FISCAL FEDERALISM AND THE BUDGET IMPACTS OF THE AFFORDABLE
CARE ACT'S MEDICAID EXPANSION

Jonathan Gruber
Benjamin D. Sommers

Fiscal Federalism and the Budget Impacts of the Affordable Care Act's Medicaid Expansion
Jonathan Gruber and Benjamin D. Sommers
NBER Working Paper No. 26862
March 2020
JEL No. H77,I18

ABSTRACT

Medicaid's federal-state matching system of financing is the nation's largest example of fiscal federalism. Using generous federal subsidies, the Affordable Care Act incentivized states to expand Medicaid, which became a state option in the aftermath of a 2012 Supreme Court ruling. As of early 2020, 14 states had not yet expanded, with concerns over state budgetary effects described as a key barrier. We use an event-study approach to analyze state budget data from 2010-2018 and assess the effects of state Medicaid expansion decisions. We find that Medicaid expansion increased total spending in expansion states by 6% to 9%, compared to non-expansion states. By source of funds, federal spending via the states increased by 10% in the first year of Medicaid expansion, rising to 27% in 2018. Changes in spending from state funding were modest and non-significant, with less than a 1% change from baseline annually in the most recent years, 2017 and 2018. Meanwhile, we find no evidence that increased Medicaid spending from expansion produced any reductions in spending on education, corrections, transportation, or public assistance. Changes in Medicaid spending tracked closely with the baseline pre-ACA (2013) uninsured rate in each states, with expansion leading to roughly $2680 in added annual spending per uninsured adult. As a result, we estimate states that didn't expand Medicaid passed up $43 billion in federally-subsidized program funds in 2018. Finally, state projections in the aggregate were reasonably accurate, with expansion states projecting average Medicaid spending from 2014-2018 within 2 percent of the actual amounts, and in fact overestimating Medicaid spending in most years.

Jonathan Gruber
Department of Economics, E52-434
MIT
50 Memorial Drive
Cambridge, MA 02142
and NBER
gruberj@mit.edu

Benjamin D. Sommers
Harvard T.H. Chan School of Public Health
Department of Health Policy and Management
677 Huntington Avenue
Kresge 406
Boston, MA 02115
bsommers@hsph.harvard.edu

Medicaid's federal-state matching system of financing is the nation's largest example of fiscal federalism. The federal government currently spends roughly $400 billion annually on Medicaid, which accounts for slightly over 60% of the program's total cost. The remainder is paid for by the states. Using even more generous federal subsidies than Medicaid has traditionally featured, the Affordable Care Act (ACA) incentivized states to expand Medicaid, which became a state option in the aftermath of a 2012 Supreme Court Ruling. As of early 2020, 14 states had not yet expanded, with concerns over state budgetary effects described as a key barrier cited by governors and political opponents of the ACA (Horton & Ingram, 2018; Sommers & Epstein, 2013).

Numerous analysts have assessed the budget impacts of Medicaid expansion in particular states, either in the form of projected costs in anticipation of potential expansion or after the fact with detailed budget assessments (Ayanian, Ehrlich, Grimes, & Levy, 2017; Bachrach, Boozang, Herring, & Reyneri, 2016; Hall, 2018). One national analysis using state expenditure data through fiscal year 2015 showed significant increases in Medicaid spending from federal sources, without any increase in state-based spending (Sommers & Gruber, 2017); however, the ACA paid 100% of the cost of newly-eligible adults through the year 2016, so more recent data may show differential budget effects over time. In addition, several more states have expanded since 2015.

This paper provides an updated assessment of the state budget impacts of Medicaid expansion, using data from the National Association of State Budget Officers (NASBO) through fiscal year 2018. We also examine how these changes track with the states' baseline uninsured rates; assess whether Medicaid spending crowded out or offset spending in other areas of the

state budget; and test the accuracy of state budget projections related to Medicaid expansion costs.

We have five main findings. First, as expected, Medicaid expansion led to substantial increases in overall spending and Medicaid spending in expansion states, compared to non-expansion states. Using an event-study approach, we find that Medicaid expansion increased total spending in expansion states by roughly 8% by the year 2018, compared to non-expansion states and the baseline year of 2013. Medicaid spending increased over time, rising from a modest 5% change in FY 2014 and 16% in FY 2015 to 24% by FY 2018.

Second, by source of funds, the increase in spending in Medicaid expansion states was entirely federal in nature. Federal spending via the states increased by 10% in the first year of Medicaid expansion, rising to 27% in 2018. Meanwhile, changes in spending from state funding were modest and non-significant, with less than a 1% change from baseline annually in 2017 and 2018, even as expansion states were required to contribute an increasing share of costs for newly-eligible adults (6% by 2018). This pattern held even among those states with the longest experience with expansion, the subset that began expanding in 2014. These results suggest that expansion states were able to achieve other offsetting savings in Medicaid and other expenditures to cover the state share of costs for the newly-enrolled population. This is consistent with the findings of several individual state budget assessments (Bachrach et al., 2016), but our results show this pattern was the norm rather than the exception.

Third, consistent with this conclusion, we find no "crowding out" of other state spending by the Medicaid expansions. We see no consistent reduction in states spending on education, transportation, public assistance, or corrections. Once again, this is true both overall and in the

most recent year of data, when expansion states were paying 6% of the Medicaid expansion costs by 2018.

Fourth, changes in Medicaid spending tracked closely with the baseline pre-ACA uninsured rate in each states, offering credence to the identification strategy used here. This approach also enables us to quantify the average state's cost of expansion, as a function of how may uninsured adults were in a state prior to the ACA's implementation. We find that expansion led to roughly $2,680 in added annual spending per uninsured adult (using the 2013 uninsured population). This implies that in the aggregate, states that did not expanded had foregone roughly $43 billion dollars in federally-subsidized Medicaid spending in 2018.

Finally, by analyzing anticipatory budget costs reported by each state for each year, we find that state projections in the aggregate were reasonably accurate, with expansion states estimating Medicaid spending from 2014-2018 within 2 percent of the actual amounts, and in fact overestimating Medicaid spending in most years. Thus, fears that most expansion states outspent their projections appear to be unfounded.

Our paper is organized as follows: Section I provides background on the financing of Medicaid in general and the Affordable Care Act's expansion. Section II reviews the existing literature on Medicaid financing and fiscal federalism. Section III describes our data and empirical strategy. Section IV discusses the results. Section V presents implications and concludes.

I. BACKGROUND ON FINANCING OF MEDICAID

Medicaid is a joint federal-state entitlement program. All qualifying expenses are paid for by states and then partially reimbursed by the federal government according to each state's

Federal Medical Assistance Percentage (FMAP), which – prior to the ACA – ranged from 50-83%, with higher rates for states with lower per capita incomes, and an overall mean of approximately 60% (Iglehart & Sommers, 2015). The FMAP – also known as the Medicaid "match rate" – applied to traditional Medicaid eligibility groups, namely low-income pregnant women, children, adults with disabilities, elderly adults, and parents of dependent children.

The ACA allowed states to expand Medicaid eligibility to all U.S. citizens and qualifying legal immigrants between the ages of 19 and 64, with incomes below 138% of the federal poverty level,[1] and funded this expanded eligibility more generously than the traditional FMAP. For all newly-eligible individuals, the federal government paid 100% of costs from 2014-2016, 95% in 2017, 94% in 2018, 93% in 2019, and 90% in 2020 and thereafter (Iglehart & Sommers, 2015). While initially intended to be universal in all 50 states, the Supreme Court in 2012 ruled the expansion was constitutionally coercive to states and effectively made the ACA's Medicaid expansions voluntary. 26 states plus Washington D.C. had expanded their Medicaid programs by 2014; 3 expanded in 2015, 2 in 2016, and 2 in 2019. All told, 34 Medicaid programs (including Washington DC) had expansions in effect by 2019, while 3 more have passed ballot initiatives and are in the process of implementing the expansion in 2020-2021. 14 states have not adopted the expansion (Kaiser, 2020).

There have been numerous studies over the years examining the financing of Medicaid and more broadly the political and economic incentives inherent in fiscal federalism. Grogan (1994) and Grossman (1994) both posit that policymakers maximize their own likelihood political utility / probability of public support through social program spending, which predicts a desire to leverage federal subsidies in order to produce a greater amount of "public benefit" per

---

[1] Medicaid coverage is only available to individuals with U.S. citizenship or legal permanent residency status for at least 5 years.

state dollar spent. Sutter (2018) describes the tendency of federal grant dollars to be self-perpetuating through a form of interest-group stickiness, in which the programs create constituencies then designed to lobby for the continuation of those programs.

Baicker and Staiger (2005) empirically examine state spending in Medicaid, particularly focusing on the Disproportionate Share Hospital (DSH) system, finding that states frequently leverage federal funds to scale back their own pre-existing efforts, a strategy they colorfully label "fiscal shenanigans." In a separate analysis, Baicker (2005) also explored multiple domains of state spending and finds that state budget decisions are affected by the choices of neighboring states, particularly in the area of Medicaid spending – potentially motivated in part by concerns of selective migration to more generous benefits. Notably, however, more recent studies find no evidence that low-income adults move across states lines in response to Medicaid expansion in numbers large enough to significantly impact state spending (Goodman, 2017; Schwartz & Sommers, 2014).

