Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA. (5) Covariates include poverty rate (all ages), median income, total population, percent of non-white population, percent of population above age 65, and percent female. (6) All specifications include county fixed effects, year fixed effects, and state-specific time trends.

Table 4: Effect of Medicaid Expansion on State and Federal Intergovernmental Transfers Among Local Governments Reporting Hospital Expenditures

	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Obama	Rural/Romney
State Intergovernmental Transfers: Health/Hospitals									
Post × Qt4Unins2013	-2176.0+	-13244.5**	-2995.4*	-2798.4+	-10101.6+	-4205.8*	76.7	56.2	66.1
	(1236.6)	(5094.7)	(1261.0)	(1680.1)	(5212.8)	(1829.6)	(72.5)	(311.2)	(93.7)
..× Expansion	10228.4	22642.8	2561.4	16926.3	20614.5	1895.3	-23.1	-1685.9	64.5
	(6372.1)	(17693.8)	(1634.3)	(10701.9)	(19420.5)	(2777.3)	(145.2)	(1603.6)	(149.8)
Federal Intergovernmental Transfers: Health/Hospitals									
Post × Qt4Unins2013	-3340.3	226.8	-4972.6+	-4493.3	97.7	-7361.3+	20.5	13.8	38.2
	(2232.5)	(601.8)	(2776.9)	(3030.4)	(1232.6)	(4103.9)	(34.4)	(38.6)	(49.0)
..× Expansion	3287.3	-2354.2	4581.0	4563.3	-2598.7	6871.9+	-129.4	175.3	-159.0
	(2291.1)	(1784.4)	(2785.7)	(3188.2)	(2567.2)	(4169.5)	(89.3)	(208.4)	(103.2)
Obs.	5077	1353	3646	3548	1136	2332	1447	146	1265

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Post period: after 1/1/2014. (2) Excludes governments that appear for only one year over the course of the panel, that only appear during Census years, or that have no hospital-related expenditures. Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA. (3) Covariates include poverty rate (all ages), median income, total population, percent of non-white population, percent of population above age 65, and percent female.

Table 5: Summary Statistics of Acute-Care Hospitals

	All States			Non-expansion States		Expansion States	
	Excluded	Included	Excl.-Incl.	Excl: Δ Pre/Post	Incl: Δ Pre/Post	Excl: Δ Pre/Post	Incl: Δ Pre/Post
Occupancy Rate	0.48	0.47	0.0054	0.026***	0.030*	0.034***	0.035*
	(0.21)	(0.24)					
Medicaid Outpatient Visits	943.1	1095.2	-152.1***	199.6***	235.6**	179.2***	491.8***
	(1781.3)	(1925.5)					
Medicaid Inpatient days	4441.8	6520.0	-2078.2***	681.8***	1160.3***	763.9***	4011.3***
	(9453.4)	(13519.9)					
Operating margin	-0.049	-0.11	0.058*	0.0036	0.085	0.044	-0.045*
	(1.15)	(1.40)					
Profit Margin	1.82	1.63	0.19***	-0.57***	-0.37**	-0.32***	-0.45**
	(1.84)	(1.93)					
Bad debt ratio to receivables	0.12	-0.028	0.14	0.62	0.47***	0.44***	0.36***
	(38.2)	(0.45)					
Adult and pediatric beds	147.1	173.6	-26.5***	3.29	3.71	4.51	9.07
	(185.1)	(241.6)					
Receipt of state and local funding (1=Yes)	0.097	0.11	-0.016**	-0.085***	-0.11***	-0.094***	-0.074***
	(0.30)	(0.32)					
HHI (Beds)	15611026.5	20301573.5	-4690547.0***	-6242.8	-123565.9	166794.1	1819838.9
	(18708947.7)	(32357162.3)					
Obama-majority, 2012	0.38	0.46	-0.080***	0.0063	0.014	0.0035	0.022
	(0.48)	(0.50)					
Rural [RUCC code 7-9]	0.18	0.26	-0.088***	-0.00016	0.000054	-0.0039	-0.0060
	(0.38)	(0.44)					
State expanded Medicaid in 2014	0.50	0.54	-0.043***				
	(0.50)	(0.50)					
Obs.	37274	3776	41050	18607	1721	18667	2055

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) The Office of Management and Budget 2013 Rural-Urban Continuum Codes (RUCC) classifies counties by degree of urbanization and adjacency to a metro area on a scale of 1 (urban) to 9 (rural). (2) Post period: after 1/1/2014. (2) "Receipt of state and local funding" refers to any Government grants, appropriations or transfers for support of hospital operations.

Source: Medicare Cost Reports, 2006-2015

Table 6: Effect of Medicaid Expansion on Hospital Outcomes

	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Obama	Rural/Romney
Hospital Operating Margin									
Post × Unins2013	0.10	0.48	0.021	0.13	0.52	0.016	0.015	0.050	-0.013
	(0.076)	(0.40)	(0.017)	(0.10)	(0.44)	(0.022)	(0.019)	(0.043)	(0.029)
..× Expansion	-0.11	-0.47	0.0044	-0.13	-0.51	0.039	-0.12		-0.085
	(0.080)	(0.40)	(0.065)	(0.11)	(0.44)	(0.067)	(0.088)		(0.093)
Profit Margin									
Post × Unins2013	0.13+	0.36*	0.10	0.21*	0.40*	0.18+	-0.090	-0.37*	-0.11+
	(0.068)	(0.15)	(0.071)	(0.090)	(0.16)	(0.099)	(0.063)	(0.16)	(0.059)
..× Expansion	-0.039	-0.35	0.30	-0.15	-0.38	0.11	0.18		0.21
	(0.22)	(0.34)	(0.28)	(0.24)	(0.35)	(0.37)	(0.14)		(0.15)
Bad debt ratio to receivables									
Post × Unins2013	0.014	0.041	0.52	-0.00055	0.024	0.52	0.056	-0.18	0.034
	(0.042)	(0.049)	(0.63)	(0.056)	(0.048)	(0.68)	(0.036)	(0.16)	(0.047)
..× Expansion	0.59	0.97	-0.48	0.67	1.00	-0.51	0.070		0.098
	(0.47)	(0.82)	(0.63)	(0.52)	(0.84)	(0.68)	(0.090)		(0.096)
Medicaid Outpatient Visits									
Post × Unins2013	-75.8	392.8	-137.5	-153.5	508.3	-163.0	114.1*	305.4	30.9
	(604.3)	(1913.4)	(524.7)	(828.5)	(2022.6)	(706.6)	(55.1)	(224.2)	(44.4)
..× Expansion	412.6	-832.1	1372.2*	538.6	-953.7	1827.3+	-127.6		-60.9
	(943.5)	(2105.5)	(695.9)	(1146.6)	(2210.7)	(940.8)	(128.0)		(125.0)
Medicaid Inpatient Stays									
Post × Unins2013	32.4	-25.7	-23.8	16.1	-19.7	-44.1	11.4	71.1	5.69
	(99.5)	(333.2)	(85.8)	(137.1)	(351.0)	(117.8)	(19.1)	(56.0)	(16.2)
..× Expansion	76.1	46.5	213.0	107.4	37.8	263.4	-49.3		-48.0
	(161.8)	(359.7)	(136.0)	(195.3)	(376.9)	(188.0)	(49.7)		(49.1)
Any Government grants, appropriations or transfers for support of hospital operations									
Post × Unins2013	-0.011	0.024	0.066*	0.0081	0.033	0.078*	-0.074	0.19	0.087
	(0.022)	(0.053)	(0.026)	(0.026)	(0.057)	(0.031)	(0.047)	(0.13)	(0.054)
..× Expansion	0.026	-0.0060	-0.094	0.016	-0.0024	-0.061	0.12		0.0017
	(0.041)	(0.066)	(0.077)	(0.044)	(0.069)	(0.099)	(0.097)		(0.10)
Obs.	9049	4276	4767	7363	4072	3291	1640	152	1465

Note: (1) Post period begins on 1/1/2014. (2) Include hospital fixed effects, year fixed effects, and state-specific time trends. (3) The sample of hospitals are in any part of the included counties of the COGS sample. (4) The outcome in the bottom panel is from 2011 to 2015. (5) The specification for the sample of local governments in rural counties that voted for Obama is a difference-in-differences model due to small sample size.

Source: Medicare Cost Reports, 2006-2015

Table 7: Effect of Medicaid Expansion on Hospital Outcomes Among Hospitals that Reported State/Local Program Costs Pre-2014

	Hospital Operating margin								
	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Obama	Rural/Romney
Post × Unins2013	0.030	0.11*	-0.031	0.028	0.13*	-0.041	0.055	-0.056	-0.011
	(0.019)	(0.047)	(0.029)	(0.021)	(0.050)	(0.034)	(0.041)	(0.068)	(0.061)
..× Expansion	-0.075	-0.11+	-0.19	-0.028	-0.13*	0.070	-0.53		-0.46
	(0.058)	(0.060)	(0.29)	(0.034)	(0.063)	(0.044)	(0.81)		(0.87)
Profit Margin									
Post × Unins2013	0.33**	0.60**	0.25*	0.39**	0.71***	0.29+	-0.060	-0.74	-0.13+
	(0.099)	(0.21)	(0.13)	(0.12)	(0.21)	(0.16)	(0.098)	(0.47)	(0.076)
..× Expansion	-0.26	-0.62	-0.065	-0.37	-0.73	-0.37	0.24		0.47**
	(0.28)	(0.46)	(0.25)	(0.30)	(0.47)	(0.31)	(0.19)		(0.17)
Bad debt ratio to receivables									
Post × Unins2013	-0.25	0.11	0.53	-0.27	0.056	0.56	0.0039	0.57	-0.070
	(0.22)	(0.11)	(1.44)	(0.22)	(0.11)	(1.79)	(0.096)	(0.47)	(0.088)
..× Expansion	0.22	-0.083	-0.55	0.24	-0.034	-0.58	0.13		0.17
	(0.22)	(0.11)	(1.44)	(0.23)	(0.11)	(1.80)	(0.17)		(0.18)
Medicaid Outpatient Visits									
Post × Unins2013	46.0	-3567.6	1384.1+	-68.1	-3904.0	1721.4+	528.2***	719.7	190.2
	(1070.6)	(2214.1)	(764.9)	(1275.8)	(2381.9)	(932.5)	(148.4)	(464.2)	(142.9)
..× Expansion	21.6	1478.0	793.0	167.4	1802.1	1025.2	-323.3		7.04
	(1567.0)	(2632.0)	(1128.4)	(1762.7)	(2787.6)	(1476.3)	(369.4)		(390.9)
Medicaid Inpatient Stays									
Post × Unins2013	66.7	-373.5	99.8	-2.84	-415.3	119.9	136.5*	75.0	58.5
	(175.3)	(390.0)	(156.4)	(207.3)	(421.0)	(189.9)	(59.8)	(71.4)	(54.4)
..× Expansion	39.4	224.1	150.3	109.5	261.3	136.2	-103.7		-23.8
	(258.2)	(441.6)	(238.0)	(288.9)	(470.6)	(311.4)	(135.7)		(140.6)
Any Government grants, appropriations or transfers for support of hospital operations									
Post × Unins2013	0.077*	0.079	0.11**	0.12***	0.087	0.11*	-0.065	0	0.037
	(0.032)	(0.075)	(0.041)	(0.035)	(0.080)	(0.048)	(0.10)	(.)	(0.13)
..× Expansion	-0.069	-0.057	-0.068	-0.092	-0.060	0.073	-0.20		-0.31+
	(0.054)	(0.089)	(0.099)	(0.057)	(0.094)	(0.12)	(0.15)		(0.17)
Obs.	5856	3382	2402	5380	3315	1989	389	36	327

Note: (1) Post period begins on 1/1/2014. (2) Include hospital fixed effects, year fixed affects, and state-specific time trends. (3) The sample of hospitals are in any part of the included counties of the COGS sample. (4) The outcome in the bottom panel is from 2011 to 2015. (5) The specification for the sample of local governments in rural counties that voted for Obama is a difference-in-differences model due to small sample size.

Source: Medicare Cost Reports, 2006-2015

36

8 Figures

Figure 1: Number of Local, General Purpose Governments with Hospital Expenditures by Presence in Medicaid Expansion State
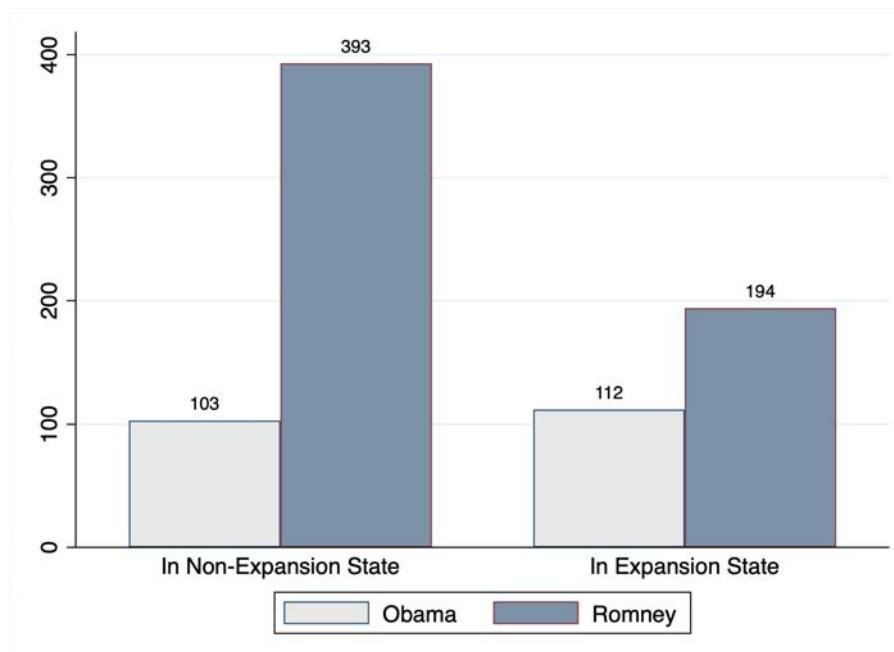
Note: (1) 802 of counties and municipalities providing general government services that had hospital expenditures in the pre-period and were observed in the survey at least twice during the study period (2006-2015). Local governments that operate as specialized districts such as those for schools, fire services, waste treatment, etc., are excluded. (2) "Obama" and "Romney" designation is based on which candidate received the majority vote in the county.

Source: Census of State and Local Governments, 2006-2015.

