Medicaid and Fiscal Federalism During the COVID-19 Pandemic

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Abstract: We analyze the effects of the COVID-19 pandemic on state and local government finances, with an emphasis on health spending needs and the role of the Medicaid program. We arrive at three conclusions. First, we find that nationwide, and over the entirety of the federal budget window, the enhanced federal matching funds are of roughly the same magnitude as expected increases in state Medicaid costs. There is a difference in timing, however, as projected relief funds are more concentrated in the near term than projected spending needs. Second, we show that there is substantial variation in states' exposure to increases in Medicaid program costs. Third, we evaluate the extent to which federal aid has been targeted at states with large increases in Medicaid costs. We show that the enhanced Medicaid matching funds are quite weakly correlated with variations in states' cost increases. In contrast, the state aid formula in the American Recovery Plan Act appears, to at least a moderate degree, to direct dollars toward states with large increases in their Medicaid enrollments.

Keywords: COVID-19, Fiscal Federalism, Medicaid

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Federal Fiscal Stabilization in the United States

Our aim in this paper is to describe the fiscal challenges that confront state and local governments as a result of the COVID-19 pandemic, and the federal government's role in addressing them. As we have discussed elsewhere (Clemens and Veuger, 2020a), challenges arise due to three factors. First, to varying degrees, state and local governments are constrained by balanced budget requirements. Second, the pandemic has adversely affected revenues. Third, the pandemic has increased certain expenditure needs. In this paper, we attempt to have a unified discussion of these issues, with an emphasis on health spending needs and the role of the Medicaid program.

Taken together, state and local governments serve a broad set of functions. They administer and at least partially finance many public services, as well as major income-support programs. The services provided by state and local governments range from education to public safety and public utilities. In recent years, the delivery of these services had led state and local governments to employ just under 20 million workers (Shoag and Veuger, 2020). This accounts for roughly 13 percent of all nonfarm employment.

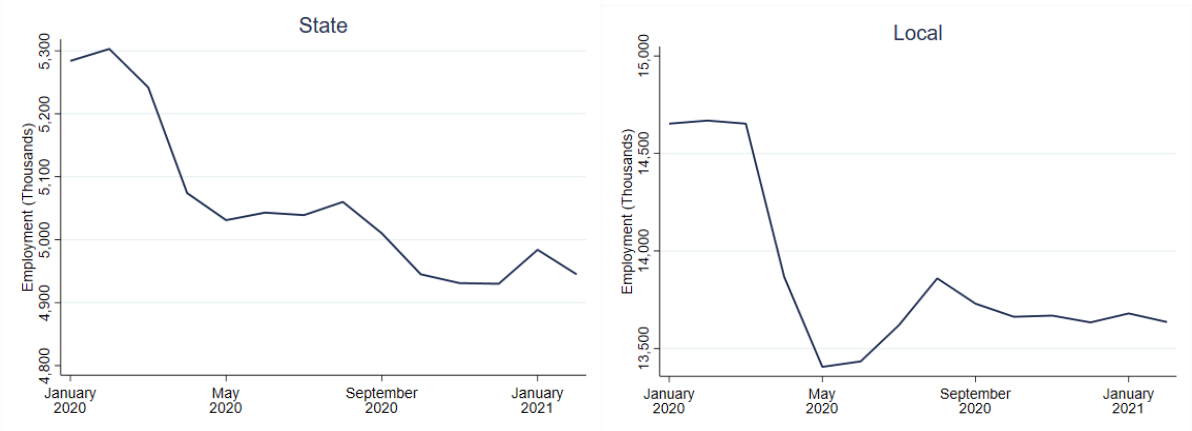
The motivation for federal fiscal stabilization arises from state and local balanced-budget constraints. When state governments face downturns their balanced budget rules prevent them from contributing to countercyclical policy and in fact force them to engage in procyclical policy.[1] As revenues decline and spending needs rise, compliance with balanced-budget rules dictates increases in tax rates and a search for budgetary savings. Savings may come from wage freezes and layoffs for members of the public-sector work force. Figure 1 illustrates the

[1] Rainy-day funds and federal aid can keep this from happening.

reductions in state and local government employment that took place between January 2020 and February 2021. This can, in turn, imply reductions in service delivery just as needs run high.

Given the existence of states' balanced-budget requirements, it is not surprising that the federal government has a history intervening to reduce states' fiscal stress. The 2009 American Recovery and Reinvestment Act, which included $232 billion in support for state governments, is a prominent example (US Bureau of Economic Analysis (BEA), 2020b). In the current crisis, federal support for state and local governments has come piecemeal through existing and new legislation discussed below. This support is of central importance to the US system of fiscal federalism, which is characterized by heavy reliance on the central fiscal authority for countercyclical policy.[2]

Figure 1: State and Local Government Employment in 2020 and 2021



Note: Data are from the Bureau of Labor Statistics (2020a; 2020b) and show employment levels in thousands starting in January 2020.