There have also been several post-ACA expansion assessments of state budgetary impacts. While the state share of Medicaid expansion dollars increased from 0% to 5% in 2017 and up to 10% by 2020, some states have experienced net savings in state spending after expanding Medicaid due to the expansion's federal funding offsetting other prior state expenditures (Bachrach et al., 2016; Levy, Ayanian, Buchmueller, Grimes, & Ehrlich, 2020). First, a substantial share (over 20%) of individuals who are eligible for the ACA expansion and the enhanced federal support were previously enrolled in Medicaid at lower federal reimbursement rates (Dorn, Francis, Snyder, & Rudowitz, 2015; Hall, 2018). Second, Medicaid funds may supplant some direct provision of health care services through public clinics, mental health facilities, and public hospitals that require state funding (Duggan, Gupta, & Jackson,

2019). Third, states may be able to reduce direct state spending on health care for individuals involved in the criminal justice system (Levy et al., 2020).

In the aggregate, data through fiscal year 2015 (which covered the first 18 months of Medicaid expansion in most of the original expansion states) demonstrated significant increases in Medicaid spending in expansion states, compared to non-expansion, with those increases matched by more federal funding without any significant increase in state-specific spending (Sommers & Gruber, 2017). But more recent evidence is needed, given the ACA's decreasing federal support for Medicaid expansion over time, with larger state shares in recent years.

III. DATA AND EMPIRICAL STRATEGY

III.A   Data

Our primary data are annual state expenditure reports from the National Association of State Budget Officers (NASBO). NASBO collects detailed information each year from all 50 states on their spending in the following categories: Medicaid, higher education, K-12 education, transportation, corrections, public assistance (non-health care), and 'other,' a residual category that incudes some larger items such as the Children's Health Insurance Program (CHIP), direct state provision of mental health and public health programs, and most other state government agencies including parks and recreation, housing programs, and aid to local governments (NASBO, 2019). The reports also include a breakdown of revenue sources for state spending, including federal funds and state funds (including general revenues and other state funds). The reports include actual spending data for prior fiscal years, and estimated fiscal spending in each category for the current fiscal year. Most states (46 of 50) operate on a fiscal year calendar that

runs from July 1 to June 30, while the other 4 use a starting date ranging from April 1 to October 1.

NASBO reports are not independently audited, and state-specific definitions across spending categories may differ, though NASBO reports that within-state definitions are generally consistent over time, and the dataset has been used both for prior research and for official government projections by the Congressional Budget Office (2005, 2007), indicating that it is a widely-accepted valid data source on state spending.

III.B Regression Model

Our primary empirical approach is an event study model, comparing changes in each category of spending by states for Medicaid expansion vs. non-expansion states. Unlike a traditional difference-in-difference model, the event study allows us to trace out the year-by-year effect of the Medicaid expansion, which is critical given the changing federal subsidy to the expansion over time. It also enables us to inspect the pre-expansion trends in our dependent variables to assess the identifying assumption of our model – that in the absence of Medicaid expansion, changes over time in state spending would have been similar in expansion vs. non-expansion states.

Equation 1 presents the event study model, with each observation at the state-year level:

(1) $Ln(Y_{et}) = \beta_0 + \beta_n\ Ever\ Expand_s * Year_t + \partial\ Year_t + \mu\ UnemploymentRate_{st}$

$+ \pi\ PerCapitaIncome_{st} + \Omega\ State_s + \varepsilon_{st}$

where s indexes the state and t indexes time (year). The dependent variables are all natural log-transformed spending by state and year, $Y_{st,}$ in the primary spending categories

mentioned in the prior section, as well as federal funds, state funds (combining general revenue, bonds, and other state sources), and total spending.

β_n is a vector containing the coefficients of interest, which are interaction terms between *EverExpand* (whether a state has expanded Medicaid by the end of fiscal year 2018[2]) and year fixed effects. The model also includes ∂ as a vector of year fixed effects, with captures the year-to-year changes in spending for all states (expansion and non-expansion states), so β_n estimates the change in spending due to Medicaid expansion, relative to the baseline year of 2013, which is omitted from the model.

The model also adjusts for time-varying state economics indicators: unemployment and per capita income, which come from the Bureau of Labor Statistics and the Federal Reserve (inflation adjusted to 2019 dollars), respectively. Ω is a vector of state fixed effects. ε_{st} are robust standard errors clustered at the state level.

In order to put a more direct magnitude on our estimates, we also conduct a more traditional difference-in-difference (DD) model, aggregating the pre and post-periods according to Equation 2:

(2) $Ln(Y_{st}) = \beta_0 + \beta_1\ Expansion\text{-}in\text{-}Effect_{st} + \mu\ UnemploymentRate_{st} + \pi\ PerCapitaIncome_{st}$

$+ \partial\ Year_t + \Omega\ State_s + \varepsilon_{st}$

where β_1 is the independent variable of interest, capturing the impact of having a Medicaid expansion in effect in state s in year t, adjusting for state and year fixed effects, and the other variables defined as in Equation 1.

We consider several versions of this DD model to assess robustness. First, we use a model in which we omit data from 2014-2016 as a wash-out period, during which the Medicaid

---

[2] Notably, this means Virginia, which expanded starting in 2019 and Maine, Idaho, Utah, and Nebraska, which expanded in 2020, are treated as non-expansion states in our dataset.

expansion population was covered using 100% federal funding, which focuses the DD estimate on 2017-2018, the years in which states were required to pay 5-6% of costs for expansion eligible adults. Second, we test the effect of excluding the state-year economic indicators, which may filter out some of the potential macroeconomic feedback of the expansion itself, which Levy and colleagues (2020) have modeled as a form of federal stimulus spending. Third, our graphical evidence from the event studies shows that in at least one case, spending on higher education, there appears to be strong pre-trends in state spending. To address this, we incorporate state-specific trends in our DD models. We also formally test the parallel trends assumption for the DD model in two ways, first by examining the linear trends for each outcome in expansion vs. non-expansion states using only data prior to 2014 and using a placebo test as if the expansion had begun starting in 2013, again only using pre-2014 data.

Finally, to assess the absolute magnitude of spending changes in each state as a function of the size of each state's Medicaid expansion, we expand our model to incorporate a triple interaction of Medicaid expansion with the baseline uninsured rate for adults 19-64 in each state prior to ACA implementation (2013), which were estimated from the 2013 American Community Survey. This baseline uninsured rate has been used in prior research (Courtemanche, Marton, Ukert, Yelowitz, & Zapata, 2016; Courtemanche, Marton, Ukert, Yelowitz, & Zapata, 2018) as a measure of the expected size of a state's coverage expansion via Medicaid, rather than a simple binary indicator for expansion vs. non-expansion. Also, instead of using a log transformation for the dependent variable, this model divides each spending amount Y_{st} by the state's overall population (also obtained from the American Community Survey), which allows us to examine absolute dollar amounts spent across states without large states dominating the results. Equation 3 describes this model:

(3) $Y\_Per\_Capita\_{st} = \beta_0 + \beta_1 \, Expansion\text{-}in\text{-}Effect_{st} * 2013UninsuredRate_s$

$\qquad + \beta_2 \, Expansion\text{-}in\text{-}Effect_{st} + \beta_3 \, 2013UninsuredRate_s * Year_t + \mu \, UnemploymentRate_{st} + \pi$

$\qquad PerCapitaIncome_{st} + \partial \, Year_t + \Omega \, State_s + \varepsilon_{st}$

β_1 is the coefficient of interest, capturing the effect of Medicaid expansion interacted with the state's pre-ACA uninsured rate. Direct effects of time and state are captured by fixed effects, and the direct effect of the state's pre-ACA uninsured rate drops out due to the state fixed effects. We include the two-way interaction terms for expansion and time (β_2) and baseline uninsured rate and time (a vector β_3); the two-way interaction term for state and baseline uninsured rate drops out because the latter is time-invariant for each state. We can estimate this model for the whole pre- vs. post-expansion period (analogous to a DD model interacted with the uninsured rate), or we can replace the *Expansion-in-Effect* variable in Equation 5 above with an event study formulation, tracing out the effect of *EverExpand * 2013UninsureRate * Year* for each year of our sample. In the latter model, we highlight the results from 2018 as our best estimate of the long-run cost of Medicaid expansion, as a function of the baseline uninsured rate.