Figure 2: State and Local Government Expenditures on Hospitals, 1977-2015

(a) Hospital Expenditures (Millions, $)

(b) Percent of Total Expenditures
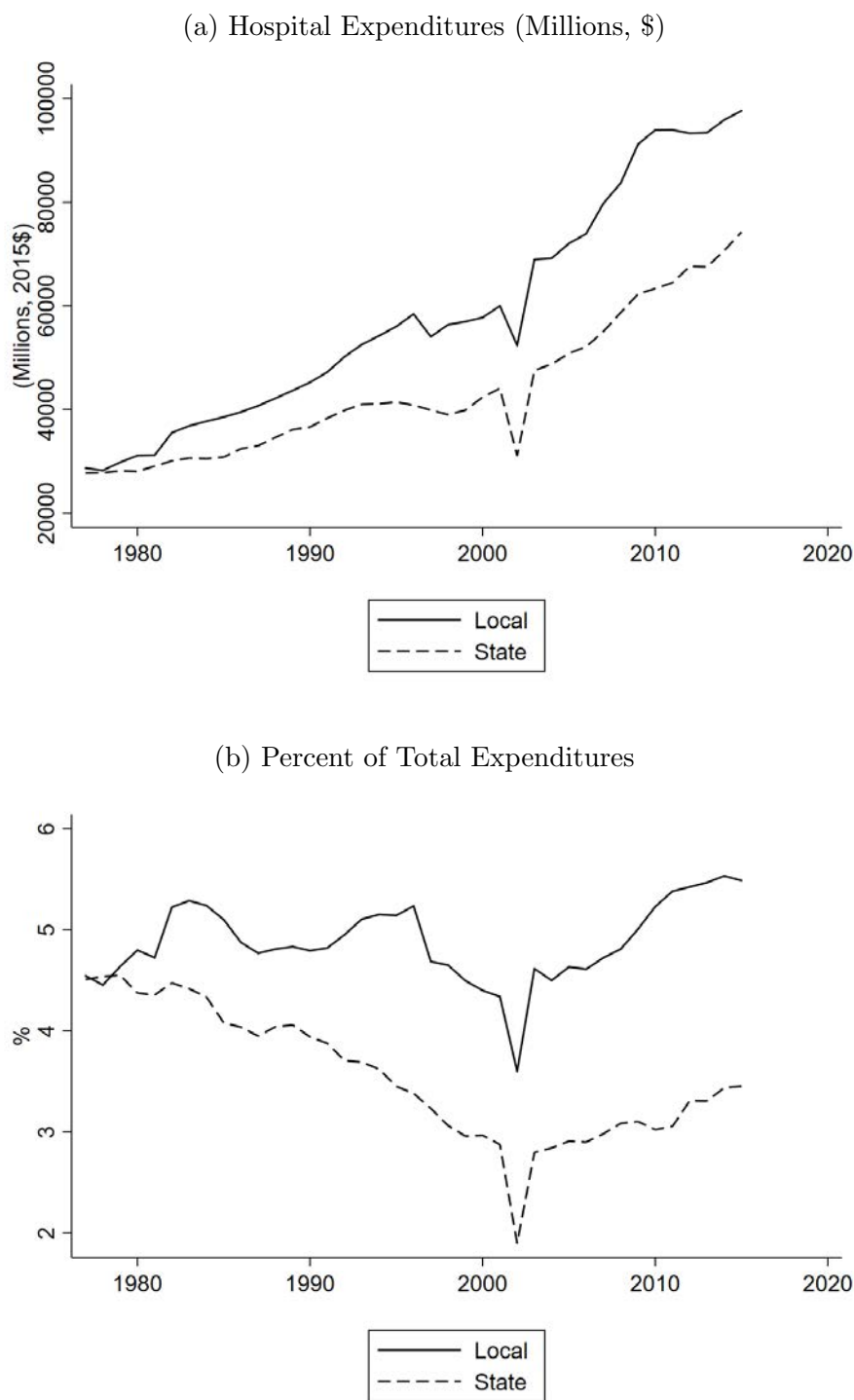
Note: Expenditures among all general purpose, local governments. Local governments that operate as specialized districts such as those for schools, fire services, waste treatment, etc., are excluded.

Source: Census of State and Local Governments, 1977-2015.

38

Figure 3: Trends in Local Government Hospital Employment, 2000-2016

(a) Hospital Employment/Total Non-Edu. Employment
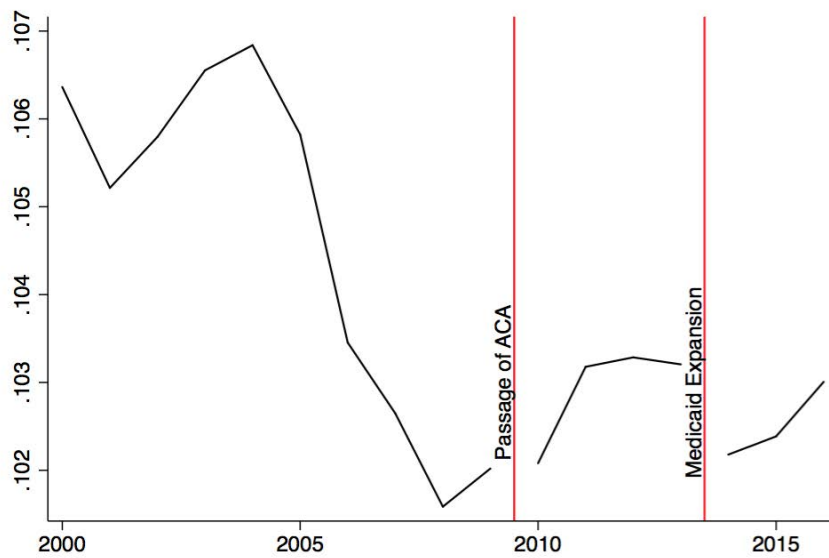
(b) Hospital Employment by Sector
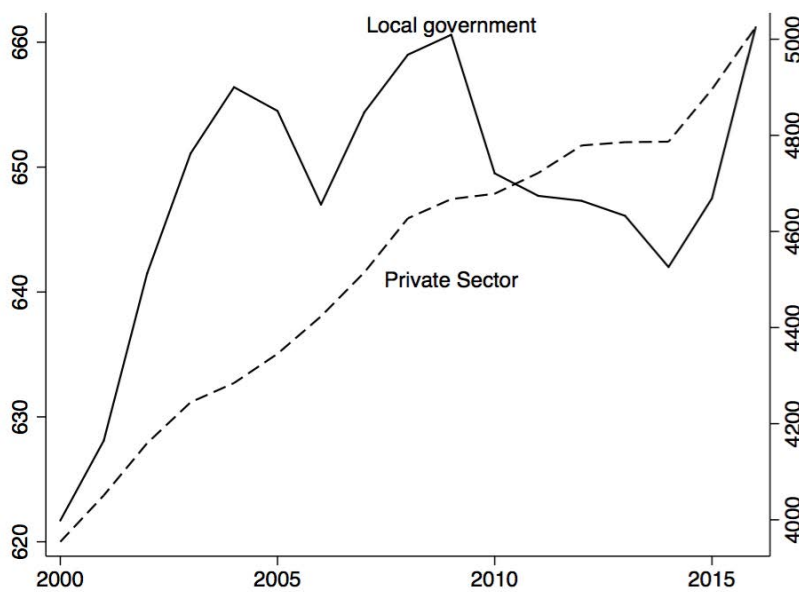
Note: Subfigure (a) presents national public hospital employment as a share of public employees, excluding education (Range: 0,1). Subfigure (b) presents national public hospital employment (number of employees on left-hand side axis) and private sector (number of employees on right-hand side axis) hospital employment.

Source: U.S. Bureau of Labor Statistics, 2000-2016

Figure 4: Trends in Local Government Hospital Expenditures and Property Tax Revenues, 2006-2016

(a) Hospital Expenditures

(b) Hospital Construction

(c) Hospital Charges

(d) Property Tax

Non-expansion ——— Expansion - - - -
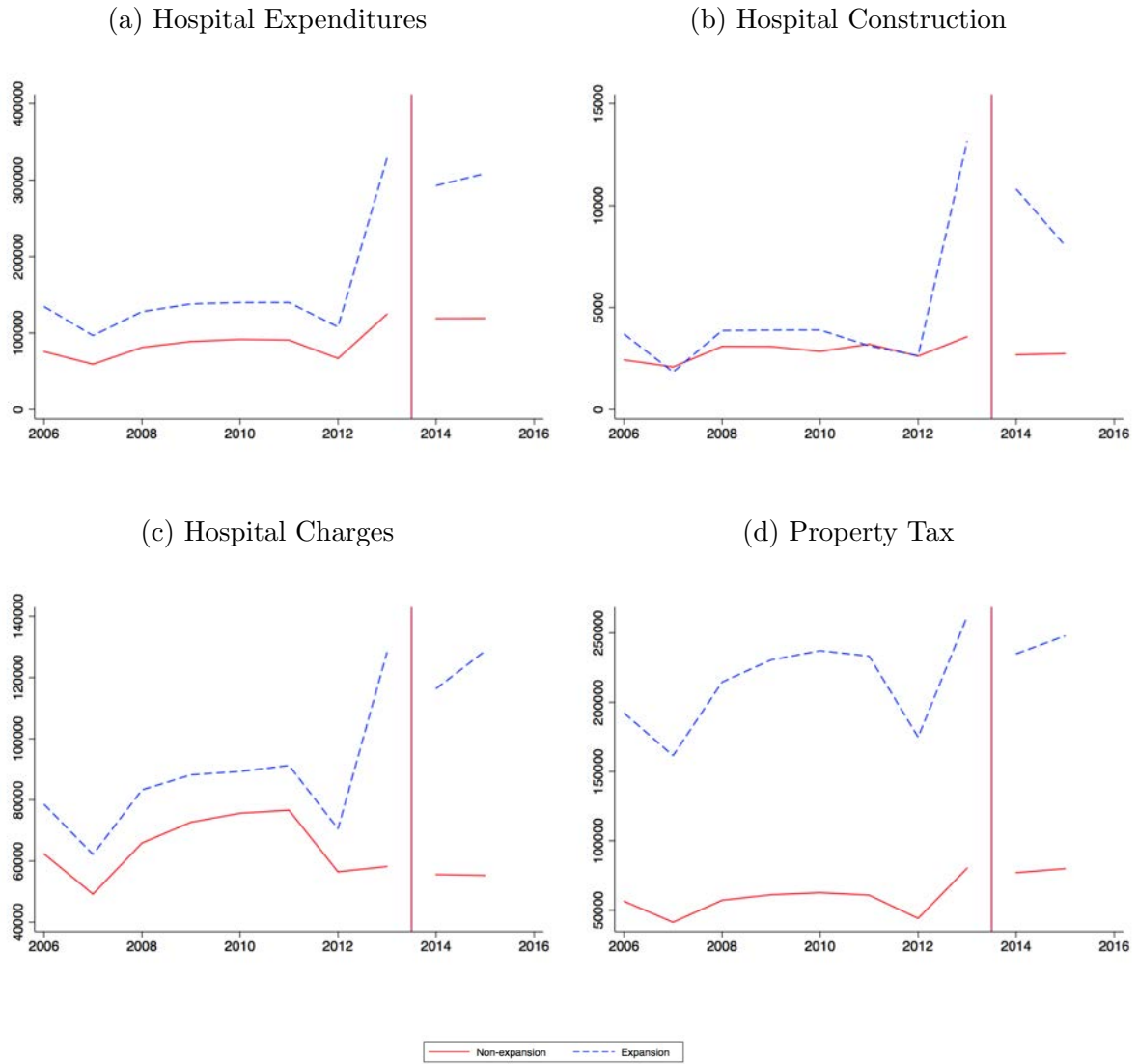
Note: (1) Expenditures among 802 general purpose (county or municipality) local governments that surveyed in the pre-period and observed in the survey at least twice. Local governments that operate as specialized districts such as those for schools, fire services, waste treatment, etc., are excluded. (2) Hospital Expenditures is the total of local government expenditures, regardless of hospital ownership status. Hospital construction is a subset of hospital expenditures. Hospital Charges are for publicly-administered hospitals. Figures present levels of each local government outcome.

Source: Census of Local Governments, 2006-2015

40

Figure 5: Functions of Local Government Expenditures, 2012

General Administration — 9.9%
Welfare — 3%
Health — 4.1%
Hospitals — 35.4%
Transportation (Roads, Parking, Transit, etc.) — 10.4%
Public Safety (Fire, Police, Corrections) — 12.2%
Utilities — 5.6%
Environment & Housing (Sewage, Stormwater Mgmt., etc.) — 7.1%
Interest on Debt — 2.0%
Other — 10.0%
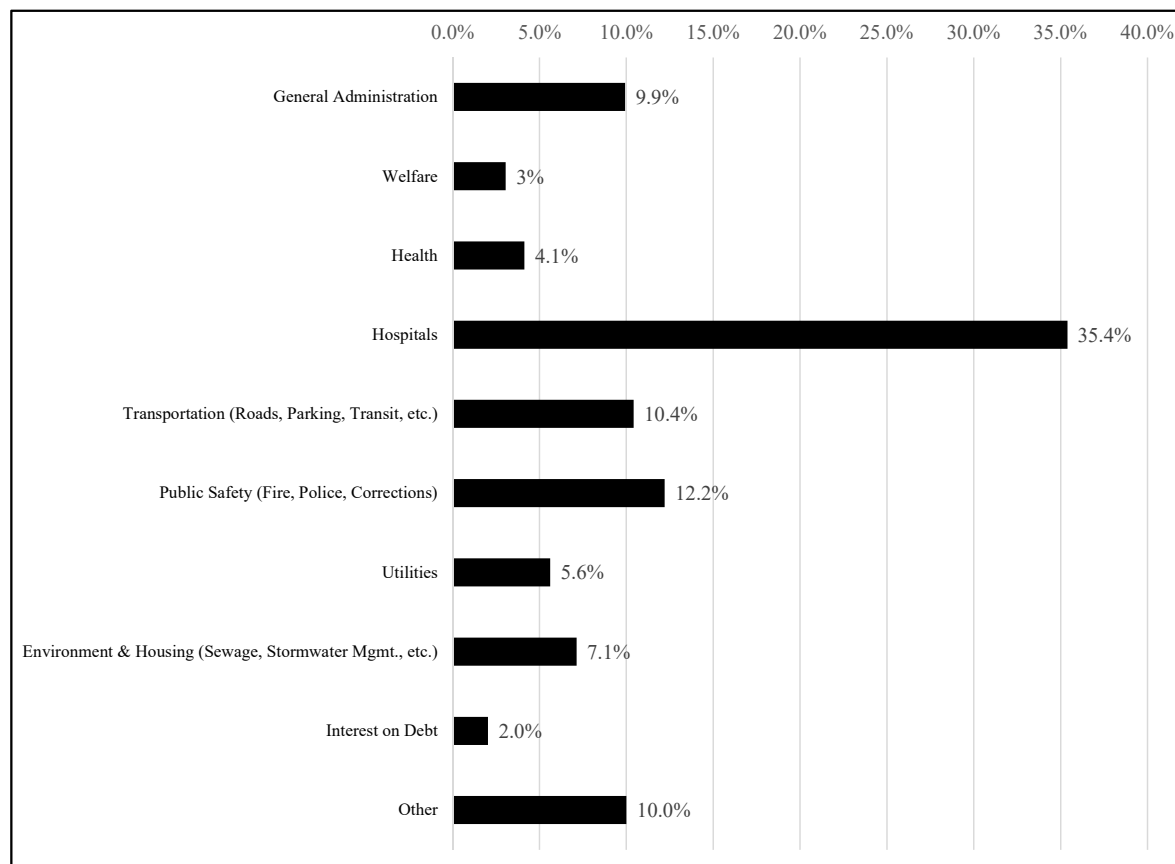
Note: The reported percentages are the mean percentage share of local governments expenditures as a share of their total expenditures. Restricted to the 802 general purpose (county or municipality) local governments that surveyed in the pre-period with hospital expenditures and observed in the survey at least twice. Local governments that operate as specialized districts such as those for schools, fire services, waste treatment, etc., are excluded.