In the next section we summarize what is known about the COVID-19 pandemic's impacts on the revenues and expenditure needs of state and local governments. We also discuss the major

[2] European institutions demonstrate that this is not an inevitable feature of continent-spanning economic and currency unions (EU, 2019; Lenzi and Zoppè, 2020).

provisions in federal legislation that have been enacted to support state and local government budgets. We then turn to the meat of the paper: a discussion of the role of the Medicaid and CHIP programs, which highlights the complex relationships between new spending needs, intergovernmental transfers, and the conditions on which the federal government makes its aid contingent. Medicaid is of particular importance in the current context for three reasons: it provides health insurance, which may be more important during a pandemic than in normal times; it provides a safety net for workers who have lost their employment, as so many did during the COVID-19 recession; and it was the channel through which the federal government provided some of its earliest financial support to the states, both through Medicaid's normal financing and by increasing the federal matching rate. It also provides us with a setting that lets us illustrate the heterogeneity across states in new spending needs. This allows us, in turn, to assess how effective federal aid has been in dealing with that heterogeneity.

We conclude the paper with a discussion of the conditions under which federal funding, for Medicaid in particular, is provided to state and local governments. We discuss the relevance of the timing and duration of federal aid flows, as well as the importance of uncertainty surrounding these parameters.

State and Local Government Budgets During the COVID-19 Crisis

The COVID-19 crisis has changed the budgetary situation of US state and local governments through three main routes. These routes include changes in tax and other revenue, increases in spending needs, and increases in flows of federal aid.

Several analyses have undertaken the task of estimating the revenue shortfalls that are likely to face state and local governments over the current fiscal year. The preferred approach for

projecting shortfalls makes use of forecasts for macroeconomic variables that are reasonably close proxies for major revenue bases. This is the approach taken in Clemens and Veuger (2020a; 2020b), Whitaker (2020a; 2020b), Auerbach et al. (2020), and Chernick et al. (2020). Following this basic approach, a recent estimate finds that the total revenue shortfall for state and local governments between April 2020 and June 2021 amounts to about $130 billion (Clemens and Veuger, 2021).[3]

The aggregate revenue shortfall across states masks significant heterogeneity. Across states, for example, Auerbach et al. (2020) estimate a loss of revenue, expressed as a share of own-source revenue, excluding fees to hospitals and institutions of higher-education, that ranges from 3.1 percent in Kansas to 9.6 percent in Nevada. This variation reflects, among other things, variation in state and local governments' reliance on different tax instruments as well as differences in the distribution of economic activity across sectors.

A second factor to consider are the actions already taken by the federal government to support state and local government budgets. The federal government's initial response to the economic downturn triggered by the COVID-19 pandemic was swift and sizable. In March and April last year, Congress and the executive branch passed a number of pieces of legislation that together provided trillions of dollars in relief. Auerbach et al. (2020) calculate that between the Families First Coronavirus Response Act (FFCRA), the Coronavirus Aid, Relief, and Economic Security (CARES) Act, and the Paycheck Protection Program and Health Care Enhancement (PPPHCE) Act, the federal government provided up to "$212 billion in aid to state and local governments, excluding aid to public hospitals and higher ed, and $250 billion including that

[3] This time period spans the pandemic's first 5 quarters. June 2021 is when fiscal year 2021 ends for all but a few states. Shortfall estimates have declined in magnitude as forecasts, in particular from the Congressional Budget Office, have improved relative to the most pessimistic estimates from the summer of 2020.

aid" in 2020. If we add to that the relief funds for state and local governments included in the December 2020 Consolidated Appropriations Act of 2021, the overall number exceeds $300 billion (Clemens and Veuger, 2021; Committee for a Responsible Federal Budget, 2020). Finally, the American Rescue Plan Act (ARPA) of 2021, which became law in March 2021, contains well over $500 billion in additional funding directed at state and local governments (Committee for a Responsible Federal Budget, 2021a). In summary, total federal aid for state and local governments allocated so far is in excess of $800 billion, much of which will be allocated before the end of the 2021 fiscal year (Committee for a Responsible Federal Budget, 2021b).

Among these funding streams, the most important for our Medicaid analysis is that the aforementioned FFCRA raised the federal matching assistance percentage for the bulk of states' Medicaid expenditures by 6.2 percentage points. This increase, which we discuss at length in the next section, applies for the duration of the formally declared public health crisis.

Finally, state and local governments have incurred increased spending as a result of the pandemic. In the following section, we discuss spending increases in the Medicaid program at length. Other important categories of state and local governments spending include K-12 and higher education, healthcare and welfare spending outside the Medicaid program, unemployment and retirement benefits, public safety, housing, and utilities. In Clemens, Ippolito, and Veuger (2020) we estimate that state and local governments may face elevated operating costs from their usual activities on the order of $50 billion for the 2021 fiscal year. The bulk of these costs are linked to the operation of schools for students in grades K-12. This estimate is quite rough and does not include extraordinary public health and relief spending in direct response to the crisis. This summary of the COVID-19 pandemic's fiscal impacts suggests that, in the aggregate and throughout the current fiscal year, state and local government budgets are unlikely to face unmet

fiscal needs. After all, if revenue losses amount to $130 billion, federal aid exceeds $800 billion, and new spending needs for existing programs are around $50 billion, the net change in state and local budget balances is surely positive. The $800 billion in federal aid leaves substantial fiscal space to absorb state and local government exposure to the cost of vaccine distribution and impromptu relief programs for households and businesses. That said, there is, of course, significant heterogeneity across states and localities.