IV.   RESULTS

IV.A   Descriptive Statistics on State Budget Expenditures

Table 1 presents descriptive statistics on state spending for expansion vs. non-expansion states, from the pre-ACA expansion period (fiscal years 2010-2013). Expansion states began with larger average annual budgets, with a mean of $40.5 billion, compared to $31.6 billion in non-expansion states (in 2019 inflation-adjusted dollars). Medicaid represented the largest category of spending, roughly 23% of the total in expansion states and 24% in non-expansion states.[3] K-12 education and higher education, measured separately by NASBO, represent a combined 29% and 35% of spending for expansion and non-expansion states, respectively, while transportation costs were 7% and 8%. Corrections and Public Assistance both amounted to modest shares, 3% or less, while "Other" was 35% of spending in expansion states and 29% in non-expansion states. By source of funding, roughly one-third of spending is paid for by the federal government and two-thirds drawn from state sources in both groups of states.[4]

IV.B   Changes in Category of State Spending After Medicaid Expansion

Figure 1 presents our primary specification, the event study of Medicaid spending for expansion vs. non-expansion state, relative to the 2013 baseline year. The point estimates for year * expansion state are non-significant and close to zero from 2010-2012 (compared to 2013), offering support for the identifying assumption that pre-ACA trends in expansion and non-expansion states were similar. Medicaid spending in expansion states began to outpace non-

---

[3] While many states frequently describe Medicaid as their largest budget item based on these figures, this ignores the fact that more than half of Medicaid spending is reimbursed by the federal government, a far higher share than for the other spending categories. See Kessler (2011) for more discussion of this point.

[4] Federal plus state funding equals less than 100% because the residual (<3%) is funded by bonds.

expansion states starting in fiscal year 2014, with a 5% greater increase, which rose to 16% in 2015 and steadily rose from there, peaking at 24% by 2018. The steady increase over time, as opposed to a large one-time shift, is consistent with several phenomena. First, the number of states expanding has increased over time, with 6 states expanding in or after fiscal year 2015 (which began July 2014). Second, studies show that enrollment after Medicaid expansion tends to take 2-3 years in a given state before reaching a plateau (Courtemanche et al., 2018; Sommers, Maylone, Blendon, Orav, & Epstein, 2017). Finally, it may take newly-enrolled individuals some time to become more connected to health care providers and start utilizing services at a higher rate.

Figure 2 presents the comparable event study for all other major categories of spending in the NASBO data. None of the 6 categories other than Medicaid show any significant differential growth or reduction in spending among expansion states in the post-2014 period. Annual point estimates are all non-significant and mostly small in magnitude; the only post-2014 point estimates larger than 10% in absolute value are increases in public assistance and 'other' in the expansion states that ranged from 4% to 30% depending on the year, but none were statistically significant. This indicates that Medicaid expansion spending did not crowd out spending on other state priorities, and if anything, there may have been a spillover effect in which the increased federal funds (examined below) enabled Medicaid expansion states to shift some additional resources to public assistance and other programs; again, however, these results were not significant.

Meanwhile, Figure 2 also shows that for most outcomes, trends during the pre-2014 period were comparable between expansion and non-expansion states. However, the exception to this was for higher education, which showed a fairly sharp and statistically significant decline

from 2010-2013 in higher education spending (-19% for 2010 vs. the 2013 baseline, p<0.10) in expansion states, suggesting that factors other than the Medicaid expansion were driving these differences. This is similar to results from our prior analysis of NASBO data through 2015 (Sommers & Gruber, 2017) and indicate that the identifying assumption for this outcome is not satisfied.

If we analyze the data using a difference-in-difference model (DD) rather than an event study, we obtain largely similar results. Table 2 shows that Medicaid expansion led to a large and significant increase in Medicaid spending, 18% for the full study period, and 23% if we use a washout period and focus on 2017-2018 in particular. Inclusion of state-year economic controls has minimal effect on the results, while state time trends reduce the point estimates somewhat to 11%, which may reflect that several states partially implemented their Medicaid expansions even earlier in 2011-2012. Meanwhile, we find no significant changes for K-12 education, transportation, corrections or public assistance. Higher education shows a significant reduction in spending ranging from 9-13%; however, as noted in Figure 2B and in Table 3, this reduction in spending started before the Medicaid expansion, and after adjusting for state time trends (Table 2, Column 5), this result becomes non-significant. Table 3 shows no other significant divergence for study outcomes prior to 2014 in either linear models or a placebo DD model, offering general support for our approach.

All told, the results on categories of spending show a large and increasing effect of Medicaid spending only on the category of Medicaid expenditures, with no evidence of any other significant impacts of the expansion on areas of state spending such as education, transportation, or corrections.

IV.C   Total Spending and Source of Funding

Next, we turn to the question of the source of state revenues after Medicaid expansion. Figure 3 presents our primary event study specification examining the impacts on total spending, spending from federal funds, and spending from state funds. Total spending (Panel A) began to rise in expansion states, relative to non-expansion states, starting at 3% in fiscal year 2014 and then plateauing in the 7-9% range (compared to 2013). The increase in 2015 was statistically significant ($p<0.05$), while the latter years approached the $p<0.10$ level but were non-significant.

Meanwhile, the story looks quite different for spending from federal (Panel B) vs. state funds (Panel C). Much like total spending, federal spending began to rise in 2014. The increase in federal funding was statistically significant for all 5 post-expansion data points, rising to a 27% relative increase compared to the baseline year by 2018. In contrast, changes in state spending were essentially flat and not statistically significant. The largest point estimate was a 5% relative increase in 2015, which was not significant, and between 2017 and 2018, the differential state spending for expansion states was less than 1% compared to non-expansion states.   For all 3 outcomes, the pre-ACA point estimates in the event study were non-significant and close to zero, consistent with the pre-trend and falsification testing results for these outcomes reported in Table 3.

Table 4 presents the DD model for these outcomes. Total spending due to Medicaid expansion rose 3-9%, which was significant in 3 of the 5 models, with the largest estimate coming from an analysis only of the states that began their expansion in 2014. Federal spending due to Medicaid expansion rose significantly, by 12-24% depending on the model. State spending did not change significantly, with the long-run point estimate using a 2014-2016 washout period indicating a change of 0.4% in spending using state funds due to Medicaid

expansion. Results were also non-significant for the subset of expansion states that began their expansions earliest, in 2014.

Overall, the results on source of funding indicate that the Medicaid expansion continued to be supported through an increase in federal funds as recently as 2018, without any detectable increase in spending from state sources.

IV.D   Costs Per Uninsured Population

All of our models thus far have used the logarithm of spending as the dependent variable, which – combined with state fixed effects – reports relative changes in spending in each category. To make more transparent the level of spending in each state, we specified an alternative linear model in which each spending data point was scaled by the state's overall population (and 2019 inflation adjusted. Table 6 presents these results.

Column 1 repeats the baseline logarithmic model and shows the Expansion * 2018 coefficient from the event study model depicted in Figures 1-3. Column 2 shows the per-capita dollars spent for the 2018 event study estimate, which indicates that Medicaid spending had increased by $482 per capita and federal spending by $629 per capita (again, the full state population – not just the number of people in Medicaid). Thus, even in the last year of our dataset, when states had to pay 6% of newly-eligible enrollment costs, the net influx of federal dollars exceeded the increase in total Medicaid spending, suggestive of cost offsets through transferring lower-FMAP populations into Medicaid as noted in several state-specific analyses (Bachrach et al., 2016; Levy et al., 2020).

Columns 3 & 4 present a triple interaction term for the 2013 uninsured rate, using log spending (3) and per capita spending (4). Using Medicaid spending per capita (using the state's

total population and 2019 inflation-adjusted dollars) as the dependent variable, the coefficient on Medicaid expansion interacted with the pre-ACA uninsured rate is $2,654 (p<0.01). This model allows for a back-of-the-envelope calculation as to the magnitude of increased total spending (from all revenue sources) that a state should expect if it expands Medicaid – where as noted above, federal revenues covered essentially the full cost of expansion even through 2018. For this calculation, if we apply the mean uninsured rate in non-expansion states (0.212) and the mean non-expansion state population size (6.44 million), it implies that the median non-expansion state would experience an increase in annual Medicaid spending of $3.62 billion after expansion. Alternatively, it implies that the average non-expansion state, which had 1.35 million uninsured non-elderly adults before the ACA, would experience increased annual Medicaid spending of roughly $2680 per uninsured adult. This number is significantly lower than the $6000 per new Medicaid beneficiary estimated by the Congressional Budget Office in its original ACA-related projections (Elmendorf, 2012) because not all uninsured adults are Medicaid eligible, and only a share of eligible uninsured individuals will sign up (Aizer, 2007; Kenney, Lynch, Haley, & Huntress, 2012).

Using this figure, Table 7 presents projected annual Medicaid spending foregone, due to the lack of expansion in the 18 states that had not yet expanded by 2019. Estimates ranged from $169 million in Wyoming to $12.5 billion in Texas. In general, these results are similar in magnitude to projections from other sources (Buettgens, 2018).[5] However, given that ours are derived from aggregate budget statistics, they are not a replacement for more detailed assessments of each individual state's circumstances. Key state-specific factors such as Medicaid take-up rates, the share of uninsured individuals who are undocumented (and therefore

---

[5] For instance, Buettgens projected annual costs of $10.8 billion for Texas and $109 million for Wyoming (combining state and federal difference in spending after expansion form Tables 5 & 6 in that report).

ineligible for Medicaid), and the potential use of waivers for alternative approaches to Medicaid expansion could all substantially impact these figures.