Source: Census' Annual Survey of State & Local Government Finances, 2012

Figure 6: Trends in Hospital Financial & Utilization Measures, 2006-2015

(a) Operating Margin
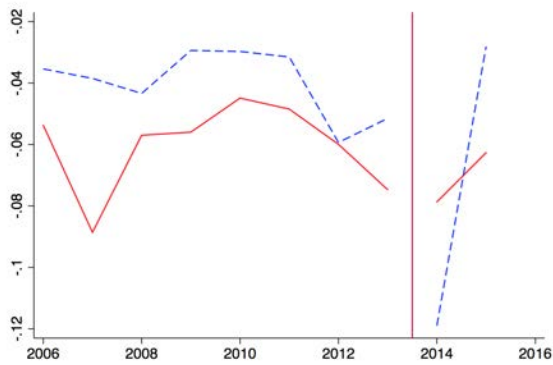
(b) Profit Margin
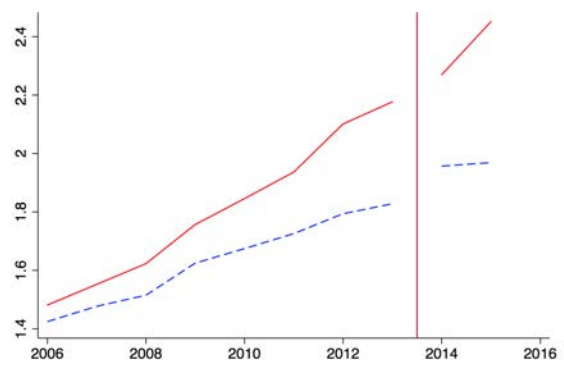
(c) Bad debt:Receivables
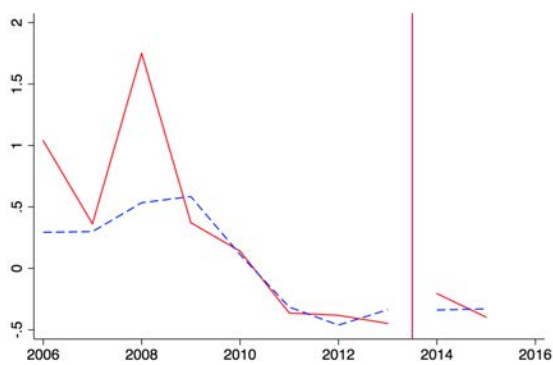
(d) Medicaid Outpatient Visits
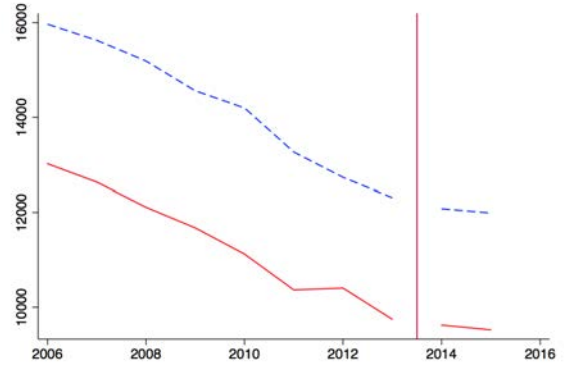
(e) Medicaid Inpatient Stays
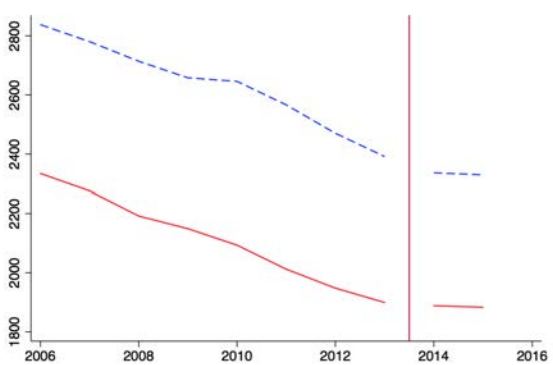
(f) Any Gov. Funding
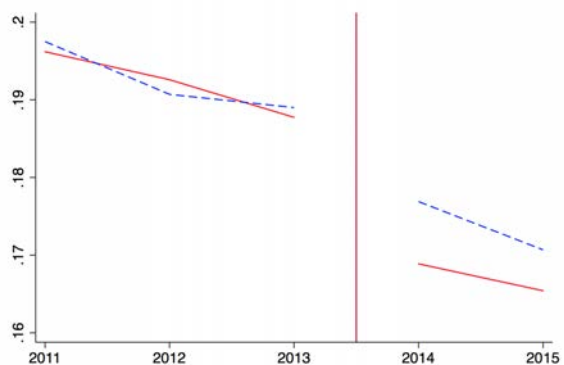
Non-expansion ——— Expansion – – – –

Note: (1) Trends controls for hospital and year, fixed effects. (2) Hospitals in/near 802 general purpose, local governments. Local governments that operate as specialized districts such as those for schools, fire services, waste treatment, etc., are excluded. (3) Government funding refers to the receipt of any grants, appropriations, or transfers for hospital operations made by state or local governments. Levels of each hospital financial measure are presented.

42

Source: Medicare Cost Report, 2006-2015

Appendix. 1   Pre-Trends

Table A1: Pre-trends: Total Hospital Expenditures

	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Romney
Unins2013× 2006	-2163.0	38048.6	-7474.7	1135.6	38773.9	-7163.4	10053.6***	12143.7**
	(2788.8)	(30614.8)	(11662.9)	(18092.4)	(31062.7)	(18264.7)	(2482.5)	(4090.6)
...× 2007	-2441.8	37742.6	-7947.4	-2553.2	41671.2	-9941.9	10377.2***	11889.0**
	(2612.8)	(27871.1)	(11473.6)	(17198.1)	(27966.9)	(17496.5)	(2296.7)	(3975.5)
...× 2008	-2480.4	29199.0	-10328.3	-6457.9	28581.3	-10467.9	9367.4***	11693.6**
	(2526.8)	(24536.9)	(11643.2)	(17184.1)	(20311.6)	(17903.6)	(2518.0)	(4126.7)
...× 2009	-2521.3	34197.7	-11380.3	-8754.0	31824.3+	-10683.9	7125.6*	8023.7+
	(2518.7)	(21653.1)	(11657.8)	(17015.6)	(17214.4)	(17433.7)	(2681.1)	(4652.4)
...× 2010	-2185.4	32781.5	-8279.2	-6066.9	31075.0+	-7090.3	7837.1**	8526.0+
	(2457.1)	(21011.4)	(11774.0)	(16964.1)	(16863.0)	(17929.8)	(2344.4)	(4439.0)
...× 2011	-3140.0	28418.7	-5426.5	-7674.1	26584.6	-2474.5	8689.9***	9507.5*
	(2675.9)	(21666.7)	(12221.5)	(17074.1)	(20184.7)	(18667.3)	(2084.4)	(3800.1)
...× 2012	-3750.4	19756.4	-7305.3	-11285.8	6750.0	-7172.4	9863.7***	11007.9**
	(2664.2)	(22572.1)	(12248.6)	(17223.0)	(18065.0)	(18754.4)	(2080.9)	(3470.7)
Unins2013× Expansion × 2006	3798.9	1291.7	26020.1	18206.5	1602.0	38216.3	817.4	-9993.3*
	(5040.6)	(85301.1)	(20370.6)	(60330.8)	(97608.5)	(37205.1)	(8069.6)	(4691.4)
...× 2007	7805.6+	83876.4	28767.6	74199.9	99667.8	44700.8	-1593.4	-10700.9*
	(4570.8)	(80432.6)	(20490.4)	(47058.8)	(87653.6)	(37327.0)	(7837.6)	(4209.8)
...× 2008	7327.6	79205.8	28638.2	73041.6	95439.1	37434.9	-1088.3	-10162.0*
	(4855.5)	(82104.9)	(20508.6)	(52219.2)	(91447.8)	(37026.3)	(7620.1)	(4522.2)
...× 2009	4904.1	39908.3	27844.5	51786.3	53137.8	35713.9	497.1	-7122.2
	(4204.6)	(73690.2)	(20125.8)	(45041.9)	(83042.7)	(36098.2)	(8042.7)	(5361.0)
...× 2010	4222.8	37495.0	22268.6	45196.8	47431.5	28859.8	-974.7	-9332.5
	(4193.4)	(73818.2)	(20451.4)	(44985.9)	(80115.7)	(36826.2)	(8127.6)	(5696.2)
...× 2011	4039.6	27678.3	20378.3	32255.4	35397.4	24043.4	-1840.9	-10142.2*
	(4238.1)	(75354.2)	(20805.6)	(45768.0)	(82840.2)	(37511.0)	(7902.9)	(4919.7)
...× 2012	3671.8	17345.0	20597.9	22651.7	25057.1	25057.1	-2803.5	-11795.3*
	(4336.5)	(74257.7)	(20927.8)	(47993.2)	(84135.8)	(37470.5)	(7805.4)	(4578.5)
Obs.	4132	1092	2974	2921	913	1942	1141	989
2006-2010 Mean	107651.9	224902.9	59617.9	144471.5	265211.5	81424.6	18366.9	18050.3
2006-2010 SD	442373.3	799075.1	144103.8	521452.3	868199.5	173269.5	27179.1	27507.5
P-value: joint significance of pretrend test	0.23	1.9e-09	0.000059	0.00024	0.0020	0.0000044	0.00000016	4.5e-12

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Excludes governments not reporting hospital-related expenditures. (2) Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA. (3) Covariates include poverty rate (all ages), median income, total population, percent of non-white population, percent of population above age 65, and percent female.

Source: Census of State and Local Governments, 2006-2013

Table A2: Pre-trends: Hospital Construction

	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Romney
Unins2013× 2006	-58.4	7391.1+	-1073.1	281.2	5369.8	-1284.0	300.8	466.7
	(216.1)	(3900.2)	(1193.1)	(1490.1)	(3621.6)	(1433.8)	(359.0)	(394.7)
...× 2007	-209.0	4601.0	-1798.8+	-1518.0	2579.0	-2562.8*	583.8	782.8
	(167.7)	(3008.2)	(939.4)	(1187.2)	(2689.3)	(1079.1)	(497.9)	(547.0)
...× 2008	-210.0	4362.9	-1877.9*	-1747.3+	1686.1	-1997.6+	-29.4	42.3
	(143.7)	(3080.7)	(820.3)	(981.3)	(2413.2)	(1016.7)	(468.6)	(532.8)
...× 2009	-382.3*	1810.3	-2384.0*	-2461.7*	-807.4	-2187.9+	-1348.7	-1458.7
	(175.1)	(2820.2)	(907.9)	(1103.5)	(2784.1)	(1236.7)	(810.6)	(1059.9)
...× 2010	-153.3	3067.6	-1405.0	-1143.4	711.8	-814.9	-852.5	-781.4
	(189.4)	(2741.3)	(982.6)	(1025.6)	(1909.6)	(1194.1)	(725.7)	(806.1)
...× 2011	-117.3	1627.8	-981.2	-1370.6+	0.18	-469.9	-262.9	-58.3
	(174.4)	(2593.1)	(799.6)	(795.0)	(1899.2)	(799.6)	(398.2)	(503.8)
...× 2012	-106.1	810.2	-1033.8	-1427.8	-1245.2	-803.3	324.4	510.0
	(186.1)	(2744.6)	(906.3)	(920.4)	(1837.5)	(960.0)	(676.7)	(749.9)
Unins2013× Expansion × 2006	707.2	7179.3	-562.8	2894.2	10085.0	-1463.4	-620.5	-39.3
	(685.0)	(12382.8)	(2545.7)	(9600.4)	(13268.8)	(4421.2)	(693.0)	(924.5)
...× 2007	1047.8+	14760.2	1519.6	8898.8	19492.1	1850.9	-413.5	-30.7
	(597.5)	(12114.9)	(1210.0)	(8289.2)	(13143.1)	(1935.1)	(809.1)	(925.5)
...× 2008	1250.7+	16600.5	1560.9	12404.7	22462.7	523.7	-65.3	723.0
	(635.9)	(12860.9)	(986.5)	(8205.4)	(14439.6)	(1495.5)	(902.6)	(875.5)
...× 2009	1133.0+	15501.1	2064.2+	10438.6	21134.4	898.2	1394.3	2206.6+
	(602.9)	(12962.5)	(1114.4)	(7895.4)	(14682.5)	(1682.8)	(893.0)	(1202.6)
...× 2010	1353.6+	20091.6	1744.2	14191.3+	26163.1+	176.1	2500.1*	2138.3
	(674.8)	(13745.0)	(1249.7)	(8337.4)	(14917.3)	(1412.3)	(1080.3)	(1324.3)
...× 2011	981.5	17092.4	943.4	10123.1	21616.6	-1340.0	2031.2**	1876.1*
	(644.5)	(13543.6)	(1195.3)	(8548.1)	(14763.4)	(1492.4)	(643.4)	(866.6)
...× 2012	1033.4	19715.2	469.4	11898.1	24482.7	-1313.3	175.2	457.4
	(621.9)	(13991.6)	(1209.2)	(8160.9)	(15592.9)	(1642.6)	(932.8)	(1182.7)
Obs.	4132	1092	2974	2921	913	1942	1141	989
2006-2010 Mean	3317.4	6810.7	2057.6	4387.7	7996.6	2764.5	757.7	734.7
2006-2010 SD	19904.7	36558.9	7271.6	23530.6	39857.9	8714.4	2711.7	2643.5
P-value: joint significance of pretrend test	0.12	3.7e-11	0.0023	0.0013	1.3e-22	0.000018	2.7e-10	1.5e-09

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Excludes governments not reporting hospital-related expenditures. (2) Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA. (3) Covariates include poverty rate (all ages), median income, total population, percent of non-white population, percent of population above age 65, and percent female.

Source: Census of State and Local Governments, 2006-2013

Table A3: Pre-trends: Hospital Charges

	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Romney
Unins2013× 2006	-280.3	-15360.0	-6632.7	-3859.6	-15003.2	-9674.9	850.1	1385.2
	(886.0)	(14967.0)	(6874.6)	(8365.6)	(19385.2)	(10332.6)	(780.1)	(958.1)
...× 2007	-101.9	-8846.4	-5865.9	-3802.5	-6867.9	-10004.4	1254.0*	1354.1
	(895.3)	(10255.6)	(6886.8)	(8286.3)	(14053.8)	(10174.5)	(598.2)	(896.4)
...× 2008	156.4	-9354.3	-4891.7	-1192.0	-6627.0	-7734.5	596.9	1548.7+
	(886.8)	(9882.6)	(7067.5)	(8565.8)	(12010.0)	(10714.6)	(651.2)	(760.2)
...× 2009	332.6	960.3	-5615.0	-2667.9	3174.3	-7887.0	-397.8	-228.9
	(1169.2)	(4622.2)	(7367.0)	(9198.7)	(6448.9)	(10344.9)	(586.2)	(835.9)
...× 2010	-706.3	3869.1	-11208.2	-11247.2	7918.9	-15863.8	-28.2	-746.2
	(1108.1)	(5834.1)	(8548.5)	(10607.5)	(10632.4)	(12240.2)	(486.9)	(826.8)
...× 2011	-271.8	3880.5	-8382.6	-8852.5	10574.1	-11828.2	46.6	-688.3
	(1119.1)	(6807.5)	(8783.6)	(10743.7)	(12427.6)	(12756.7)	(468.3)	(644.2)
...× 2012	-303.7	2141.0	-7427.0	-7591.8	1411.7	-11684.1	531.9	296.4
	(988.2)	(5387.6)	(7656.1)	(9930.0)	(9511.4)	(11644.7)	(727.5)	(761.3)
Unins2013× Expansion × 2006	2877.6+	51159.4+	10455.6	33413.1+	56411.7	14605.9	3583.3	-221.3
	(1681.4)	(27332.8)	(7915.3)	(17891.6)	(33413.3)	(12711.3)	(2282.4)	(2149.4)
...× 2007	2317.4	45502.0*	10029.2	27562.5+	50614.3+	16226.5	793.0	-894.8
	(1403.7)	(21990.8)	(7338.9)	(13782.4)	(26296.2)	(11826.9)	(1810.8)	(1486.8)
...× 2008	2083.1	38747.5+	5836.1	23410.2	42405.8+	7036.2	763.6	-1073.4
	(1526.7)	(21485.6)	(7147.3)	(15099.7)	(24375.9)	(11360.1)	(1753.5)	(1908.7)
...× 2009	626.1	17789.3	4829.1	16663.2	20164.6	4373.0	2252.0	1711.9
	(1579.6)	(16462.0)	(7534.3)	(14860.9)	(18899.1)	(11202.7)	(1977.7)	(1663.6)
...× 2010	1756.3	17166.0	10951.0	24111.9+	16853.4	14744.0	598.9	538.1
	(1502.6)	(17546.4)	(8649.8)	(13486.3)	(20905.7)	(13006.4)	(2032.0)	(1884.9)
...× 2011	653.7	10380.1	6559.1	14840.1	6368.4	7519.1	77.2	-99.2
	(1562.3)	(17519.1)	(8825.6)	(14103.3)	(22021.6)	(13017.5)	(1943.4)	(1769.7)
...× 2012	1109.7	8024.1	7690.3	16794.7	9823.5	10009.1	1083.4	-34.4
	(1475.8)	(17048.6)	(7669.6)	(13678.1)	(21423.4)	(11808.9)	(1642.9)	(1471.3)
Obs.	4132	1092	2974	2921	913	1942	1141	989
2006-2010 Mean	72390.9	128608.1	48247.0	95710.3	150753.6	65400.4	15691.6	15485.7
2006-2010 SD	211837.2	356545.9	97623.2	247847.6	386014.1	116103.2	21661.6	22101.7
P-value: joint significance of pretrend test	0.35	3.0e-11	0.0022	0.0000067	0.0013	0.000031	7.7e-10	1.6e-16

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Excludes governments not reporting hospital-related expenditures. (2) Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA. (3) Covariates include poverty rate (all ages), median income, total population, percent of non-white population, percent of population above age 65, and percent female.