IV.E Accuracy of States' Budget Estimates

There has been significant interest among policymakers in the accuracy of states to forecast the costs of expanding Medicaid, and some analysts have argued that unexpected cost overruns for expansion have frequently led to state budget pressures (Horton & Ingram, 2018). Figure 4 presents the event study graphs for Medicaid spending and spending using state funds, comparing actual spending as reported by NASBO after the completion of each fiscal year with the estimated spending as reported by NASBO for the current fiscal year. The graphs are based on event study regressions (using Equation 1) in which actual values are used for all pre-ACA data points and for non-expansion states in the post-ACA period, but estimated values are used for expansion states after 2014. For Medicaid spending, the estimated and actual values are nearly overlapping for 2014-2016, but in 2017-2018, the estimated values are roughly 2% higher than the finalized values. Meanwhile, the story is similar for state funding – overlapping curves in 2014-2015, and slight overestimates for more recent years compared to the finalized spending data. Overall, these figures imply that states were – in the aggregate – reasonably accurate in anticipating spending related to the Medicaid expansion, and if anything slightly overestimated the eventual cost. Of course, while in the aggregate state estimates were reasonably accurate, individual states varied in how far off their estimated costs ultimately were. Among expansion states from 2014-2018, the absolute difference between estimated and actual Medicaid spending averaged 2.8%, with individual annual differences ranging from -31% to 27%.

It should also be noted that these estimated spending figures are not the same as a long-term budget projection, as they are only provided for a year at a time. Thus, these results do not preclude states facing unanticipated long-run costs linked to Medicaid expansion. But they do provide support for the notion that states have been able to manage the year-by-year costs of Medicaid expansion without unanticipated budget overruns, supported by NASBO's (2019b) finding in its own assessment that no states were required to make mid-year budget cuts due to unexpected cost overruns in fiscal year 2019.

V.   IMPLICATIONS AND CONCLUSIONS

The Medicaid program is the fastest growing item in state budgets over the past 2 decades, and it is the fourth largest expenditure in the federal budget (after Social Security, Medicare and Defense (CBO, 2019).[6] Medicaid is also the primary source of new insurance coverage under the Affordable Care Act, with more than 60% of the law's estimated 20 million lives covered coming from the program (Frean, Gruber, & Sommers, 2017). But this increase in coverage was significantly smaller than it might have been due to the decision by more than a dozen states not to expand Medicaid under the ACA.

A commonly stated concern in states that rejected the Medicaid expansions is the fiscal costs of doing so – despite a federal matching rate that was well over 90% during this period. In our previous analysis of state budgets in the immediate wake of the Medicaid expansions (Sommers and Gruber, 2017), we found that the expansions did not impact spending from state revenues or spending on other programs. This paper extends that analysis through fiscal year 2018. This is important as during this period the ACA federal match rate declined from 100% to

---

[6] The Congressional Budget Office (2019) reports Social Security cost $982 billion, defense $623 billion, Medicare $582 billion, and Medicaid $389 billion in fiscal year 2018, with net interest close behind Medicaid at $325 billion.

94% in expansion states, raising the possibility of rising state spending and potential crowd-out of other state programs.

In fact, we find evidence completely consistent with our earlier paper: state fiscal balances have not been negatively impacted by the Medicaid expansions. Even in recent years when states are paying a non-trivial share of the costs of the Medicaid expansions, spending from state revenues did not rise significantly. As a result, there were no spillover impacts on spending on other state programs. This suggests that most states are experiencing offsetting savings from bringing in heavily subsidized federal dollars to reduce the states' uninsured rates. The result, from the state perspective, is a "win-win" – increased coverage with no negative budget impact.

Our results likely understate the benefit to the states from the sizeable fiscal stimulus generated by transfers from the federal government to state health sectors. Our estimates imply sizable losses of funding in non-expansion states, with total projected Medicaid spending foregone due to non-expansion in the range of $43 billion, using our model's projections for 2018. Recent macroeconomic research indicates local multiplier effects from Federal spending well in excess of one (Chodorow-Reich, 2019), suggesting that states that expanded Medicaid not only increased coverage rates with no negative budgetary impact but also experienced significant stimulus to their economies.

Importantly, our findings do *not* imply that states that report budget pressures from Medicaid are incorrect – but it does imply that Medicaid expansions are not generally the cause. Underlying trends in Medicaid spending, in particular higher costs for the disabled and elderly populations and expensive new technologies, are potential causes of rising expenditure pressures in expansion and non-expansion states alike. That said, per-enrollee expenditure growth in

Medicaid has actually been slower than that in Medicare and private insurance over the past decade (Holahan, 2019).[7]

Of course, the Medicaid expansion is by no means a free lunch, as the federal government has shouldered the increased spending. As a case study in fiscal federalism, if the goal of the ACA's declining match rate in 2017-2020 was to have states shoulder some of the burden of the expansion, that does not appear to have occurred. A broader consideration of whether this investment of federal dollars has been worthwhile is beyond the scope of the current paper. But a large and growing body of evidence indicates that the Medicaid expansion has substantially improved financial well-being and health among low-income households, shored up hospital finances, and saved thousands of American lives at a cost that compares favorably to other large federal policies (Goldin, Lurie, & McCubbin, 2019; Gruber & Sommers, 2019; Miller, Altekruse, Johnson, & Wherry, 2019; Sommers, 2017).

Finally, our findings also have important implications for block grant proposals that would replace federal matching with a fixed federal contribution. The Centers for Medicare & Medicaid Services (CMS, 2020) recently issued guidance to states inviting them to apply for its "Healthy Adult Opportunity" initiative, which would cap federal spending in states in exchange for enhanced flexibility in designing Medicaid program features for their non-disabled populations. The initiative, while still using a federal match rate, would cap federal contributions at the current level of spending plus a growth rate over time determined by the lesser of the state's own historic growth in Medicaid or the health care component of the consumer price index. Given that this latter index typically grows at a rate significantly below Medicaid costs (Park, 2019), states pursuing this proposal would likely experience significantly

---

[7] Holahan (2019) reports a per-enrollee annual growth rate of 4.4 percent per year in private insurance, 2.4 percent per year in Medicare, and 1.6 percent per year in Medicaid from 2006 to 2017.

greater demands on state revenues over time to support the current scope of their Medicaid programs.[8] Moreover, if the caps are not adjusted during economic downturns, states may be further exposed to budgetary risk due to their inability to use debt financing (Clemens & Ippolito, 2017). Thus, this policy may produce some of the hypothesized negative effects on state budgets – crowd-out of non-health care spending and budget shortfalls – that some predicted would occur under Medicaid expansion, but that have not occurred. Our findings suggest that the ACA's Medicaid expansion to date has not produced negative state budget impacts; the effects of future policy changes like the Health Adult Opportunity will similarly need to be evaluated over time.

---

[8] As noted by Park (2019), current CBO projections for Medicaid per-beneficiary spending show an increase of 4.4 percent per year over the coming decade, in contrast to 2.4 percent for general inflation and 3.7 percent for medical inflation.

References

Aizer, A. (2007). Public Health Insurance, Program Take-Up, and Child Health. *Review of Economics and Statistics, 89*(3), 400-415.

Ayanian, J. Z., Ehrlich, G. M., Grimes, D. R., & Levy, H. (2017). Economic Effects of Medicaid Expansion in Michigan. *The New England journal of medicine*. doi: 10.1056/NEJMp1613981

Bachrach, D., Boozang, P., Herring, A., & Reyneri, D. G. (2016). States Expanding Medicaid See Significant Budget Savings and Revenue Gains. Princeton, NJ: Robert Wood Johnson Foundation.

Baicker, K. (2005). The spillover effects of state spending. *J Pub Econ, 89*, 529-544.

Baicker, K., & Staiger, D. (2005). Fiscal Shenanigans, Targeted Federal Health Care Funds, and Patient Mortality. *Q J Econ, 120*(1), 345-386.

Buettgens, M. (2018). The Implications of Medicaid Expansion in the Remaining States: 2018 Update *Timely Analysis of Immediate Health Policy Issues*. Washington, DC: Robert Wood Johnson Foundation / Urban Institute.

CBO. (2005). The Budget and Economic Outlook: Fiscal Years 2005 to 2014 Washington, D.C.: Congressional Budget Office.

CBO. (2007). The Impact of Unauthorized Immigrants on the Budgets of State and Local Governments. Washington, D.C.: Congressional Budget Office.

CBO. (2019). The Federal Budget in 2018: An Infographic. Washington, DC: Congressional Budget Office (CBO).

Chodorow-Reich, G. (2019). Geographic Cross-Sectional Fiscal Spending Multipliers: What Have We Learned? *AEJ: Policy, 11*(2), 1-34.

Clemens, J., & Ippolito, B. (2017). Implications of Medicaid Financing Reform for State Governmet Budgets *Working Paper*. Cambridge, MA: National Bureau of Economics Research.