Source: Census of State and Local Governments, 2006-2013

Table A4: Pre-trends: Property Taxes

	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Romney
Unins2013× 2006	1564.9	96340.7	-1054.8	9162.5	124793.5	-1659.2	-171.3	-34.0
	(1222.4)	(62116.2)	(924.8)	(6622.9)	(75470.6)	(1352.4)	(334.7)	(348.9)
...× 2007	1226.6	40483.8	-826.1	3218.8	55580.3+	-1395.3	-77.4	78.7
	(972.9)	(26561.3)	(855.2)	(4004.4)	(32787.4)	(1291.4)	(270.2)	(278.8)
...× 2008	1456.5	35817.2	-688.7	2080.0	44028.4	-1154.4	-26.5	188.4
	(1068.0)	(23732.8)	(802.1)	(4034.3)	(26986.9)	(1143.5)	(303.4)	(362.3)
...× 2009	1499.2	26440.4	95.5	2412.0	38705.2	193.3	-117.9	30.3
	(1054.1)	(24194.0)	(605.5)	(3425.7)	(35329.2)	(913.1)	(274.8)	(298.0)
...× 2010	1612.6	17160.8	791.5	3391.4	13058.3	1158.8	-39.5	70.0
	(1025.8)	(23130.0)	(625.6)	(3329.6)	(27696.5)	(860.3)	(247.3)	(255.1)
...× 2011	728.2	12074.3	524.0	250.1	5242.9	899.9	-118.8	-54.6
	(1058.9)	(21380.2)	(705.5)	(3466.8)	(27945.8)	(1023.8)	(257.6)	(237.3)
...× 2012	876.2	13711.7	258.5	2480.2	17167.2	766.5	-71.7	-29.4
	(918.8)	(15774.1)	(656.4)	(3413.3)	(22223.5)	(952.0)	(252.4)	(258.2)
Unins2013× Expansion × 2006	5168.1	40178.6	3437.8	83737.1	24218.2	8827.7	43.5	-1074.2
	(5366.0)	(98887.6)	(2469.6)	(71499.5)	(114458.7)	(5474.7)	(891.3)	(1425.7)
...× 2007	5532.2	104084.2	6073.4	87223.7	106864.5	14926.7*	-279.7	-1218.4
	(4395.2)	(84313.7)	(3931.0)	(54998.6)	(94820.6)	(7104.9)	(796.6)	(1125.0)
...× 2008	7248.1	131784.8	4593.0	115700.2	146746.8	12562.5	-430.2	-1697.6
	(5652.8)	(98534.9)	(3692.5)	(74497.9)	(113969.2)	(8113.0)	(787.2)	(1318.6)
...× 2009	4781.0	93452.9	3712.4	76568.5	98890.1	11246.8	-234.4	-1185.8
	(4310.1)	(77865.5)	(3753.4)	(52700.9)	(89966.9)	(8439.1)	(737.6)	(1095.0)
...× 2010	1372.8	37466.8	1611.9	33978.2	48983.0	5372.1	-62.8	-644.4
	(4519.6)	(89310.8)	(2294.8)	(55704.2)	(98613.9)	(5119.7)	(528.9)	(739.1)
...× 2011	1332.4	30391.3	422.2	25510.5	44097.6	813.5	373.0	384.2
	(4792.2)	(92556.6)	(3402.0)	(58612.4)	(100612.1)	(8722.0)	(797.1)	(1324.0)
...× 2012	1314.6	14527.3	-1926.3	20621.3	16588.4	-3475.1	197.1	29.7
	(4778.5)	(98858.6)	(5312.6)	(59925.4)	(110105.6)	(11869.7)	(514.9)	(920.0)
Obs.	4132	1092	2974	2921	913	1942	1141	989
2006-2010 Mean	114003.0	330098.9	29713.2	159307.0	391257.5	43102.9	4495.5	4339.7
2006-2010 SD	822747.5	1561739.5	117494.2	975003.5	1701261.1	143577.6	4614.6	4827.8
P-value: joint significance of pretrend test	0.28	9.0e-09	0.0058	0.11	0.00098	0.0000012	2.2e-20	0.000025

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

Note: (1) Excludes governments not reporting hospital-related expenditures. (2) Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA. (3) Covariates include poverty rate (all ages), median income, total population, percent of non-white population, percent of population above age 65, and percent female.

Source: Census of State and Local Governments, 2006-2013

Table A5: Pre-trends: State Inter-Governmental Transfers

	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Romney
Unins2013× 2006	645.0	10512.1+	2561.5+	5811.1**	12899.7*	4129.6*	77.2	-4.17
	(420.9)	(5508.7)	(1343.4)	(1965.5)	(5667.7)	(1796.2)	(92.2)	(67.3)
...× 2007	479.0	8107.5	1899.8	4735.9**	10011.6+	3282.5+	43.6	-40.9
	(322.6)	(4882.8)	(1166.2)	(1742.7)	(5407.0)	(1725.7)	(58.8)	(55.3)
...× 2008	492.2	7519.7+	1647.8	4211.2*	8141.1*	2790.9	36.8	4.55
	(305.9)	(3926.4)	(1189.9)	(1756.7)	(3982.1)	(1817.1)	(50.7)	(43.4)
...× 2009	445.6	7428.9*	1575.1	4018.6*	7963.5+	2794.3	65.9	23.4
	(295.6)	(3537.1)	(1269.6)	(1736.9)	(3993.8)	(1873.8)	(51.2)	(35.4)
...× 2010	342.8	5398.3+	1471.7	3236.7+	5801.3+	2444.5	95.3	22.0
	(293.7)	(3163.8)	(1291.7)	(1758.3)	(3037.3)	(1827.2)	(70.2)	(42.1)
...× 2011	210.1	4865.0	1365.6	2644.1	4688.4	2173.1	-18.8	15.8
	(311.9)	(2987.2)	(1326.5)	(1764.1)	(2966.0)	(1851.3)	(62.2)	(42.8)
...× 2012	186.3	1916.0	1119.1	2368.3	796.0	1781.8	7.00	12.3
	(312.8)	(3118.0)	(1334.2)	(1793.1)	(3437.6)	(1859.2)	(58.9)	(38.3)
Unins2013× Expansion × 2006	-1273.3	-14881.5	-5303.7+	-16392.9*	-19566.7+	-7928.1	14.7	-259.4
	(860.7)	(10029.6)	(2949.6)	(7883.0)	(11544.3)	(6020.6)	(319.6)	(163.3)
...× 2007	-598.7	-3728.3	-4418.8+	-7531.2+	-5283.7	-7112.3	475.9	114.5
	(475.9)	(4586.7)	(2566.9)	(3814.9)	(5611.4)	(5452.6)	(525.1)	(180.9)
...× 2008	-782.2	-6479.1	-4516.3+	-8511.6+	-7634.0	-8220.5	415.0	164.5
	(530.1)	(4321.2)	(2430.1)	(4790.9)	(5132.9)	(4987.9)	(518.8)	(281.0)
...× 2009	-846.5	-9975.4*	-4478.6+	-10972.5*	-10929.3+	-7899.7+	-195.2	-173.5+
	(514.0)	(4619.2)	(2221.0)	(4813.2)	(5395.0)	(4506.7)	(252.7)	(94.8)
...× 2010	-154.8	1072.9	-5562.8*	-1430.2	1247.1	-11083.7+	-235.7	-40.3
	(515.4)	(5217.7)	(2616.1)	(5308.9)	(6700.3)	(5544.4)	(307.1)	(65.2)
...× 2011	-7.49	-773.1	-3025.6	-158.4	-158.4	-5486.6	-60.3	110.1
	(585.0)	(4730.1)	(1918.1)	(6849.8)	(6191.2)	(4056.0)	(328.9)	(100.0)
...× 2012	-255.0	-320.2	-3062.9	-2313.6	1110.0	-5593.8	-270.2	-166.5
	(456.5)	(4321.6)	(2083.0)	(4808.9)	(5061.6)	(4121.7)	(322.3)	(236.9)
Obs.	4132	1092	2974	2921	913	1942	1141	989
2006-2010 Mean	15969.3	47805.6	4366.7	22384.6	56696.1	6461.1	486.7	414.4
2006-2010 SD	94406.8	171198.9	33268.9	111655.5	185859.6	40998.4	1958.2	1851.1
P-value: joint significance of pretrend test	0.67	0.000000037	1.6e-25	0.000000090	7.5e-14	1.2e-48	2.8e-11	0.0027

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Excludes governments not reporting hospital-related expenditures. (2) Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA. (3) Covariates include poverty rate (all ages), median income, total population, percent of non-white population, percent of population above age 65, and percent female.

Source: Census of State and Local Governments, 2006-2013

48

Table A6: Pre-trends: Federal Inter-Governmental Transfers

	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Romney
Unins2013× 2006	58.4	-397.7	661.5+	134.7	-183.0	841.7+	-47.8	6.29
	(59.4)	(555.1)	(344.8)	(480.6)	(855.1)	(427.3)	(55.1)	(68.7)
...× 2007	77.1	-117.5	495.2	218.2	-79.7	715.7+	-41.3	-34.0
	(63.2)	(453.2)	(332.1)	(477.4)	(632.3)	(392.9)	(45.5)	(60.4)
...× 2008	86.1	-78.5	438.1	219.9	548.3	563.8	-52.9	-50.3
	(72.1)	(531.7)	(338.2)	(464.5)	(475.7)	(439.1)	(48.6)	(64.7)
...× 2009	94.3	-195.0	529.0	565.1	24.9	712.5+	-42.5	-39.7
	(65.3)	(447.2)	(325.3)	(466.7)	(476.0)	(385.1)	(43.4)	(58.3)
...× 2010	17.6	39.1	563.3+	305.5	619.8	756.7+	-29.5	-16.0
	(74.1)	(554.8)	(332.2)	(441.3)	(595.9)	(385.2)	(47.0)	(60.2)
...× 2011	21.8	-490.6	660.0*	-107.8	-38.7	883.2*	-31.7	-7.41
	(59.9)	(520.0)	(303.0)	(462.9)	(448.0)	(350.9)	(48.2)	(69.2)
...× 2012	59.2	-478.0	463.1	351.4	112.3	715.2+	-61.7	-38.0
	(53.3)	(622.1)	(326.6)	(450.7)	(774.3)	(373.3)	(48.1)	(66.6)
Unins2013× Expansion × 2006	-139.4	139.0	-963.9	-1251.1	88.1	-678.7	106.0	4.58
	(94.8)	(699.5)	(950.1)	(1197.2)	(1066.8)	(1593.4)	(80.6)	(73.5)
...× 2007	-122.4	300.5	-1011.6	-856.4	503.2	-1254.0	57.7	43.2
	(82.1)	(572.4)	(751.4)	(879.2)	(853.5)	(1360.8)	(59.1)	(68.1)
...× 2008	-109.3	122.4	-0.96	-445.1	-325.2	506.4	144.1	131.8
	(91.0)	(781.2)	(628.3)	(841.6)	(854.2)	(1112.9)	(87.7)	(99.7)
...× 2009	-111.7	200.5	-221.8	-775.2	121.0	-46.3	107.1	80.8
	(80.6)	(603.7)	(588.8)	(785.5)	(750.3)	(980.0)	(72.5)	(76.0)
...× 2010	-23.8	116.1	-273.6	-399.7	-326.0	-95.5	69.0	54.9
	(93.3)	(859.3)	(591.2)	(865.0)	(1108.1)	(1078.8)	(84.6)	(87.4)
...× 2011	-18.4	675.7	-567.0	75.9	334.9	-639.1	27.9	-5.62
	(86.4)	(753.3)	(611.7)	(892.5)	(902.9)	(1236.2)	(61.1)	(78.9)
...× 2012	-69.8	540.0	-272.8	-535.4	45.8	-95.0	20.3	1.35
	(80.9)	(965.3)	(557.4)	(894.9)	(1286.5)	(1040.6)	(69.2)	(79.3)
Obs.	4132	1092	2974	2921	913	1942	1141	989
2006-2010 Mean	1312.1	2682.4	761.8	1837.1	3160.3	1140.0	47.5	51.8
2006-2010 SD	11389.5	19316.8	6414.7	13510.9	21086.2	7909.9	288.8	305.9
P-value: joint significance of pretrend test	0.65	0.00026	0.000063	0.052	1.0e-19	0.000015	0.000000034	0.00000065

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

Note: (1) Excludes governments not reporting hospital-related expenditures. (2) Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA. (3) Covariates include poverty rate (all ages), median income, total population, percent of non-white population, percent of population above age 65, and percent female.

Source: Census of State and Local Governments, 2006-2013

Table A7: Pre-Expansion County-level Demographics

	Pre-expansion:2006-2013		
	Non-expansion	Expansion	Diff.
Poverty Rate	0.16	0.13	0.017***
	(0.062)	(0.049)	
Median household income	42760.1	48754.1	-5187.7***
	(9974.6)	(12644.9)	
Total population	134569.5	367854.3	-296049.4***
	(381509.6)	(1106857.4)	
Percent of County Non-White [0-100]	18.4	11.1	3.82***
	(18.5)	(12.7)	
Percent of County Above 65 [0-100]	14.8	15.8	-0.10***
	(3.78)	(3.89)	
Percent of County Female [0-100]	50.3	50.2	0.14***
	(1.98)	(1.67)	
Obama majority (2012)	0.19	0.41	-0.18***
	(0.39)	(0.49)	
Rural [RUCC code 7-9]	0.27	0.31	0.0058+
	(0.45)	(0.46)	
Obs.	2464	1714	69375

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Excludes governments not reporting hospital-related expenditures. (2) Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA.

Source: Census of State and Local Governments, 2006-2013

Appendix. 2   Robustness Checks for Local Government Results

Table A8: Effect of Medicaid Expansion on Selected Outcomes Among Local Governments Reporting Hospital Expenditures, Excluding Demographic Controls

	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Obama	Rural/Romney
Total Hospital Expenditure									
Post × Qt4Unins2013	36551.9*	-630.6	35727.3	54161.2**	38928.8*	61339.5*	-13770.8+	-32143.7*	-17856.7+
	(14687.7)	(17120.5)	(21918.2)	(18857.0)	(19747.0)	(31216.3)	(7295.6)	(16063.4)	(10782.9)
..× Expansion	35693.1	310449.1	-42694.9	100986.6	369967.5	-68510.4+	11221.8	2254.2	15272.6
	(68654.9)	(205235.1)	(26753.0)	(118719.4)	(230766.5)	(40510.3)	(8638.5)	(20960.7)	(11965.9)
Hospital Construction									
Post × Qt4Unins2013	2439.7*	-2262.8*	1696.7	3279.1*	-164.1	2434.0	-395.5	-1622.0	8.17
	(1124.3)	(878.1)	(1650.2)	(1472.7)	(810.8)	(2382.5)	(585.2)	(1159.1)	(777.5)
..× Expansion	-5294.7+	-14250.4	-434.9	-7987.3+	-17164.3	-405.4	586.8	1027.4	275.6
	(2757.2)	(10916.2)	(1842.8)	(4605.1)	(11834.3)	(2765.8)	(688.2)	(1460.7)	(875.4)
Hospital Charges									
Post × Qt4Unins2013	11312.6*	1428.1	11775.2	15929.0*	-53.6	17624.7	-2842.5	-13153.0*	-1375.5
	(5507.9)	(4381.6)	(7535.9)	(7329.1)	(5227.5)	(11006.0)	(2552.3)	(5795.0)	(3786.3)
..× Expansion	-4785.5	31852.7	-9550.7	6657.3	52772.5	-17844.8	4638.9	16008.3*	3138.5
	(19726.6)	(62999.4)	(8889.9)	(33798.8)	(70975.2)	(13781.6)	(2930.4)	(6176.1)	(4131.8)
Property tax									
Post × Qt4Unins2013	5452.4**	10140.2+	3850.1+	7194.9**	7945.0	5518.6+	239.3	920.0	165.8
	(1912.3)	(5526.1)	(1981.1)	(2529.0)	(7135.9)	(2844.2)	(282.0)	(698.8)	(332.0)
..× Expansion	-5591.1	-26872.0	-4724.6	-6622.0	-21755.6	-11085.3*	4967.1+	-1325.4	5876.5+
	(13950.8)	(42834.5)	(3373.7)	(24406.9)	(48745.9)	(5119.6)	(2754.8)	(976.2)	(3141.0)
Obs.	5077	1353	3646	3548	1136	2332	1447	146	1265

Note: (1) Post period: after 1/1/2014. (2) $Qt4Unins2013$ equals one if the local government is in a county ranked in the top quartile of low-income uninsured rate of 2013. The sample of the distribution of the uninsured rate is defined by the column title. (3) Excludes governments without hospital-related expenditures. (4) Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA. (5) All specifications include county fixed effects, year fixed effects, and state-specific time trends.

Source: Census of State and Local Governments, 2006-2015

Table A9: Effect of Medicaid Expansion on Selected Outcomes Among Local Governments Reporting Hospital Expenditures, Excluding 2013

	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Obama	Rural/Romney
Total Hospital Expenditure									
Post × Qt4Unins2013	9508.7	-154068.4***	28825.1	20032.9	-141992.3***	56859.2+	-18193.6*	-29897.3***	-22815.8*
	(16674.7)	(37124.3)	(23326.5)	(22055.4)	(41335.6)	(33519.9)	(7904.9)	(8709.6)	(11381.1)
..× Expansion	13684.8	353898.8**	-55933.5*	58157.8	407700.6**	-99435.9*	14404.1	4127.9	17547.5
	(52387.1)	(121578.1)	(27094.3)	(89275.7)	(132207.2)	(40749.2)	(8815.2)	(14050.8)	(11997.8)
Hospital Construction									
Post × Qt4Unins2013	986.3	-7871.8**	1454.6	1311.1	-7998.1*	2220.3	-456.3	674.0	-203.1
	(1137.3)	(2836.4)	(1572.1)	(1509.6)	(3424.8)	(2261.3)	(606.7)	(953.9)	(826.9)
..× Expansion	-5758.0*	-10271.4	-764.2	-8823.9+	-11157.9	-1271.2	713.1	-2338.2	519.9
	(2844.4)	(10970.3)	(1769.5)	(4681.7)	(11358.1)	(2608.1)	(728.0)	(1553.4)	(931.7)
Hospital Charges									
Post × Qt4Unins2013	5742.2	-36269.3**	12532.9	8283.9	-54019.4***	19584.8+	-3755.9	-11391.5***	-2434.7
	(6143.4)	(11841.2)	(8003.3)	(8308.8)	(13470.7)	(11750.8)	(2601.3)	(3243.3)	(3845.3)
..× Expansion	-8663.5	46652.5	-12379.0	3086.9	78023.8	-22117.0	5736.5+	16285.1**	3878.7
	(16587.3)	(44312.3)	(9363.5)	(27638.9)	(48239.5)	(14601.1)	(2923.4)	(5199.3)	(4094.3)
Property tax									
Post × Qt4Unins2013	1885.2	-32972.0	1305.2	4882.1	-20184.9	2171.2	84.1	435.3	-52.2
	(3138.8)	(22928.3)	(1934.7)	(4925.9)	(32690.2)	(2771.3)	(327.5)	(704.0)	(395.9)
..× Expansion	-16639.4	-3663.1	-7109.2	-31412.5	-32548.2	-17858.4*	5388.9*	-464.3	6506.2*
	(12618.2)	(43481.7)	(4792.0)	(21032.8)	(54189.6)	(7990.9)	(2662.9)	(920.7)	(3041.9)
Obs.	4651	1229	3354	3256	1031	2154	1320	133	1154

Note: (1) Post period: after 1/1/2014. (2) $Qt4Unins$2013 equals one if the local government is in a county ranked in the top quartile of low-income uninsured rate of 2013. The sample of the distribution of the uninsured rate is defined by the column title. (3) Excludes governments without hospital-related expenditures. (4) Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA. (5) Covariates include poverty rate (all ages), median income, total population, percent of non-white population, percent of population above age 65, and percent female. (6) All specifications include county fixed effects, year fixed effects, and state-specific time trends. (7) Observations from 2013 are excluded to avoid bias from anticipatory effects among local governments.

Source: Census of State and Local Governments, 2006-2012, 2014-2015

Table A10: Effect of Medicaid Expansion on Selected Outcomes Among Local Governments Reporting Hospital Expenditures using Continuous measure of insurance

	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Obama	Rural/Romney
Total Hospital Expenditure									
Post × Unins2013	-211.4	-6022.0+	723.1	416.6	-6079.0+	1830.8	-708.8	-3588.2*	-673.6
	(1134.0)	(3192.0)	(1114.2)	(1650.8)	(3409.8)	(2100.6)	(508.4)	(1467.2)	(584.6)
... × Expansion	1570.7	11158.6	-3625.0*	2550.2	12750.3	-7872.9**	135.0	-1216.4	173.6
	(3492.9)	(10353.3)	(1581.8)	(5386.6)	(11146.5)	(2897.4)	(599.1)	(2841.6)	(671.3)
Hospital Construction									
Post × Unins2013	-83.9	-617.2**	140.9	-54.8	-631.4*	331.9+	-96.4	107.9	-102.5
	(88.0)	(235.1)	(98.4)	(125.7)	(258.6)	(187.1)	(78.5)	(107.9)	(85.8)
... × Expansion	-250.8	-783.0	-107.9	-401.5	-834.7	-286.4	69.5	-472.5+	72.5
	(327.6)	(1177.8)	(139.1)	(508.5)	(1275.1)	(282.0)	(82.9)	(272.8)	(90.1)
Hospital Charges									
Post × Unins2013	299.1	-296.4	778.6	771.4	-477.7	1613.5	-207.7	-1039.1*	-155.6
	(508.9)	(1134.1)	(707.1)	(774.3)	(1194.0)	(1390.7)	(185.8)	(460.7)	(215.6)
... × Expansion	-1526.6	-1861.3	-987.2	-2641.2	-1564.2	-2527.4+	64.8	1569.8	-12.1
	(1099.2)	(3221.0)	(774.8)	(1680.0)	(3450.4)	(1503.8)	(262.1)	(1030.4)	(292.1)
Property tax									
Post × Unins2013	-34.2	-3604.6*	18.3	122.5	-3346.6+	84.3	-22.7	62.8	-31.2
	(291.1)	(1656.2)	(132.6)	(413.7)	(1969.8)	(262.5)	(31.2)	(88.5)	(35.1)
... × Expansion	-7603.4*	-17810.0	-117.8	-12027.2*	-19534.1	-528.5	335.7	-66.6	355.3
	(3471.2)	(12247.2)	(282.8)	(5373.8)	(13265.1)	(563.0)	(207.3)	(160.4)	(223.3)
Obs.	5077	1353	3646	3548	1136	2332	1447	146	1265

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Post period: after 1/1/2014. (2) $Unins2013$ is the uninsured rate at the county level in 2013. (3) Excludes governments without hospital-related expenditures. (4) Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA. (5) Covariates include poverty rate (all ages), median income, total population, percent of non-white population, percent of population above age 65, and percent female. (6) All specifications include county fixed effects, year fixed effects, and state-specific time trends.

Source: Census of State and Local Governments, 2006-2015

Table A11: Effect of Medicaid Expansion on Selected Outcomes Among Local Governments Reporting Hospital Expenditures, Excluding 2013 and Using a Continuous Measure of Uninsurance

	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Obama	Rural/Romney
Total Hospital Expenditure									
Post × Unins2013	-190.6	-7377.2*	818.4	542.7	-7529.4*	2145.6	-854.6	-3810.0*	-868.3
	(1213.9)	(3476.2)	(1198.8)	(1769.8)	(3705.4)	(2248.0)	(559.1)	(1547.5)	(642.1)
... × Expansion	2034.7	12479.3	-3811.5*	3182.7	14139.8	-8284.5**	461.3	-769.1	519.5
	(3761.8)	(11130.1)	(1704.8)	(5757.3)	(11998.3)	(3096.2)	(625.1)	(3153.1)	(701.4)
Hospital Construction									
Post × Unins2013	-82.2	-639.7*	152.9	-48.4	-678.2*	374.4*	-99.9	129.6	-111.7
	(94.1)	(260.1)	(100.3)	(134.6)	(288.4)	(188.9)	(79.1)	(113.9)	(86.1)
... × Expansion	-274.3	-1058.4	-37.9	-431.0	-1114.7	-113.3	75.2	-516.5+	81.6
	(337.9)	(1158.7)	(135.2)	(523.5)	(1258.0)	(262.1)	(83.3)	(290.0)	(90.7)
Hospital Charges									
Post × Unins2013	258.2	-777.5	866.0	752.8	-1033.4	1849.1	-233.2	-1044.1*	-198.2
	(544.0)	(1223.3)	(763.0)	(823.9)	(1290.0)	(1499.2)	(200.3)	(463.7)	(230.0)
... × Expansion	-1714.4	-1735.5	-1070.9	-3050.0+	-1407.8	-2928.1+	293.1	1524.7	232.9
	(1141.3)	(3314.1)	(833.1)	(1728.3)	(3551.5)	(1616.5)	(235.3)	(1006.6)	(264.8)
Property tax									
Post × Unins2013	-80.3	-4063.5*	-35.7	53.3	-3723.1+	-23.4	-17.6	74.1	-25.8
	(324.0)	(1881.6)	(140.2)	(450.8)	(2180.6)	(280.8)	(34.7)	(92.9)	(39.1)
... × Expansion	-8447.1*	-19289.6	-219.2	-13375.2*	-21299.6	-830.7	356.2+	-78.4	378.0+
	(3752.7)	(12793.1)	(295.8)	(5806.4)	(13914.1)	(584.6)	(208.4)	(163.9)	(224.9)
Obs.	4651	1229	3354	3256	1031	2154	1320	133	1154

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Post period: after 1/1/2014. (2) $Unins2013$ is the uninsured rate at the county level in 2013. (3) Excludes governments without hospital-related expenditures. (4) Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA. (5) Covariates include poverty rate (all ages), median income, total population, percent of non-white population, percent of population above age 65, and percent female. (6) All specifications include county fixed effects, year fixed effects, and state-specific time trends. (7) Observations from 2013 are excluded to avoid bias from anticipatory effects among local governments.

Source: Census of State and Local Governments, 2006-2015

Table A12: Effect of Medicaid Expansion on Selected Outcomes Among Local Governments Reporting Hospital Expenditures using Uninsured Rates from 2011-2013

	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Obama	Rural/Romney
Total Hospital Expenditure									
Post × Qt4Unins2013		-71308.8**	-16422.7	-21020.6	-81124.9**	-14731.9	-3439.2	-15522.4+	-1013.2
		(24051.8)	(26359.3)	(19416.6)	(27299.0)	(32206.0)	(8762.6)	(8619.9)	(9834.6)
..× Expansion		56415.5	-32497.9	-84083.3	98678.9	-64817.6+	4124.3	53696.2***	-2251.6
		(104407.1)	(29088.5)	(62947.5)	(145810.9)	(38560.0)	(9387.9)	(10902.1)	(10324.7)
Hospital Construction									
Post × Qt4Unins2013		-3514.4+	1808.0	93.1	-4518.4*	2880.5	246.7	465.6	506.6
		(1857.1)	(1595.2)	(1244.0)	(2230.3)	(2092.1)	(809.7)	(828.5)	(950.2)
..× Expansion		7601.7	-2507.6	563.6	10515.2	-4921.2+	-80.3	367.6	-322.1
		(7669.1)	(1791.7)	(3827.8)	(10678.2)	(2655.5)	(866.6)	(1538.4)	(993.8)
Hospital Charges									
Post × Qt4Unins2013		-19433.0*	-8008.7	-8848.8	-24472.1**	-11590.4	-746.3	-5532.6	574.3
		(8038.4)	(6739.9)	(5428.6)	(9272.3)	(9592.9)	(2665.8)	(3769.5)	(2976.2)
..× Expansion		-25600.2	-2634.3	-42910.1+	-27208.9	-7140.2	37.1	-7799.9+	-1218.7
		(41536.7)	(7690.7)	(22092.0)	(59965.3)	(11771.9)	(3035.9)	(4437.6)	(3388.5)
Property tax									
Post × Qt4Unins2013		-23062.6	2895.2+	6515.4+	-27928.9	3602.1+	62.6	1308.6*	2.98
		(14202.4)	(1664.6)	(3830.1)	(20609.7)	(2130.8)	(274.1)	(627.1)	(302.5)
..× Expansion		-23742.1	-2859.7	-64491.2***	-31174.6	-6915.7	2926.2	-1164.6	3223.7
		(36308.7)	(3118.6)	(18452.2)	(53970.7)	(5601.2)	(1982.4)	(776.9)	(2206.8)
Obs.	5077	1353	3646	3548	1136	2332	1447	146	1265

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Post period: after 1/1/2014. (2) Excludes governments that appear for only one year over the course of the panel, that only appear during Census years, or that have no hospital-related expenditures. Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA. (3) Covariates include poverty rate (all ages), median income, total population, percent of non-white population, percent of population above age 65, and percent female.

Source: Census of State and Local Governments, 2006-2015

Table A13: Effect of Medicaid Expansion on Selected Outcomes Among Local Governments Reporting Hospital Expenditures (Logged)

	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Obama	Rural/Romney
Total Hospital Expenditure									
Post × Qt4Unins2013	0.091	-0.33	0.35	0.13	-0.20	0.50	0.62	-4.50*	0.22
	(0.34)	(0.59)	(0.44)	(0.37)	(0.61)	(0.50)	(0.69)	(2.08)	(0.88)
..× Expansion	-0.83	0.59	-0.53	-1.08	0.70	-1.49	-0.46	4.36+	-0.37
	(0.57)	(0.70)	(0.75)	(0.76)	(0.70)	(1.04)	(0.97)	(2.30)	(1.16)
Hospital Construction									
Post × Qt4Unins2013	0.64+	-1.95***	0.71	0.67	-0.33	0.55	0.75	-0.11	1.07
	(0.36)	(0.58)	(0.45)	(0.44)	(0.61)	(0.58)	(0.63)	(0.94)	(0.81)
..× Expansion	-1.07+	3.29**	-1.03	-1.22	2.06+	-1.04	-0.39	-1.46	-1.40
	(0.60)	(1.07)	(0.68)	(0.80)	(1.13)	(0.91)	(1.02)	(1.32)	(1.15)
Hospital Charges									
Post × Qt4Unins2013	0.45	1.10	0.12	0.72+	1.22	0.39	0.23	-4.28*	-0.26
	(0.34)	(0.86)	(0.40)	(0.37)	(0.85)	(0.43)	(0.70)	(2.00)	(0.88)
..× Expansion	-1.04+	-0.72	-0.25	-1.22+	-0.71	-0.70	-0.35	6.26**	-0.21
	(0.54)	(0.95)	(0.68)	(0.69)	(0.95)	(0.93)	(1.03)	(2.23)	(1.21)
Property tax									
Post × Qt4Unins2013	-0.059	0.043	0.41+	-0.093	0.029	0.60+	-0.040	0.16	-0.11
	(0.065)	(0.032)	(0.22)	(0.086)	(0.043)	(0.31)	(0.068)	(0.16)	(0.100)
..× Expansion	-0.21	-0.025	-0.90**	-0.31+	0.032	-1.54***	0.047	-0.23	0.13
	(0.16)	(0.060)	(0.32)	(0.18)	(0.071)	(0.44)	(0.27)	(0.42)	(0.29)
Obs.	5077	1353	3646	3548	1136	2332	1447	146	1265

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Post period: after 1/1/2014. (2) Excludes governments that appear for only one year over the course of the panel, that only appear during Census years, or that have no hospital-related expenditures. Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA. (3 Covariates include poverty rate (all ages), median income, total population, percent of non-white population, percent of population above age 65, and percent female.

Source: Census of State and Local Governments, 2006-2015

Table A14: Effect of Medicaid Expansion on Selected Outcomes Among Local Governments Reporting Hospital Expenditures, Excluding States that Expanded Prior to 2014

	Total Hospital Expenditure								
	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Obama	Rural/Romney
Post × Qt4Unins2013	-3371.1	-114905.2*	-4507.8	7016.4	-132826.1	6547.9	-15826.6*	-28684.3**	-19356.9+
	(15218.4)	(49080.8)	(17870.7)	(22530.6)	(85949.1)	(27592.0)	(7475.4)	(8480.6)	(10781.0)
..× Expansion	-22973.8	156236.7*	-21635.4	-37787.1	177947.3*	-53962.6	12141.1	2917.1	14356.8
	(21266.0)	(63963.1)	(21932.3)	(35308.0)	(88977.0)	(34755.0)	(8533.0)	(12880.5)	(11647.2)
	Hospital Construction								
Post × Qt4Unins2013	1492.2	-14246.9**	1830.6	2500.4	-19396.7*	3033.7	-444.1	370.6	-145.5
	(1448.4)	(4925.0)	(1952.9)	(2195.2)	(7799.8)	(3195.5)	(601.5)	(945.5)	(809.6)
..× Expansion	-3203.2+	754.1	-1880.1	-5333.3*	3908.7	-3689.3	652.9	-1972.3	402.4
	(1680.5)	(6427.7)	(2069.1)	(2662.8)	(8120.9)	(3342.7)	(717.8)	(1489.5)	(907.1)
	Hospital Charges								
Post × Qt4Unins2013	-2147.7	-18033.7	-3612.5	-805.1	-57293.7**	-5087.1	-3251.0	-11515.3***	-1773.5
	(3303.3)	(11353.4)	(4231.7)	(4937.6)	(18513.0)	(6562.0)	(2555.7)	(3196.0)	(3785.5)
..× Expansion	-11401.2+	-28144.7	2877.4	-15261.7	-573.9	-1157.0	4875.7+	16617.6**	2914.5
	(6038.2)	(18799.3)	(5918.9)	(9816.3)	(23743.4)	(9692.7)	(2912.6)	(5125.4)	(4069.0)
	Property tax								
Post × Qt4Unins2013	661.5	-114139.8*	3839.2*	1085.9	-230005.5*	6348.0*	100.0	358.0	84.4
	(2898.4)	(48655.3)	(1924.2)	(5550.0)	(95908.6)	(3063.6)	(311.5)	(669.4)	(380.4)
..× Expansion	-20042.6*	-8203.3	-3179.5	-38436.0*	65620.4	-9894.2**	5151.4+	-386.3	6063.2*
	(9284.6)	(60335.3)	(2587.9)	(17316.2)	(96005.1)	(3264.4)	(2715.2)	(888.0)	(3085.9)
Obs.	4608	1190	3347	3179	977	2122	1358	144	1185

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Post period: after 1/1/2014. (2) Excludes governments with no hospital-related expenditures. (3) Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA, and before 2014: CA, CT, DC, MN, NJ, and WA. (4) Covariates include poverty rate (all ages), median income, total population, percent of non-white population, percent of population above age 65, and percent female.