CMS. (2020). State Medicaid Director Letter: Healthy Adult Opportunity. Baltimore, MD: Centers for Medicare & Medicaid Services (CMS).

Courtemanche, C., Marton, J., Ukert, B., Yelowitz, A., & Zapata, D. (2016). Early Impacts of the Affordable Care Act on Health Insurance Coverage in Medicaid Expansion and Non-Expansion States. *Journal of policy analysis and management : [the journal of the Association for Public Policy Analysis and Management], 36*(1), 178-210.

Courtemanche, C., Marton, J., Ukert, B., Yelowitz, A., & Zapata, D. (2018). Effects of the Affordable Care Act on Health Care Access and Self-Assessed Health After 3 Years. *Inquiry : a journal of medical care organization, provision and financing, 55*, 46958018796361. doi: 10.1177/0046958018796361

Dorn, S., Francis, N., Snyder, L., & Rudowitz, R. (2015). The Effects of the Medicaid Expansion on State Budgets: Kaiser Family Foundation.

Duggan, M., Gupta, A., & Jackson, E. (2019). The Impact of the Affordable Care Act: Evidence from California's Hospital Sector *NBER Working Paper*. Cambridge, MA: National Bureau of Economic Research.

Elmendorf, D. W. (2012). Estimates for the Insurance Coverage Provisions of the Affordable Care Act Updated for the Recent Supreme Court Decision. Washington DC: Congressional Budget Office.

Frean, M., Gruber, J., & Sommers, B. D. (2017). Premium subsidies, the mandate, and Medicaid expansion: Coverage effects of the Affordable Care Act. *Journal of health economics, 53*, 72-86. doi: 10.1016/j.jhealeco.2017.02.004

Goldin, J., Lurie, I. Z., & McCubbin, J. (2019). Health Insurance and Mortality: Experimental Evidence from Taxpayer Outreach *Working Paper*. Cambridge, MA: National Bureau of Economics Research.

Goodman, L. (2017). The Effect of the Affordable Care Act Medicaid Expansion on Migration. *Journal of policy analysis and management : [the journal of the Association for Public Policy Analysis and Management], 36*(1), 211-238. doi: 10.1002/pam.21952

Grogan, C. (1994). Political-Economic Factors Influencing State Medicaid Policy. *Political Research Quarterly, 47*(3), 589–622.

Grossman, P. J. (1994). A Political Theory of Intergovernmental Grants. *Public Choice, 78*(3), 295–303.

Gruber, J., & Sommers, B. D. (2019). The Affordable Care Act's Effects on Patients, Providers and the Economy: What We've Learned So Far. *J Policy Anal Management, 38*(4), 1028-1052.

Hall, M. (2018). Do states regret expanding Medicaid? Washington, DC: USC-Brookings Schaeffer Initiative for Health Policy.

Holahan, J. (2019). Slow Growth in Medicare and Medicaid Spending per Enrollee Has Implications for Policy Debates. Washington, DC: Urban Institute / Robert Wood Johnson Foundation.

Horton, N., & Ingram, J. (2018). How the ObamaCare dependency crisis could get even worse — and how to stop it. Naples, FL: Foundation for Government Accountability.

Iglehart, J. K., & Sommers, B. D. (2015). Medicaid at 50--from welfare program to nation's largest health insurer. *The New England journal of medicine, 372*(22), 2152-2159. doi: 10.1056/NEJMhpr1500791

Kaiser. (2020). Status of State Action on the Medicaid Expansion Decision. from http://kff.org/health-reform/state-indicator/state-activity-around-expanding-medicaid-under-the-affordable-care-act/

Kenney, G. M., Lynch, V., Haley, J., & Huntress, M. (2012). Variation in Medicaid eligibility and participation among adults: implications for the Affordable Care Act. *Inquiry : a journal of medical care organization, provision and financing, 49*, 231-253.

Kessler, G. (2011, 5 July). A well-used but misleading Medicaid statistic. *Washington Post*. Retrieved from https://http://www.washingtonpost.com/blogs/fact-checker/post/a-well-used-but-misleading-medicaid-statistic/2011/07/01/AG1feHvH_blog.html

Levy, H., Ayanian, J. Z., Buchmueller, T. C., Grimes, D. R., & Ehrlich, G. (2020). Macroeconomic Feedback Effects of Medicaid Expansion: Evidence from Michigan. *Journal of Health Politics Policy and Law, 45*(1), 5-48. doi: 10.1215/03616878-7893555

Miller, S., Altekruse, S., Johnson, N., & Wherry, L. R. (2019). Medicaid and Mortality: New Evidence from Linked Survey and Administrative Data *Working Paper*. Cambridge, MA: National Bureau of Economics Research.

NASBO. (2019). 2019 State Expenditure Report: Fiscal Years 2017-2019. Washington, DC: National Association of State Budget Officers (NASBO).

Park, E. (2019). New Study Finds Medicaid Per Capita Caps and Block Grants Would Lead to Deep Cuts to Children's Coverage and Access. Washington, DC: Georgetown University.

Schwartz, A. L., & Sommers, B. D. (2014). Moving for medicaid? Recent eligibility expansions did not induce migration from other states. *Health affairs, 33*(1), 88-94. doi: 10.1377/hlthaff.2013.0910

Sommers, B. D. (2017). State Medicaid Expansions and Mortality, Revisited: A Cost-Benefit Analysis. *American Journal of health economics, 3*(3), 392-421.

Sommers, B. D., & Epstein, A. M. (2013). U.S. governors and the Medicaid expansion--no quick resolution in sight. *The New England journal of medicine, 368*(6), 496-499. doi: 10.1056/NEJMp1215785

Sommers, B. D., & Gruber, J. (2017). Federal Funding Insulated State Budgets From Increased Spending Related To Medicaid Expansion. *Health affairs, 36*(5), 938-944. doi: 10.1377/hlthaff.2016.1666

Sommers, B. D., Maylone, B., Blendon, R. J., Orav, E. J., & Epstein, A. M. (2017). Three-Year Impacts Of The Affordable Care Act: Improved Medical Care And Health Among Low-Income Adults. *Health affairs, 36*(6), 1119-1128. doi: 10.1377/hlthaff.2017.0293

Sutter, D. (2018). The Political Economy of Medicaid Expansion: Federalism, Interest Groups, and the ACA *Mercatus Center Research Paper Series*. Arlington, VA: George Mason University.

Table 1. Average Annual State Spending in Billions of Dollars, Pre-Medicaid Expansion (2010-2013)

	Expansion States	Non-Expansion States
Total Spending	40.47	31.60
Category of Spending		
Medicaid	9.42	7.63
	(23.28%)	(24.15%)
K-12 Education	8.00	6.58
	(19.77%)	(20.82%)
Higher Education	3.56	4.40
	(8.80%)	(13.92%)
Transportation	2.99	2.59
	(7.39%)	(8.20%)
Corrections	1.28	1.00
	(3.16%)	(3.16%)
Public Assistance	0.83	0.19
	(2.05%)	(0.60%)
Other	14.38	9.20
	(35.53%)	(29.11%)
Source of Funds		
Federal Funds	12.65	11.09
	(31.26%)	(35.09%)
State Funds	26.80	20.00
	(66.22%)	(63.29%)

Notes: All figures adjusted to 2019 real dollars. Numbers in parentheses are % of total spending. Federal plus state funds equal less than 100% because the residual is funded by bonds

Table 2. Changes in State Spending by Category Due to Medicaid Expansion (2010-2018)

Category	(1) Medicaid Expansion	(2) Medicaid Expansion	(3) Medicaid Expansion	(4) Medicaid Expansion	(5) Medicaid Expansion
Medicaid	0.18***	0.18***	0.23***	0.18***	0.11***
	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)
K-12 Education	-0.02	-0.02	-0.05	-0.02	-0.01
	(0.03)	(0.02)	(0.03)	(0.03)	(0.02)
Higher Education	-0.12***	-0.11***	-0.13**	-0.09*	-0.02
	(0.04)	(0.04)	(0.05)	(0.05)	(0.04)
Transportation	0.10	0.09	0.08	0.11	0.06
	(0.07)	(0.06)	(0.11)	(0.07)	(0.05)
Corrections	-0.01	-0.02	-0.03	-0.03	-0.00
	(0.03)	(0.03)	(0.05)	(0.04)	0.03
Public Assistance	0.24	0.21	0.18	0.28	0.09
	(0.19)	(0.15)	(0.22)	(0.21)	(0.07)
Other	0.10	0.09	0.10	0.13	0.03
	(0.06)	(0.06)	(0.08)	(0.07)	(0.07)
Year fixed effects	√	√	√	√	√
State fixed effects	√	√	√	√	√
State Time Trends					√
Economic Controls: Unemployment, Per Capita Income		√	√	√	√
2014-2016 Wash-Out Period†			√		
Exclude Post-2014 Expanding States				√	

Notes: Standard errors in parentheses; *p<0.10, **p<0.05, ***p<0.01
† 2014-2016 wash-out period omits from the sample the 3 years in which the federal government paid 100% of the Medicaid expansion costs for newly-eligible adults.
All models use state-clustered robust standard errors. Years refer to state fiscal years.