Source: Census of State and Local Governments, 2006-2015

Table A15: Effect of Medicaid Expansion on Health and Non-Health/Non-Hospital Expenditures Among Local Governments Reporting Hospital Expenditures

	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Obama	Rural/Romney
Health Expenditures									
Post × Qt4Unins2013	-6602.4**	-10839.4+	-4575.0+	-9080.5**	-12620.5+	-6695.7+	35.1	-191.1*	-19.3
	(2140.7)	(6044.5)	(2388.0)	(2931.2)	(7521.9)	(3518.4)	(78.2)	(95.0)	(113.7)
..× Expansion	13231.1	-25970.2	8160.1*	24835.2	-22595.1	13442.1*	-34.2	432.2**	75.2
	(9163.3)	(29691.6)	(3355.1)	(15395.9)	(31806.2)	(5568.5)	(104.0)	(157.4)	(156.6)
Total Expenditures, excl. Hospitals/Health									
Post × Qt4Unins2013	-1801.7	136236.4**	-19066.2	-6019.9	156041.7*	-38071.1	11783.3*	21150.0**	16319.8*
	(14072.3)	(51844.3)	(17219.1)	(18535.9)	(62602.8)	(24706.1)	(5432.5)	(6410.3)	(7862.4)
..× Expansion	-104878.0	-590200.0**	22185.8	-197406.5	-691239.9**	37683.7	-8346.2	4869.2	-12497.9
	(83819.0)	(209387.9)	(21550.4)	(145218.2)	(237814.4)	(33764.8)	(6486.3)	(12105.8)	(8772.7)
Obs.	5077	1353	3646	3548	1136	2332	1447	146	1265

$+ \ p < 0.1$, $* \ p < 0.05$, $** \ p < 0.01$, $*** \ p < 0.001$. Robust standard errors in parentheses.

Note: (1) Post period: after 1/1/2014. (2) Excludes governments with no hospital-related expenditures. (3) Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA. (4) Covariates include poverty rate (all ages), median income, total population, percent of non-white population, percent of population above age 65, and percent female. (5) "Health" expenditures include public health administration, public education, vital statistics, health-related inspection and regulation, sanitary engineering, environmental health activities. It also includes ambulance transportation, community nursing, and vaccines NOT already covered by the fire department, school health services, alcohol and drug prevention and rehabilitation programming, federal Women, Infants, and Children program, Food and Drug Administration, and the Environmental Protection Agency.

Source: Census of State and Local Governments, 2006-2015

Appendix. 3   Hospital Sample Definition

Hospital Address

Medicare Cost Reports list either the site of care or the billing address of the hospital, which are not necessarily the same location. Further, hospital names listed in the reports are either the name of the specific facility or the name of the chain that owns that specific facility. Therefore, we use hospital identification numbers to combine Medicare Cost Report files with the Centers for Medicare & Medicaid Services Provider of Service Files to verify. These files are a consensus of all providers certified to bill Medicaid and Medicare and are considered to be the universe of hospitals.

Since addresses provided in the Medicare Cost Report Data could refer to either the site where hospital invoices are processed or the site of the hospital itself, we confirm location by scraping hospital name, address, and coordinates from the Google API database. We then geo-code hospital locations to observe their position within and around local government boundaries.

Hospital Type

Medicare Cost Reports have two variables which indicate the hospital type. The first indicator is based on the assigned provider number, which is constant over time. This measure may be prone to error because facilities could, in theory, change their firm type and not adjust their provider number. The most likely type of transition is that a hospital is certified as a short-term acute-care hospital initially and then its competitors slowly exit the market, rendering the facility eligible to become a critical access hospital. To obtain a new number, the facility would have to allow its current Medicare certification to lapse for 6 months and then reapply for a new number. Given that Medicare is a valuable revenue source for hospitals, this is rarely done.

The second indicator of hospital type is a field that is filled out annually by the hospital on the S-2 form. Whereas the first measure suffers from mis-identifying hospitals that change types, the second measure suffers from implausible inconsistency over time. In some cases, a hospital is marked as a short-term hospital one year, a psychiatric hospital the next year, and a short-term hospital the year after that. This inconsistency arises because the Medicare Cost Report data is check for validity of financial measures related to internal tracking within the Centers for Medicaid and Medicare Services, not necessarily data analysis. However, as the most consistent census of hospitals, this data is the standard for evaluating hospitals in the US.

Further complicating cross-validation across these two measures is the fact that hos-

pital categories do not necessarily match. The classification based on provider numbers separately identifies hospitals as short-term acute-care, long-term care, pediatric, psychiatric, critical access, rehabilitative, or other. The second measure additionally separates out cancer hospitals, religious non-medical healthcare institutions, and alcohol and drug centers, but does not identify critical access hospitals.

To reconcile these differences in hospital type, we include any hospital that is identified as a short-term acute-care or a critical access hospital by the provider number or as a short-term acute-care hospital by the S-2 form. We exclude hospitals that were not identified as a short-term acute-care hospital at any point by either measure, excluding 121 hospital-year observations from 2006 to 2014. 431 hospital-years did not match to a zip code.

Possibility of Sample Selection Bias

Previous literature has documented changes in hospital utilization following Medicaid expansion in selected states (Nikpay et al., 2015; Hempstead and Cantor, 2016). While *ex-ante* we cannot identify how the sample selection by COGs could be correlated with characteristics of hospitals differentially affected by the expansion, we compare trends in Medicaid utilization among in-sample hospitals and the universe of hospitals in the US (Figure B1 and Figure B2). The trends appear similar.

Figure B1: Medicaid Outpatient Visits

(a) In-Sample Hospitals   (b) All Hospitals
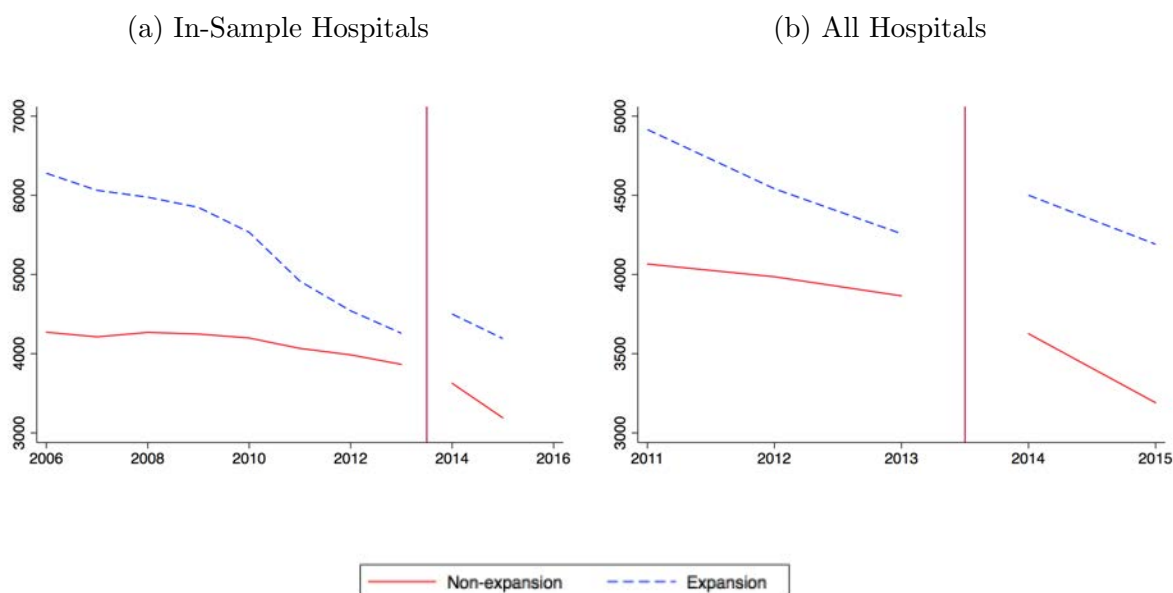
Source: Medicare Cost Report, 2006-2015

Figure B2: Medicaid Inpatient Stays

(a) In-Sample Hospitals   (b) All Hospitals
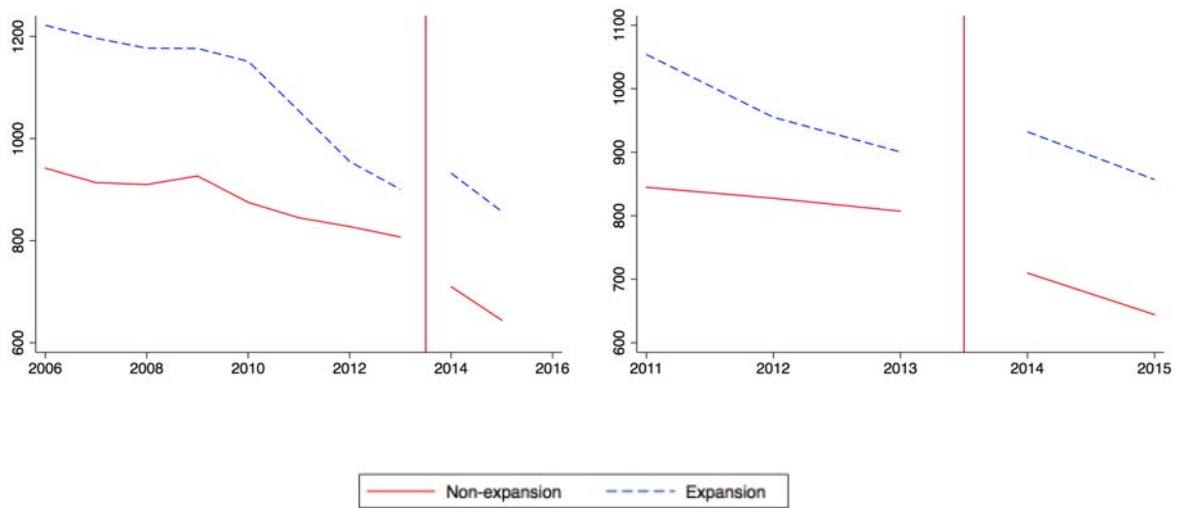
Source: Medicare Cost Report, 2006-2015

Appendix. 4   Hospital Analysis: Robustness Checks

Table B13: Pre-trends: Hospital Operating Margins

	Hospital Operating margin							
	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Romney
Unins2013× 2006	-0.0023	-0.0051	-0.00079	-0.0016	0.0051	-0.0027	-0.0023	-0.0023
	(0.0023)	(0.0067)	(0.0036)	(0.0048)	(0.0095)	(0.0029)	(0.0097)	(0.0032)
...× 2007	0.0063	0.030	0.00057	0.011	0.026	0.0048	0.049	-0.0097+
	(0.0080)	(0.034)	(0.0072)	(0.0096)	(0.020)	(0.011)	(0.050)	(0.0052)
...× 2008	0.0035	-0.0048	0.011	0.0086	0.026	0.0015	-0.0028	0.0050
	(0.0037)	(0.0068)	(0.0074)	(0.010)	(0.022)	(0.0035)	(0.0099)	(0.0049)
...× 2009	-0.0036	-0.0062	-0.0042	-0.0053	-0.0077	-0.0025	-0.0050	-0.00068
	(0.0031)	(0.0074)	(0.0060)	(0.0082)	(0.017)	(0.0031)	(0.011)	(0.0042)
...× 2010	-0.0022	-0.0063	0.00026	0.0024	0.0099	-0.0038	-0.0049	-0.0017
	(0.0021)	(0.0068)	(0.0029)	(0.0040)	(0.0079)	(0.0028)	(0.0099)	(0.0029)
...× 2011	0.00022	-0.0077	0.0042	0.0048	0.014	-0.0016	-0.0063	0.0020
	(0.0027)	(0.0077)	(0.0041)	(0.0077)	(0.016)	(0.0028)	(0.011)	(0.0024)
...× 2012	-0.00090	-0.0036	-0.00012	-0.0017	0.0023	-0.00085	-0.0015	-0.00032
	(0.0021)	(0.0069)	(0.0031)	(0.0050)	(0.0097)	(0.0024)	(0.0099)	(0.0021)
Unins2013× Expansion × 2006	0.0029	0.0074	-0.0021	0.0030	-0.0040	0.0037	0.0060	-0.0011
	(0.0025)	(0.0068)	(0.0043)	(0.0054)	(0.011)	(0.0032)	(0.0098)	(0.0038)
...× 2007	-0.0053	-0.028	0.0013	-0.0086	-0.021	-0.0033	-0.046	0.012
	(0.0081)	(0.034)	(0.0090)	(0.0099)	(0.021)	(0.011)	(0.050)	(0.0085)
...× 2008	-0.0036	0.0071	-0.016+	-0.0073	-0.023	-0.0019	0.0065	-0.012+
	(0.0039)	(0.0069)	(0.0084)	(0.011)	(0.023)	(0.0040)	(0.010)	(0.0066)
...× 2009	0.0048	0.0087	0.0021	0.0053	0.011	0.0040	0.0088	-0.0024
	(0.0033)	(0.0074)	(0.0064)	(0.0086)	(0.019)	(0.0034)	(0.011)	(0.0047)
...× 2010	0.0037	0.0092	-0.0021	-0.0016	-0.0082	0.0059+	0.0092	-0.00032
	(0.0024)	(0.0069)	(0.0038)	(0.0050)	(0.010)	(0.0030)	(0.010)	(0.0036)
...× 2011	0.00050	0.010	-0.0077	-0.0052	-0.016	0.0028	0.010	-0.0061+
	(0.0029)	(0.0078)	(0.0047)	(0.0082)	(0.017)	(0.0031)	(0.011)	(0.0032)
...× 2012	0.0045	0.0049	0.0073	0.014	0.023	0.0021	0.0038	-0.00072
	(0.0036)	(0.0070)	(0.0087)	(0.014)	(0.028)	(0.0028)	(0.010)	(0.0030)
Obs.	32349	12300	20009	5974	4998	26352	11325	15003
2006-2010 Mean	-0.045	-0.048	-0.043	-0.086	-0.094	-0.035	-0.048	-0.026
2006-2010 SD	0.73	0.78	0.71	1.07	1.17	0.63	0.81	0.46
P-value: joint significance of pretrend test	0.76	0.38	0.79	0.96	0.93	0.88	0.68	0.47

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Controls for hospital size. Includes year, state, and hospital fixed effects, as well as state-specific time trends. (2) There were too few hospitals in Rural/Obama areas to calculate pre-trends.