Table 3. Parallel Trends Testing, Pre-Medicaid Expansion (2010-2013)

Variable	(1) Expansion State * Year	(2) Expansion 2013 Placebo
Medicaid	-0.004	-0.002
	(0.009)	(0.010)
K-12 Education	-0.000	-0.016
	(0.020)	(0.023)
Higher Education	-0.077***	-0.058*
	(0.026)	(0.033)
Transportation	0.023	0.017
	(0.017)	(0.015)
Corrections	0.001	0.008
	(0.015)	(0.014)
Public Assistance	0.049	0.021
	(0.044)	(0.030)
Other	0.018	0.005
	(0.025)	(0.025)
Total Spending	-0.000	-0.005
	(0.009)	(0.010)
Federal Funds	-0.008	-0.015
	(0.014)	(0.015)
State Funds	-0.007	-0.006
	(0.010)	(0.010)

Notes: Standard errors in parentheses; *p<0.10, **p<0.05, ***p<0.01

Model (1) tests for a significant linear time trend for each outcome for expansion states vs. non-expansion states prior to Medicaid expansion, from 2010-2013. Model (2) tests for a placebo effect of Medicaid expansion the year prior to expansion in 2013, with state and year fixed effects and state-clustered robust standard errors.

All models control for state-year unemployment rate and per capita income.

Years refer to state fiscal years.

Table 4. Changes in State Spending by Funding Source Due to Medicaid Expansion (2010-2018)

Funding Source	(1) Medicaid Expansion	(2) Medicaid Expansion	(3) Medicaid Expansion	(4) Medicaid Expansion	(5) Medicaid Expansion
Total Spending	0.07**	0.06*	0.08	0.09**	0.03
	(0.03)	(0.03)	(0.05)	(0.04)	(0.03)
Federal Funds	0.20***	0.19***	0.24***	0.20***	0.12***
	(0.04)	(0.04)	(0.05)	(0.05)	(0.04)
State Funds	0.02	0.01	0.00	0.03	-0.00
	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)
Year fixed effects	√	√	√	√	√
State fixed effects	√	√	√	√	√
State Time Trends					√
Economic Controls: Unemployment, Per Capita Income		√	√	√	√
2014-2016 Wash-Out Period†			√		
Exclude Post-2014 Expanding States				√	

Notes: Standard errors in parentheses; *p<0.10, **p<0.05, ***p<0.01

† 2014-2016 wash-out period omits from the sample the 3 years in which the federal government paid 100% of the Medicaid expansion costs for newly-eligible adults. Years refer to state fiscal years.

All models use state-clustered robust standard errors.

Table 5. Changes in Relative and Per Capita State Spending in 2018, Compared to 2013 Baseline, Due to Medicaid Expansion

Coefficient of Interest	(1) Expansion * Year2018	(2) Expansion * Year2018	(3) Expansion * Year2018 * Uninsured2013	(4) Expansion * Year2018 * Uninsured2013
Dependent Variable	Ln(Spending)	Per Capita Spending ($)	Ln(Spending)	Per Capita Spending ($)
Medicaid	0.242***	482***	1.750***	2,654***
	(0.038)	(51)	(0.535)	(826)
K-12 Education	-0.019	18	-0.433	-357
	(0.033)	(40)	(0.461)	(601)
Higher Education	-0.013	-15	1.164	510
	(0.081)	(45)	(2.328)	(1,094)
Transportation	0.002	11	-1.905	-1,166
	(0.089)	(63)	(1.404)	(945)
Corrections	-0.045	-4	0.710	124
	(0.051)	(8)	(0.863)	(144)
Public Assistance	0.160	-4	1.539	427
	(0.241)	(10)	(3.811)	(206)
Other	0.079	247	0.218	-6,031
	(0.087)	(496)	(1.361)	(7,274)
Total Spending	0.079	734	-0.051	-3,838
	(0.055)	(589)	(0.828)	(8,633)
Federal Funds	0.275***	629***	-0.839	-450
	(0.065)	(165)	(1.028)	(2,603)
State Funds	0.007	126	-0.171	-3,225
	(0.032)	(470)	(0.918)	(6,800)

**Notes:** Standard errors in parentheses; *p<0.10, **p<0.05, ***p<0.01

Columns 1 & 2 present estimates for the interaction term between ExpansionState and Year2018 in a DD-like event study. Columns 3 & 4 present estimates for the interaction term between ExpansionState, Year2018, and the pre-ACA (2013) uninsured rate (adults 19-64) in a triple-difference-like event study. Both models control for state-year unemployment rate and per capita income. All models use state-clustered robust standard errors. Years refer to state fiscal years.

**Table 6. Annual Medicaid Spending Foregone In Non-Expansion States (2019 dollars),
Due to Non-Expansion**

State	Pre-ACA (2013) Uninsured Population, Ages 19-64	Medicaid Spending Foregone (Millions of $)
Alabama	582,200	$1,560
Florida	3,291,300	$8,821
Georgia	1,551,700	$4,159
Idaho	214,700	$575
Kansas	293,100	$786
Maine	129,900	$348
Mississippi	431,000	$1,155
Missouri	656,500	$1,759
Nebraska	164,300	$440
North Carolina	1,329,600	$3,563
Oklahoma	548,900	$1,471
South Carolina	643,400	$1,724
South Dakota	85,900	$230
Tennessee	786,000	$2,106
Texas	4,661,100	$12,492
Utah	293,100	$786
Wisconsin	437,400	$1,172
Wyoming	63,200	$169

Notes: Table presents predicted annual change in total Medicaid spending in a given state (in 2019 dollars) if the state had expanded Medicaid. Estimates are derived from the results in Table 5 on the per-person cost of Medicaid expansion – see text for details.

Figure 1: Event Study of Changes in Medicaid Spending Due to Medicaid Expansion (2010-2018)
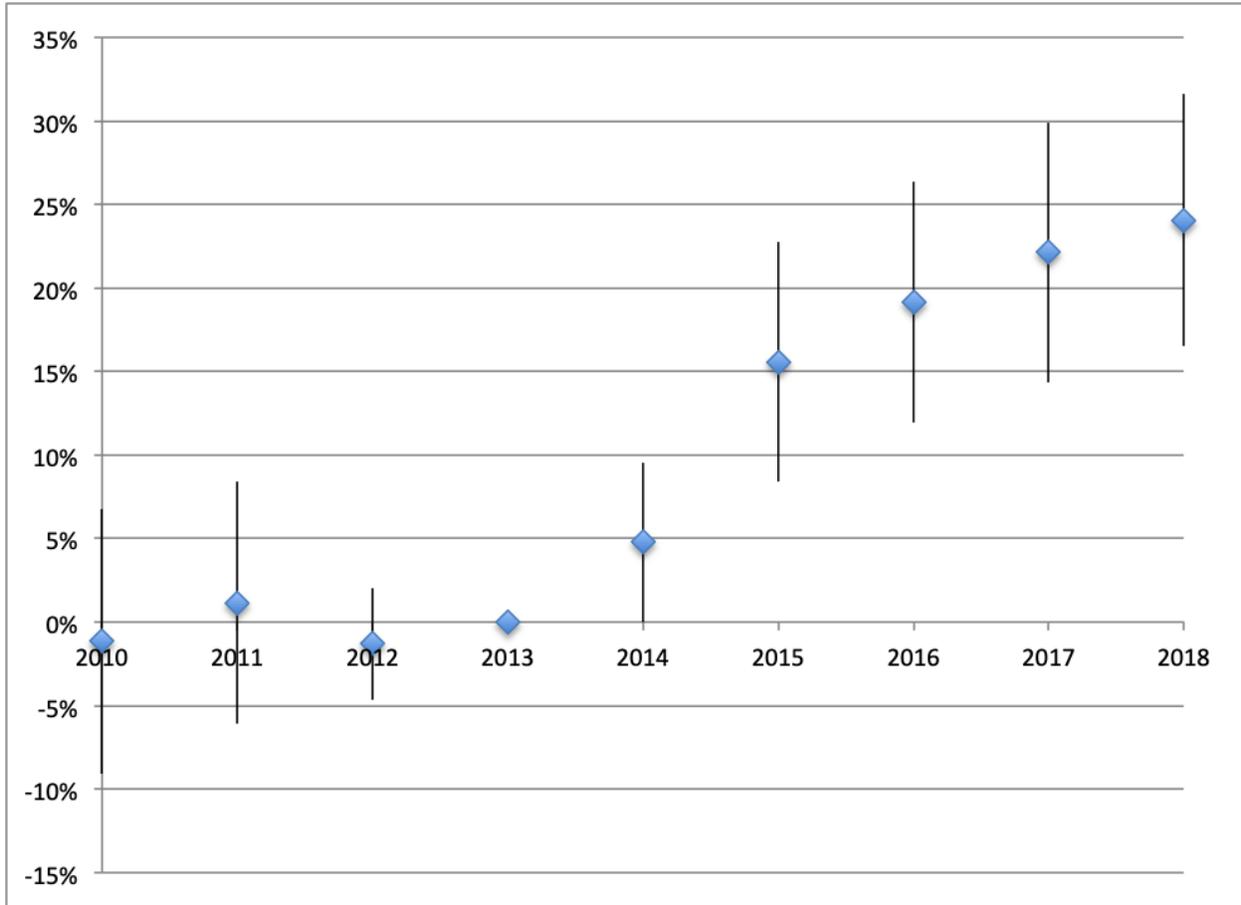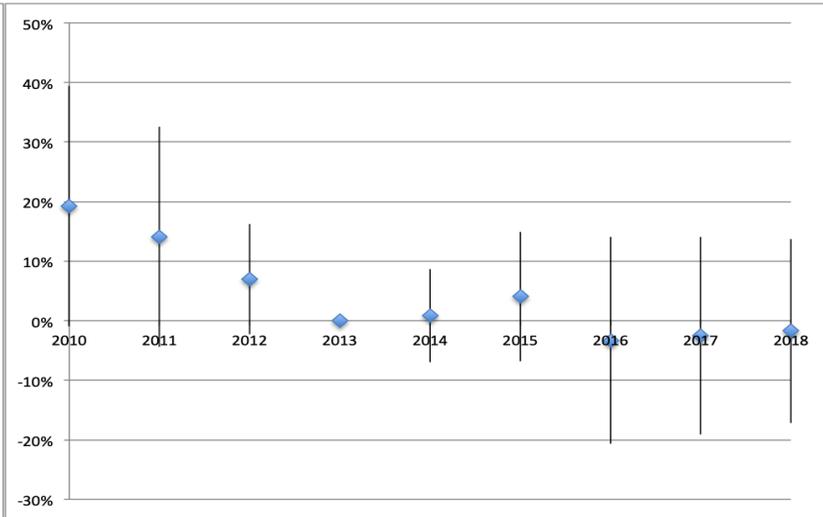