Source: Medicare Cost Reports, 2006-2013

Table B14: Pre-trends: Hospital Profit Margins

				Hospital Profit Margin				
	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Romney
Unins2013× 2006	-0.0044	-0.0067	-0.0034	0.00086	0.017**	-0.0081+	-0.00014	-0.013*
	(0.0035)	(0.0062)	(0.0044)	(0.0061)	(0.0055)	(0.0043)	(0.0070)	(0.0056)
...× 2007	-0.0057+	-0.0098	-0.0057	-0.0031	0.013**	-0.0081*	-0.0019	-0.015**
	(0.0034)	(0.0061)	(0.0041)	(0.0062)	(0.0050)	(0.0040)	(0.0064)	(0.0053)
...× 2008	-0.0013	-0.0043	-0.0019	0.0037	0.016**	-0.0060	0.00025	-0.012*
	(0.0032)	(0.0057)	(0.0040)	(0.0058)	(0.0050)	(0.0038)	(0.0064)	(0.0050)
...× 2009	-0.0028	-0.0057	-0.0057	0.0021	0.0091+	-0.0071*	-0.0025	-0.014**
	(0.0030)	(0.0051)	(0.0039)	(0.0054)	(0.0051)	(0.0036)	(0.0055)	(0.0049)
...× 2010	-0.0028	-0.0039	-0.0052	0.0043	0.0083+	-0.0069+	-0.0028	-0.011*
	(0.0031)	(0.0052)	(0.0039)	(0.0053)	(0.0048)	(0.0037)	(0.0057)	(0.0051)
...× 2011	0.00035	0.0014	-0.0012	0.0058	0.0042	-0.0013	0.0013	-0.0030
	(0.0031)	(0.0055)	(0.0040)	(0.0057)	(0.0053)	(0.0038)	(0.0060)	(0.0050)
...× 2012	0.00040	0.0011	0.0019	0.0026	0.0035	-0.00051	0.00053	0.00086
	(0.0034)	(0.0058)	(0.0043)	(0.0059)	(0.0050)	(0.0041)	(0.0064)	(0.0055)
Unins2013× Expansion × 2006	0.0059	0.024	-0.012	0.00016	-0.0071	0.012	0.030	-0.0077
	(0.0097)	(0.016)	(0.0080)	(0.0071)	(0.0085)	(0.016)	(0.026)	(0.011)
...× 2007	0.0076	0.027+	-0.0081	0.0058	0.00022	0.011	0.031	-0.0048
	(0.0097)	(0.016)	(0.0077)	(0.0071)	(0.0080)	(0.016)	(0.026)	(0.010)
...× 2008	0.0090	0.029+	-0.0076	-0.00097	-0.0019	0.018	0.042	-0.0022
	(0.0097)	(0.016)	(0.0076)	(0.0067)	(0.0078)	(0.016)	(0.026)	(0.010)
...× 2009	0.010	0.032*	-0.0091	-0.0022	0.0065	0.018	0.046+	-0.0086
	(0.0096)	(0.015)	(0.0075)	(0.0066)	(0.0085)	(0.016)	(0.026)	(0.0100)
...× 2010	0.013	0.027+	-0.0021	-0.0048	-0.0030	0.024	0.042+	0.0020
	(0.0095)	(0.015)	(0.0073)	(0.0061)	(0.0072)	(0.015)	(0.025)	(0.0099)
...× 2011	0.010	0.022	-0.0039	-0.0077	-0.0012	0.020	0.038	-0.0019
	(0.0095)	(0.015)	(0.0075)	(0.0067)	(0.0079)	(0.015)	(0.025)	(0.010)
...× 2012	0.012	0.022	-0.00099	-0.0036	-0.0039	0.022	0.040	0.0011
	(0.0096)	(0.015)	(0.0078)	(0.0069)	(0.0077)	(0.015)	(0.025)	(0.010)
Obs.	32781	12584	20159	6017	5030	26741	11594	15121
2006-2010 Mean	1.72	1.96	1.58	0.78	0.73	1.94	2.03	1.86
2006-2010 SD	1.74	1.55	1.83	0.87	0.82	1.81	1.56	1.98
P-value: joint significance of pretrend test	0.14	0.23	0.057	0.58	0.000034	0.038	0.85	0.000044

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Controls for hospital size. Includes year, state, and hospital fixed effects, as well as state-specific time trends. (2) There were too few hospitals in Rural/Obama areas to calculate pre-trends.

Source: Medicare Cost Reports, 2006-2013

Table B15: Pre-trends: Hospitals Bad-Debt-to-Receivables Ratios

	Bad debt ratio to receivables							
	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Romney
Unins2013× 2006	0.038	-0.035	0.11	0.0010	0.0089*	0.13	-0.032	0.25
	(0.23)	(0.71)	(0.13)	(0.0029)	(0.0037)	(0.33)	(0.77)	(0.25)
...× 2007	-0.0087	-0.049	0.0035	-0.00026	0.0069+	-0.0027	-0.032	0.0074
	(0.22)	(0.71)	(0.061)	(0.0031)	(0.0038)	(0.30)	(0.76)	(0.097)
...× 2008	-1.24	-3.70	-0.29	0.0014	0.0087*	-1.72	-4.06	-0.42
	(1.09)	(3.49)	(0.28)	(0.0031)	(0.0039)	(1.49)	(3.82)	(0.42)
...× 2009	-0.010	-0.032	0.00023	-0.0015	0.0064	-0.0077	-0.028	0.0014
	(0.22)	(0.72)	(0.060)	(0.0033)	(0.0048)	(0.30)	(0.76)	(0.095)
...× 2010	-0.0018	-0.015	0.0073	0.0013	0.0071	-0.00033	-0.016	0.0099
	(0.22)	(0.72)	(0.059)	(0.0040)	(0.0045)	(0.30)	(0.76)	(0.093)
...× 2011	0.0015	-0.014	0.0095	0.00060	0.0021	0.0010	-0.011	0.012
	(0.22)	(0.71)	(0.059)	(0.0033)	(0.0043)	(0.30)	(0.76)	(0.093)
...× 2012	0.0080	-0.0034	0.0056	0.0020	0.00081	0.016	0.0084	0.011
	(0.23)	(0.71)	(0.058)	(0.0033)	(0.0041)	(0.30)	(0.76)	(0.093)
Unins2013× Expansion × 2006	-0.040	0.032	-0.12	-0.0072	-0.018*	-0.13	0.031	-0.25
	(0.23)	(0.71)	(0.13)	(0.018)	(0.0071)	(0.33)	(0.77)	(0.25)
...× 2007	0.0062	0.045	-0.0060	-0.0047	-0.013+	0.000065	0.030	-0.0094
	(0.22)	(0.71)	(0.061)	(0.018)	(0.0073)	(0.30)	(0.76)	(0.097)
...× 2008	1.26	3.73	0.28	-0.0086	-0.015*	1.75	4.13	0.42
	(1.09)	(3.49)	(0.28)	(0.019)	(0.0073)	(1.49)	(3.82)	(0.42)
...× 2009	0.023	0.042	-0.0019	0.022	-0.012	-0.024	-0.040	-0.0026
	(0.22)	(0.72)	(0.060)	(0.026)	(0.0079)	(0.30)	(0.77)	(0.095)
...× 2010	0.061	0.11	-0.0031	0.055	-0.0032	-0.0072	0.0083	-0.0045
	(0.23)	(0.72)	(0.059)	(0.056)	(0.0093)	(0.30)	(0.76)	(0.093)
...× 2011	-0.0020	0.013	-0.0087	0.0016	0.0088	-0.0022	0.0091	-0.011
	(0.22)	(0.71)	(0.059)	(0.019)	(0.0081)	(0.30)	(0.76)	(0.093)
...× 2012	-0.030	-0.027	-0.0031	0.00098	0.0038	-0.053	-0.069	-0.0089
	(0.23)	(0.71)	(0.059)	(0.019)	(0.0084)	(0.31)	(0.76)	(0.093)
Obs.	32251	12230	19981	5975	5001	26253	11257	14972
2006-2010 Mean	0.20	0.63	-0.060	0.055	0.033	0.23	0.67	-0.091
2006-2010 SD	40.6	56.7	26.3	1.22	0.40	45.0	59.1	30.4
P-value: joint significance of pretrend test	0.99	1.00	0.77	0.99	0.020	0.98	0.99	0.82

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

Note: (1) Controls for hospital size. Includes year, state, and hospital fixed effects, as well as state-specific time trends. (2) There were too few hospitals in Rural/Obama areas to calculate pre-trends.

Source: Medicare Cost Reports, 2006-2013

Table B16: Pre-trends: Hospital Provision of Inpatient Medicaid Stays

	Medicaid Inpatient Stays (% Hospital-level)							
	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Romney
Unins2013× 2006	-0.0010**	0.00033	-0.0018***	0.00014	-0.00088	-0.0017***	-0.0013+	-0.0023***
	(0.00036)	(0.00071)	(0.00049)	(0.00066)	(0.00090)	(0.00043)	(0.00068)	(0.00060)
...× 2007	-0.00050	0.000039	-0.00081+	0.00030	-0.00016	-0.00095*	-0.0013+	-0.0012*
	(0.00034)	(0.00068)	(0.00045)	(0.00065)	(0.00095)	(0.00040)	(0.00064)	(0.00053)
...× 2008	-0.00063+	-0.00024	-0.00064	-0.000073	-0.00066	-0.00099*	-0.0017*	-0.00075
	(0.00034)	(0.00069)	(0.00042)	(0.00066)	(0.00093)	(0.00039)	(0.00068)	(0.00049)
...× 2009	-0.00045	0.00052	-0.00082*	0.00011	-0.0012	-0.00079*	-0.00088	-0.00083+
	(0.00032)	(0.00065)	(0.00041)	(0.00061)	(0.00087)	(0.00037)	(0.00061)	(0.00048)
...× 2010	-0.00035	0.00088	-0.0010*	0.000054	-0.0012	-0.00063	-0.00056	-0.00089+
	(0.00033)	(0.00067)	(0.00042)	(0.00062)	(0.00088)	(0.00039)	(0.00066)	(0.00049)
...× 2011	-0.00026	-0.000035	-0.00064	0.00020	-0.00074	-0.00061+	-0.00084	-0.00068
	(0.00032)	(0.00074)	(0.00040)	(0.00062)	(0.00090)	(0.00037)	(0.00063)	(0.00047)
...× 2012	-0.00012	-0.00040	-0.00029	-0.00025	-0.0012	-0.000042	-0.00037	0.000030
	(0.00033)	(0.00077)	(0.00042)	(0.00064)	(0.00091)	(0.00039)	(0.00066)	(0.00050)
Unins2013× Expansion × 2006	0.00087+	-0.00066	0.0019*	-0.00086	-0.00090	0.0017**	0.00068	0.0031**
	(0.00048)	(0.00079)	(0.00086)	(0.0010)	(0.0018)	(0.00061)	(0.00087)	(0.0010)
...× 2007	0.00020	-0.00036	0.00054	-0.00074	-0.00054	0.00060	0.00033	0.0013
	(0.00046)	(0.00076)	(0.00089)	(0.00096)	(0.0021)	(0.00060)	(0.00084)	(0.0010)
...× 2008	0.000066	-0.00032	0.00011	-0.00096	-0.0013	0.00050	0.00091	0.00063
	(0.00044)	(0.00076)	(0.00077)	(0.00089)	(0.0018)	(0.00056)	(0.00084)	(0.00089)
...× 2009	-0.00027	-0.0012+	0.00018	-0.0015+	-0.00070	0.00024	-0.000023	0.00076
	(0.00043)	(0.00073)	(0.00077)	(0.00089)	(0.0019)	(0.00054)	(0.00078)	(0.00087)
...× 2010	0.000029	-0.0011	0.00043	-0.0013	-0.00040	0.00047	0.00018	0.00069
	(0.00044)	(0.00074)	(0.00079)	(0.00092)	(0.0022)	(0.00055)	(0.00084)	(0.00087)
...× 2011	-0.00020	-0.00025	-0.00024	-0.0012	-0.0015	0.00018	0.00036	0.000081
	(0.00043)	(0.00081)	(0.00081)	(0.00088)	(0.0018)	(0.00055)	(0.00082)	(0.00092)
...× 2012	-0.00026	0.00026	-0.00075	-0.00019	0.00029	-0.00034	0.00011	-0.00068
	(0.00046)	(0.00084)	(0.00086)	(0.00094)	(0.0022)	(0.00059)	(0.00085)	(0.00096)
Obs.	32738	12564	20136	6014	5027	26701	11574	15101
2006-2010 Mean	0.12	0.13	0.12	0.11	0.11	0.13	0.13	0.12
2006-2010 SD	0.11	0.11	0.10	0.093	0.091	0.11	0.12	0.10
P-value: joint significance of pretrend test	0.066	0.43	0.053	0.83	0.91	0.0085	0.26	0.017

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

Note: (1) Controls for hospital size. Includes year, state, and hospital fixed effects, as well as state-specific time trends. (2) There were too few hospitals in Rural/Obama areas to calculate pre-trends.

Source: Medicare Cost Reports, 2006-2013

Table B17: Pre-trends: Hospital Provision of Outpatient Medicaid Visits

	Medicaid Outpatient Visits (% Hospital-level)							
	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Romney
Unins2013× 2006	-0.00046	0.00020	-0.0017***	0.00049	-0.00092	-0.0011**	-0.00030	-0.0018***
	(0.00033)	(0.00055)	(0.00036)	(0.00068)	(0.00071)	(0.00034)	(0.00061)	(0.00042)
...× 2007	-0.00020	0.00012	-0.00072*	0.00053	-0.000047	-0.00063+	-0.00049	-0.00082*
	(0.00033)	(0.00053)	(0.00033)	(0.00065)	(0.00069)	(0.00034)	(0.00061)	(0.00040)
...× 2008	-0.00030	-0.00033	-0.00057+	0.00019	-0.00030	-0.00053+	-0.00043	-0.00059
	(0.00031)	(0.00053)	(0.00031)	(0.00063)	(0.00070)	(0.00031)	(0.00056)	(0.00036)
...× 2009	-0.00024	0.00035	-0.00066*	-0.00025	-0.0080	-0.00028	0.00019	-0.00057
	(0.00030)	(0.00049)	(0.00030)	(0.00059)	(0.00063)	(0.00031)	(0.00059)	(0.00035)
...× 2010	0.000071	0.00060	-0.00048	-0.00000054	-0.00032	-0.00013	0.00022	-0.00043
	(0.00029)	(0.00046)	(0.00030)	(0.00060)	(0.00063)	(0.00029)	(0.00054)	(0.00034)
...× 2011	0.000066	0.00048	-0.00034	0.000030	-0.00078	-0.00015	-0.000088	-0.00016
	(0.00030)	(0.00051)	(0.00030)	(0.00060)	(0.00066)	(0.00031)	(0.00058)	(0.00035)
...× 2012	-0.00018	0.000091	-0.00043	-0.00040	-0.00073	-0.00030	-0.00019	-0.00030
	(0.00031)	(0.00047)	(0.00035)	(0.00062)	(0.00084)	(0.00032)	(0.00058)	(0.00039)
Unins2013× Expansion × 2006	-0.00023	-0.00093	0.00085	-0.0016	-0.0032+	0.00042	-0.0012	0.0021*
	(0.00045)	(0.00063)	(0.00086)	(0.0010)	(0.0017)	(0.00052)	(0.00076)	(0.00090)
...× 2007	-0.00082+	-0.00092	-0.0010	-0.0019*	-0.0036*	-0.00048	-0.0010	0.000047
	(0.00044)	(0.00060)	(0.00081)	(0.00096)	(0.0015)	(0.00050)	(0.00074)	(0.00084)
...× 2008	-0.00061	-0.00056	-0.00083	-0.0017+	-0.0037*	-0.00034	-0.0011	0.00026
	(0.00041)	(0.00060)	(0.00080)	(0.00094)	(0.0015)	(0.00047)	(0.00070)	(0.00082)
...× 2009	-0.00038	-0.00094+	-0.00023	-0.00076	-0.0026+	-0.00041	-0.0013+	0.00040
	(0.00040)	(0.00056)	(0.00074)	(0.00087)	(0.0014)	(0.00047)	(0.00072)	(0.00081)
...× 2010	-0.00044	-0.0013*	0.00051	-0.00087	-0.0024+	-0.00015	-0.0014+	0.0011
	(0.00040)	(0.00054)	(0.00074)	(0.00087)	(0.0014)	(0.00047)	(0.00070)	(0.00080)
...× 2011	-0.00025	-0.00082	0.00022	0.00025	0.00036	-0.00014	-0.00048	0.00015
	(0.00042)	(0.00060)	(0.00082)	(0.00092)	(0.0015)	(0.00051)	(0.00075)	(0.00090)
...× 2012	-0.0000080	-0.00040	0.00021	0.00081	0.00055	-0.00010	-0.00054	0.00032
	(0.00042)	(0.00056)	(0.00081)	(0.00089)	(0.0016)	(0.00051)	(0.00074)	(0.00087)
Obs.	32745	12565	20142	6016	5029	26706	11575	15105
2006-2010 Mean	0.11	0.13	0.10	0.090	0.087	0.12	0.13	0.10
2006-2010 SD	0.11	0.11	0.10	0.10	0.11	0.11	0.11	0.098
P-value: joint significance of pretrend test	0.0045	0.062	0.00011	0.068	0.0057	0.0046	0.024	0.0037

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Controls for hospital size. Includes year, state, and hospital fixed effects, as well as state-specific time trends. (2) There were too few hospitals in Rural/Obama areas to calculate pre-trends.

Source: Medicare Cost Reports, 2006-2013

Table B18: Pre-trends: Hospital Receipt of Government Grants and Transfers

	Any Government grants, appropriations or transfers for support of hospital operations							
	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Romney
Unins2013× 2006	0.0020	0.0051*	0.00082	-0.0018	-0.0070+	0.0036*	0.0041+	0.0050*
	(0.0013)	(0.0021)	(0.0020)	(0.0027)	(0.0041)	(0.0015)	(0.0023)	(0.0022)
...× 2007	0.0020	0.0053*	0.00082	-0.0016	-0.0070+	0.0036*	0.0042+	0.0050*
	(0.0013)	(0.0021)	(0.0020)	(0.0027)	(0.0041)	(0.0015)	(0.0023)	(0.0022)
...× 2008	0.0021+	0.0054*	0.00099	-0.0015	-0.0066	0.0037*	0.0044+	0.0051*
	(0.0013)	(0.0021)	(0.0020)	(0.0027)	(0.0042)	(0.0015)	(0.0023)	(0.0022)
...× 2009	0.0021	0.0055**	0.0010	-0.0018	-0.0072+	0.0038*	0.0045+	0.0053*
	(0.0013)	(0.0021)	(0.0020)	(0.0027)	(0.0041)	(0.0015)	(0.0023)	(0.0022)
...× 2010	0.0029*	0.0073***	0.00089	0.00037	-0.0029	0.0045**	0.0059*	0.0039+
	(0.0014)	(0.0022)	(0.0022)	(0.0030)	(0.0050)	(0.0016)	(0.0024)	(0.0024)
...× 2011	0.0029+	0.0062*	0.0014	0.0046	0.0044	0.0027	0.0064*	0.00072
	(0.0016)	(0.0025)	(0.0025)	(0.0036)	(0.0056)	(0.0018)	(0.0027)	(0.0027)
...× 2012	0.000043	-0.00035	0.00030	0.0048	0.0073	-0.0015	-0.00089	-0.0024
	(0.0016)	(0.0026)	(0.0025)	(0.0034)	(0.0053)	(0.0018)	(0.0029)	(0.0027)
Unins2013× Expansion × 2006	-0.00073	-0.0045	-0.000048	0.0048	0.0091	-0.00069	-0.0012	-0.0033
	(0.0019)	(0.0028)	(0.0032)	(0.0037)	(0.0069)	(0.0023)	(0.0033)	(0.0037)
...× 2007	-0.00078	-0.0046+	0.000037	0.0047	0.0089	-0.00072	-0.0013	-0.0032
	(0.0019)	(0.0028)	(0.0032)	(0.0037)	(0.0069)	(0.0023)	(0.0033)	(0.0037)
...× 2008	-0.00088	-0.0046+	-0.00019	0.0045	0.0082	-0.00081	-0.0014	-0.0033
	(0.0019)	(0.0028)	(0.0032)	(0.0037)	(0.0069)	(0.0023)	(0.0033)	(0.0037)
...× 2009	-0.00088	-0.0048+	-0.00024	0.0047	0.0088	-0.00088	-0.0016	-0.0035
	(0.0019)	(0.0028)	(0.0032)	(0.0037)	(0.0069)	(0.0023)	(0.0033)	(0.0037)
...× 2010	-0.0035+	-0.0090**	-0.0014	0.00054	0.0042	-0.0042	-0.0063+	-0.0040
	(0.0020)	(0.0029)	(0.0036)	(0.0040)	(0.0082)	(0.0026)	(0.0036)	(0.0042)
...× 2011	-0.0014	-0.0049	0.00044	-0.00090	-0.0057	-0.00054	-0.0056	0.0036
	(0.0024)	(0.0034)	(0.0042)	(0.0053)	(0.0092)	(0.0029)	(0.0041)	(0.0049)
...× 2012	0.00019	-0.000014	0.000055	-0.0037	-0.0062	0.0016	-0.00057	0.0036
	(0.0023)	(0.0035)	(0.0040)	(0.0046)	(0.0087)	(0.0029)	(0.0042)	(0.0046)
Obs.	32781	12584	20159	6017	5030	26741	11594	15121
2006-2010 Mean	0.082	0.085	0.079	0.11	0.11	0.076	0.085	0.069
2006-2010 SD	0.27	0.28	0.27	0.31	0.31	0.26	0.28	0.25
P-value: joint significance of pretrend test	0.53	0.032	1.00	0.29	0.093	0.0054	0.073	0.040

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

Note: (1) Controls for hospital size. Includes year, state, and hospital fixed effects, as well as state-specific time trends. (2) There were too few hospitals in Rural/Obama areas to calculate pre-trends.

Source: Medicare Cost Reports, 2006-2013

Table B19: Effect of Medicaid Expansion on Selected Outcomes Among Local Governments Reporting Hospital Expenditures, Excluding States that Expanded Prior to 2014

	Operating margin								
	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Obama	Rural/Romney
Post × Unins2013	0.11	0.71	0.057*	0.14	0.83	0.060+	0.0064	0.050	-0.0024
	(0.081)	(0.69)	(0.024)	(0.11)	(0.79)	(0.032)	(0.018)	(0.043)	(0.033)
..× Expansion	-0.12	-0.71	-0.031	-0.15	-0.83	-0.0053	-0.11		-0.096
	(0.084)	(0.69)	(0.067)	(0.11)	(0.79)	(0.071)	(0.087)		(0.094)
	Profit Margin								
Post × Unins2013	0.19*	0.33	0.20*	0.28**	0.43+	0.27*	-0.058	-0.37*	-0.052
	(0.081)	(0.21)	(0.084)	(0.11)	(0.24)	(0.12)	(0.064)	(0.16)	(0.062)
..× Expansion	-0.098	-0.32	0.20	-0.22	-0.41	0.013	0.14		0.15
	(0.22)	(0.38)	(0.28)	(0.25)	(0.40)	(0.38)	(0.14)		(0.15)
	Bad debt ratio to receivables								
Post × Unins2013	0.35	0.078	0.086	0.47	0.053	-0.094	0.032	-0.18	0.030
	(0.38)	(0.066)	(0.78)	(0.52)	(0.063)	(0.93)	(0.038)	(0.16)	(0.049)
..× Expansion	0.25	0.93	-0.045	0.19	0.98	0.11	0.094		0.10
	(0.60)	(0.82)	(0.79)	(0.73)	(0.84)	(0.93)	(0.091)		(0.098)
	Medicaid Outpatient Visits (% Hospital-level)								
Post × Unins2013	0.0032	0.016	-0.0018	0.0044	0.018	0.00055	-0.0017	0.0058	-0.015*
	(0.0054)	(0.015)	(0.0054)	(0.0067)	(0.017)	(0.0070)	(0.0085)	(0.031)	(0.0071)
..× Expansion	0.0074	-0.014	0.022	0.0070	-0.017	0.021	-0.0092		0.00085
	(0.011)	(0.018)	(0.015)	(0.012)	(0.020)	(0.017)	(0.013)		(0.011)
	Medicaid Inpatient Stays (% Hospital-level)								
Post × Unins2013	-0.0032	-0.014	-0.00053	-0.0034	-0.014	-0.00070	-0.010	0.030	-0.0032
	(0.0059)	(0.015)	(0.0062)	(0.0070)	(0.017)	(0.0077)	(0.011)	(0.036)	(0.0097)
..× Expansion	0.020+	0.027	0.046*	0.022+	0.026	0.050*	-0.013		-0.020
	(0.011)	(0.018)	(0.020)	(0.012)	(0.020)	(0.023)	(0.017)		(0.016)
	Any Government grants, appropriations or transfers for support of hospital opera								
Post × Unins2013	-0.049*	-0.047	0.024	-0.047+	-0.045	0.021	-0.074	0.19	0.083
	(0.024)	(0.073)	(0.027)	(0.027)	(0.081)	(0.032)	(0.049)	(0.13)	(0.058)
..× Expansion	0.064	0.065	-0.051	0.071	0.075	-0.0041	0.12		0.0052
	(0.041)	(0.083)	(0.078)	(0.045)	(0.090)	(0.099)	(0.099)		(0.10)

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Excludes states that adopted Medicaid expansion after 2014: AK, IN, PA, MT and LA, and before 2014: CA, CT, DC, MN, NJ, and WA. (2) Controls for hospital size. Includes year, state, and hospital fixed effects, as well as state-specific time trends.

Source: Medicare Cost Reports, 2006-2015

Appendix. 4.1   Hospital Analysis using Hospital Referral Regions

Table B20: Effect of Medicaid Expansion on Hospital Outcomes

	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Obama	Rural/Romney
Operating margin									
Post × Unins2013	0.051	0.21	0.031	0.057	0.21	0.044*	-0.0072	0.31	-0.10
	(0.035)	(0.20)	(0.020)	(0.041)	(0.21)	(0.020)	(0.019)	(0.19)	(0.10)
..× Expansion	-0.034	-0.21	0.018	-0.039	-0.21	0.017	0.0088		0.052
	(0.037)	(0.20)	(0.027)	(0.043)	(0.21)	(0.027)	(0.051)		(0.11)
Profit Margin									
Post × Unins2013	0.12*	0.077	0.18***	0.15*	0.077	0.22**	-0.067	-0.16	-0.10*
	(0.052)	(0.13)	(0.053)	(0.064)	(0.14)	(0.068)	(0.049)	(0.23)	(0.049)
..× Expansion	-0.010	-0.069	-0.038	-0.067	-0.086	-0.14	0.078		0.082
	(0.13)	(0.25)	(0.14)	(0.14)	(0.26)	(0.16)	(0.098)		(0.10)
Bad debt ratio to receivables									
Post × Unins2013	-0.0072	-0.011	-0.068	-0.040	-0.0037	-0.11	0.038+	-0.17+	0.0064
	(0.053)	(0.043)	(0.057)	(0.075)	(0.047)	(0.087)	(0.021)	(0.10)	(0.022)
..× Expansion	0.28	0.46	-0.018	0.32	0.44	0.011	0.021		0.041
	(0.33)	(0.45)	(0.068)	(0.36)	(0.44)	(0.097)	(0.057)		(0.048)
Medicaid Outpatient Visits									
Post × Unins2013	18.5	699.9	92.7	-126.5	748.7	96.9	61.7	337.9	46.2
	(456.7)	(1516.4)	(396.9)	(605.6)	(1581.8)	(503.1)	(50.9)	(206.6)	(47.1)
..× Expansion	765.6	-1247.4	789.9	996.5	-1302.2	923.0	103.4		124.5
	(720.3)	(1705.2)	(787.7)	(853.2)	(1772.0)	(913.7)	(116.2)		(102.6)
Medicaid Inpatient Stays									
Post × Unins2013	19.0	53.4	40.0	-8.36	59.5	47.5	5.45	72.8+	6.36
	(75.6)	(261.8)	(65.1)	(99.3)	(273.0)	(82.6)	(13.4)	(43.8)	(11.3)
..× Expansion	132.8	-51.8	58.7	170.3	-70.1	56.3	66.4*		72.0+
	(130.7)	(293.3)	(155.5)	(152.4)	(304.6)	(179.6)	(33.7)		(39.0)
Any Government grants, appropriations or transfers for support of hospital operations									
Post × Unins2013	-0.0062	0.0030	0.037*	0.013	-0.0041	0.046*	-0.089*	0.21*	0.012
	(0.016)	(0.035)	(0.018)	(0.018)	(0.037)	(0.021)	(0.037)	(0.091)	(0.041)
..× Expansion	0.0055	0.0028	-0.11**	-0.0045	0.021	-0.11*	0.021		-0.014
	(0.029)	(0.046)	(0.040)	(0.031)	(0.048)	(0.043)	(0.076)		(0.077)
Obs.	18395	6402	11970	14906	6020	8863	3435	347	3065

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001. Robust standard errors in parentheses.

Note: (1) Post period begins on 1/1/2014. (2) Include hospital fixed effects, year fixed effects, and state-specific time trends. (3) The sample of hospitals are in any part of the included HRRs of the COGS sample. (4) All but 33 hospital-years mapped to an HRR; those that did not match were omitted.

Source: Medicare Cost Reports, 2006-2015

Table B21: Effect of Medicaid Expansion on Hospital Outcomes Among Hospitals that Reported State/Local Program Costs Pre-2014

	Operating margin								
	Full Sample	Obama	Romney	Urban	Urban/Obama	Urban/Romney	Rural	Rural/Obama	Rural/Romney
Post × Unins2013	0.022	0.052**	0.013	0.027+	0.053**	0.0079	-0.023	-0.061	-0.032
	(0.015)	(0.018)	(0.021)	(0.016)	(0.018)	(0.023)	(0.039)	(0.054)	(0.069)
..× Expansion	-0.026	-0.041	-0.017	-0.019	-0.051	0.026	-0.14		-0.20
	(0.028)	(0.038)	(0.051)	(0.024)	(0.039)	(0.031)	(0.36)		(0.45)
Profit Margin									
Post × Unins2013	0.15*	-0.0031	0.17*	0.18*	-0.0079	0.19+	-0.048	-0.75**	-0.18+
	(0.067)	(0.11)	(0.080)	(0.077)	(0.12)	(0.098)	(0.064)	(0.23)	(0.094)
..× Expansion	-0.13	0.037	-0.24	-0.18	-0.0015	-0.34+	0.25		0.55**
	(0.18)	(0.32)	(0.18)	(0.20)	(0.35)	(0.20)	(0.16)		(0.19)
Bad debt ratio to receivables									
Post × Unins2013	-1.43	-0.0040	-1.16	-2.56	-0.033	1.58	0.058	0.77+	-0.088+
	(1.71)	(0.078)	(3.24)	(2.58)	(0.078)	(1.99)	(0.052)	(0.44)	(0.050)
..× Expansion	1.41	0.087	1.06	2.54	0.12	-1.67	-0.0044		0.087
	(1.71)	(0.085)	(3.24)	(2.58)	(0.086)	(1.99)	(0.12)		(0.14)
Medicaid Outpatient Visits									
Post × Unins2013	-790.9	-2163.0	257.3	-934.4	-2177.9	329.5	414.4***	506.5+	214.8*
	(747.9)	(1975.6)	(367.5)	(856.8)	(2044.4)	(437.8)	(106.5)	(279.8)	(100.8)
..× Expansion	1679.9	-892.0	1608.0+	1960.1+	-497.2	1816.1+	-293.0		-71.2
	(1063.1)	(2291.3)	(923.4)	(1170.4)	(2365.8)	(1036.9)	(216.2)		(253.2)
Medicaid Inpatient Stays									
Post × Unins2013	-49.9	-141.9	30.7	-72.1	-131.6	25.5	64.4*	14.2	44.0
	(117.0)	(324.0)	(76.1)	(133.1)	(335.1)	(91.7)	(26.6)	(53.7)	(27.3)
..× Expansion	209.5	-166.5	129.6	245.4	-121.8	146.5	-77.4		-61.2
	(171.8)	(367.9)	(169.3)	(188.5)	(379.2)	(196.0)	(64.9)		(78.0)
Any Government grants, appropriations or transfers for support of hospital operations									
Post × Unins2013	0.035+	0.020	0.0084	0.063**	0.017	0.045	-0.16+	-0.27	-0.16*
	(0.021)	(0.043)	(0.027)	(0.022)	(0.043)	(0.031)	(0.096)	(0.26)	(0.081)
..× Expansion	-0.018	-0.030	-0.037	-0.041	-0.028	-0.071	-0.12		-0.033
	(0.037)	(0.059)	(0.051)	(0.038)	(0.059)	(0.054)	(0.16)		(0.14)
Obs.	11709	5006	6653	10568	4849	5685	984	91	844

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Robust standard errors in parentheses.

Note: (1) Post period begins on 1/1/2014. (2) Include hospital fixed effects, year fixed effects, and state-specific time trends. (3) The sample of hospitals are in any part of the included HRRs of the COGS sample. (4) All but 33 hospital-years mapped to an HRR; those that did not match were omitted.

Source: Medicare Cost Reports, 2006-2015