Notes: Figure shows relative changes per year from an analysis of ln(spending) for states that have expanded Medicaid as of 2018, compared to non-expansion states, with 2013 as the reference year. Bars show 95% confidence intervals, using robust state-clustered standard errors. Models adjust for state-year unemployment rates and per capita income.

Figure 2: Event Study of Changes in Non-Medicaid Categories of Spending, Before and After Medicaid Expansion (2010-2018)
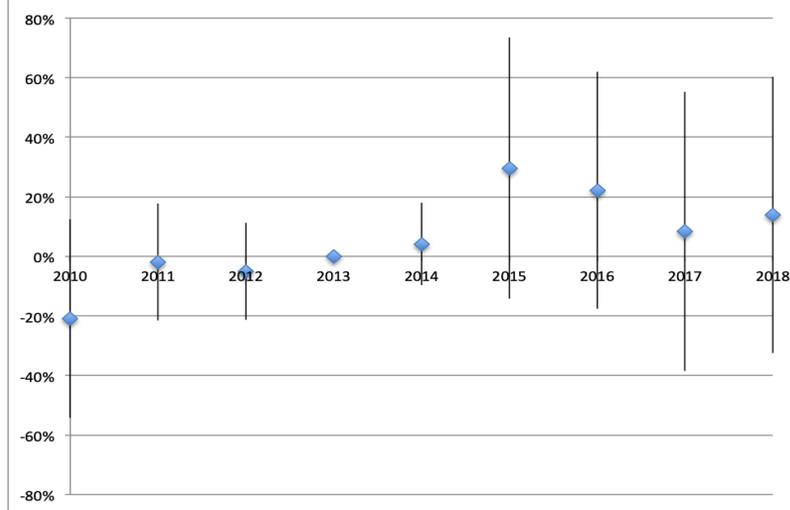
Panel A: K-12 Education
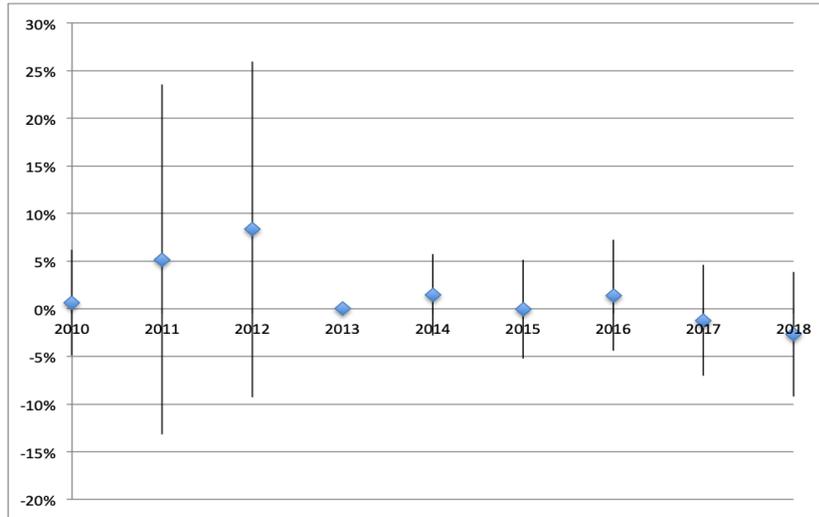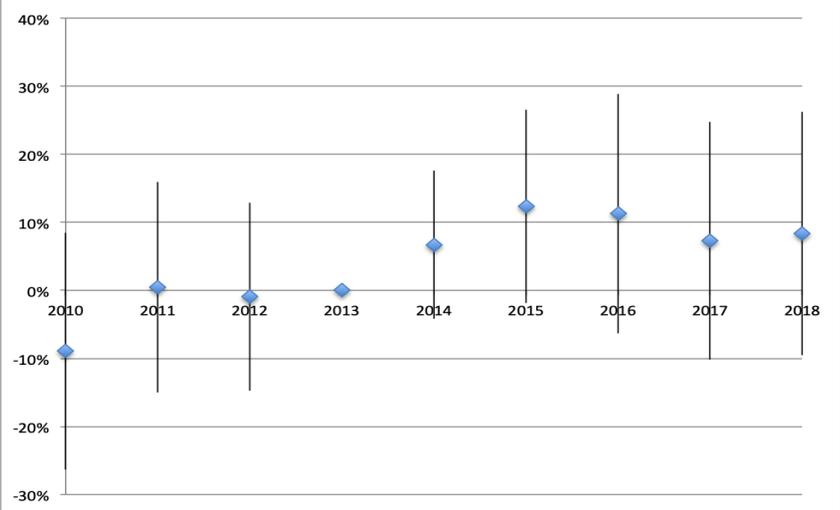
Panel B: Higher Education

Panel C: Transportation
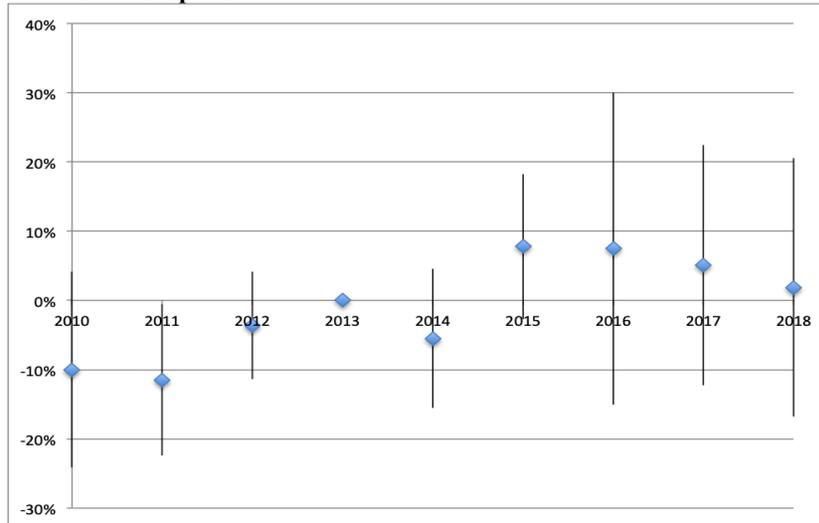
Panel D: Corrections
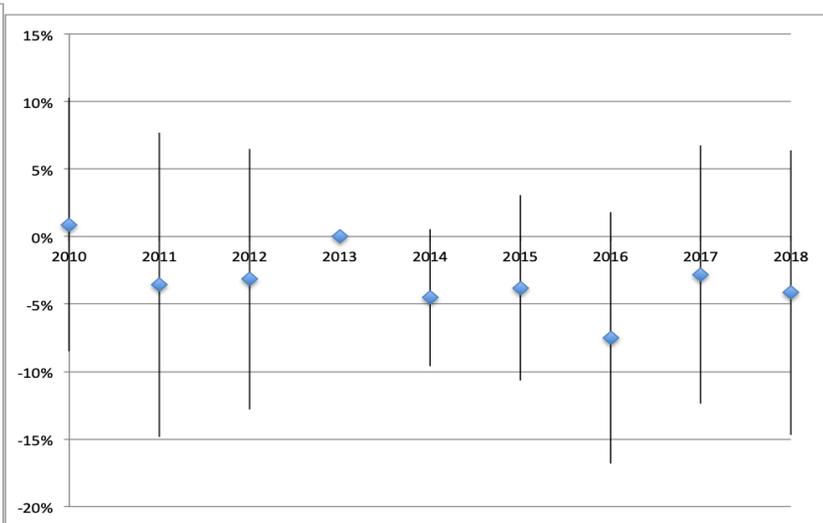
Panel E: Public Assistance
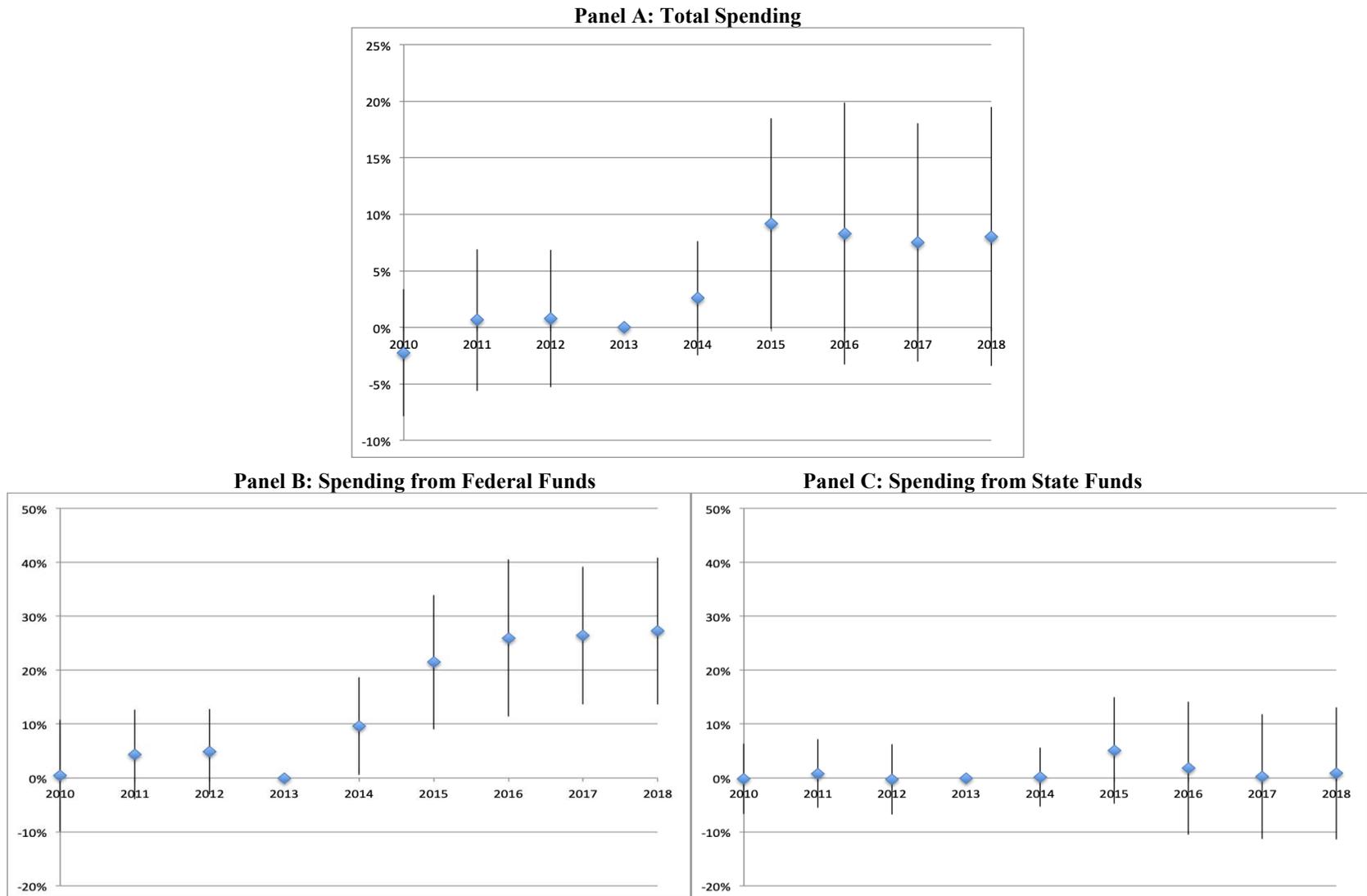

Panel F: Other Spending

Notes: Figures show relative changes per year from an analysis of ln(spending) for states that have expanded Medicaid as of 2018, compared to non-expansion states, with 2013 as the reference year. Bars show 95% confidence intervals, using robust state-clustered standard errors. Models adjust for state-year unemployment rates and per capita income.

34

Figure 3: Event Study of Total Spending and Spending by Source, Before and After Medicaid Expansion (2010-2018)

Panel A: Total Spending

Panel B: Spending from Federal Funds

Panel C: Spending from State Funds

Notes: Figures show relative changes per year from an analysis of ln(spending) for states that have expanded Medicaid as of 2018, compared to non-expansion states, with 2013 as the reference year. Bars show 95% confidence intervals, using robust state-clustered standard errors. Models adjust for state-year unemployment rates and per capita income.

Figure 4: Estimated vs. Actual Spending on Medicaid Expansion (2010-2019)

Panel A: Medicaid Spending	Panel B: State Spending
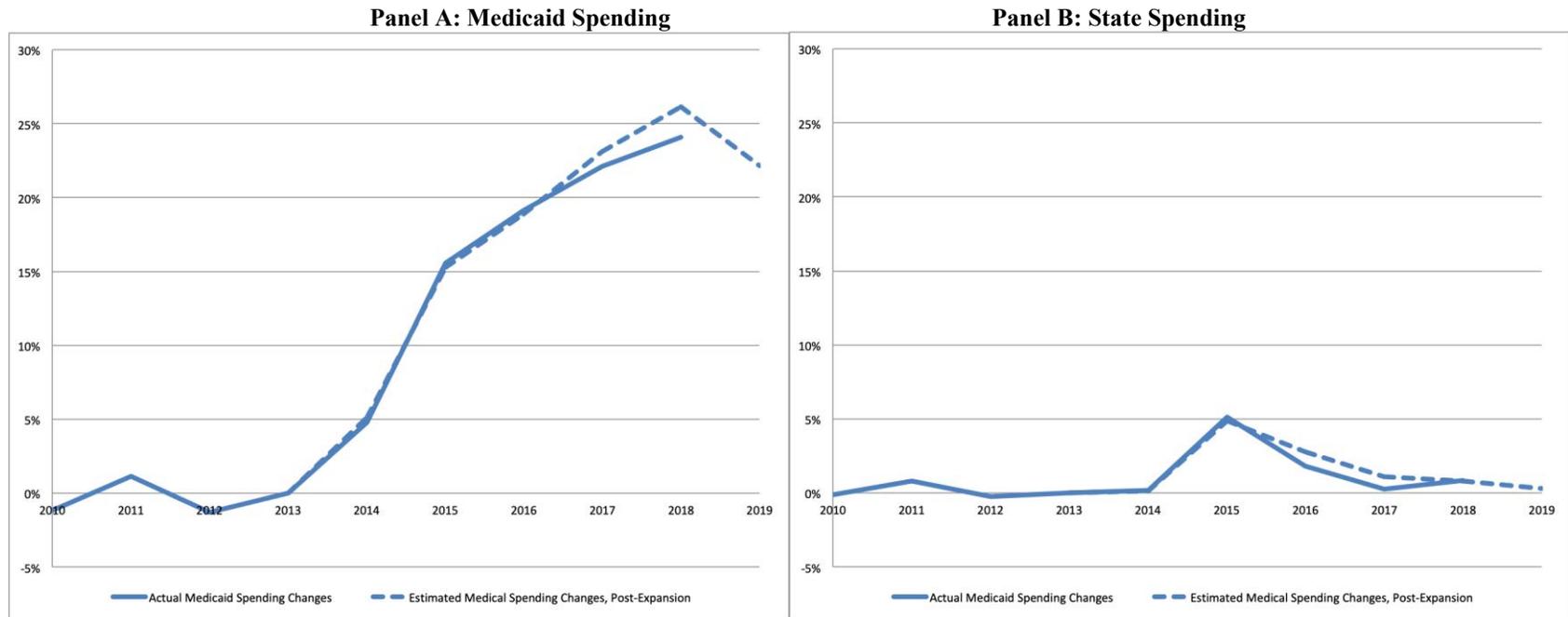
Notes: The solid lines report point estimates for the event study of each spending outcome from 2010-2018, using actual spending data. The dashed lines replace actual data (retrospective for prior years) with prospective estimates at the time of each fiscal year for Medicaid expansion states in the post-expansion period (2014-2019). Estimated data but no actual data for 2019 are currently available. The divergence between the two lines shows the gap between estimated and actual spending for Medicaid expansion states. Models adjust for state-year unemployment rates and per capita income.