We will now turn to our main contribution, an analysis of developments surrounding the Medicaid program throughout the crisis. In this analysis, we will highlight the sometimes-complicated interactions between revenue shocks, spending needs, and intergovernmental transfers, which, as discussed thus far in general terms, are the principal mechanisms through which a downturn affects subnational budgets.

Understanding the Pandemic's Implications for States' Medicaid Programs

The pandemic's unusually sharp impact on employment has had substantial effects on both eligibility for Medicaid and the availability of employer provided coverage. In this section, we consider how that has affected state finances and assess the federal government's response.

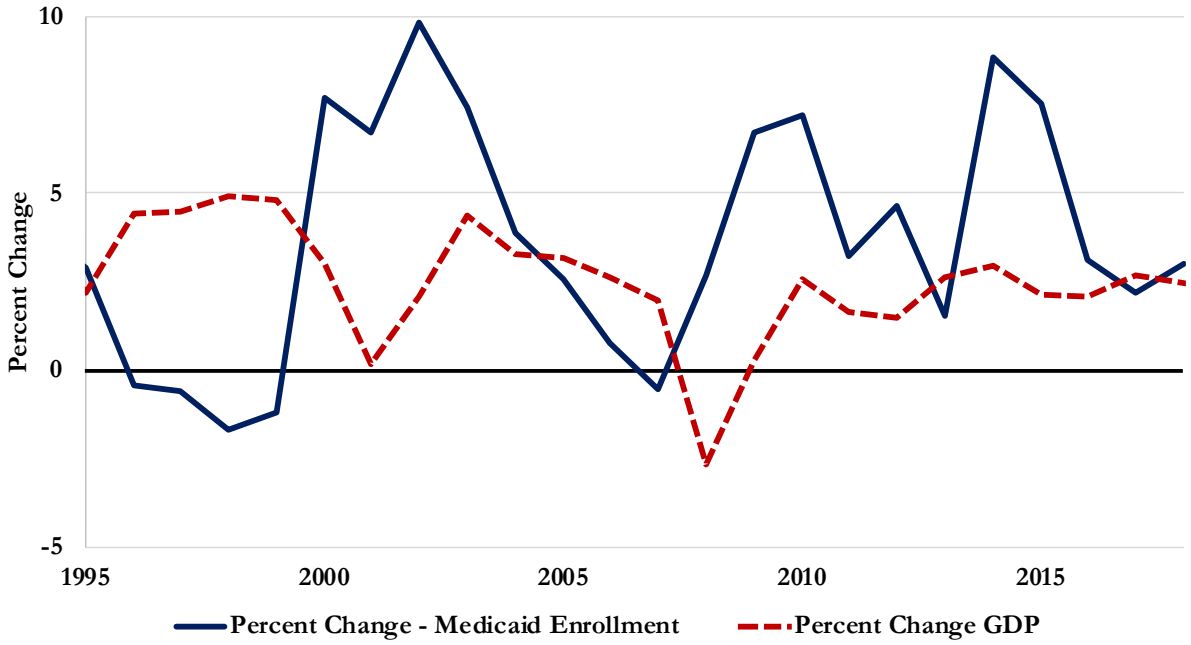
Specifically, we proceed here in five parts. First, we provide evidence on the magnitudes of the total increase in Medicaid and CHIP enrollment and expenditures. We place these increases in context by contrasting them with changes that occurred during both the Great Recession and the recession of the early 2000s. Second, we discuss aspects of the federal response to COVID-19 that have both increased the Medicaid program's expenditures and increased the extent of federal support. Third, we assess the implications of the pandemic and federal response for states' net exposure to expenditures through the Medicaid and CHIP

programs. Fourth, we illustrate the significant heterogeneity across states in Medicaid enrollment increases since the start of the pandemic. Finally, we explore whether federal aid instruments have effectively targeted this dimension of heterogeneity in needs.

The Pandemic's Impacts on Medicaid Enrollment and Expenditure

Owing to the Medicaid program's income-based eligibility requirements, program enrollment and spending typically follow a countercyclical pattern. As shown in Figure 2, for example, Medicaid enrollment increased substantially surrounding both the 2001 recession and Great Recession. Note that the large spike in enrollment in 2014 reflects eligibility expansion connected to the Affordable Care Act (ACA).

Figure 2: Medicaid Enrollment and GDP, Annual Percent Changes, 1995-2018



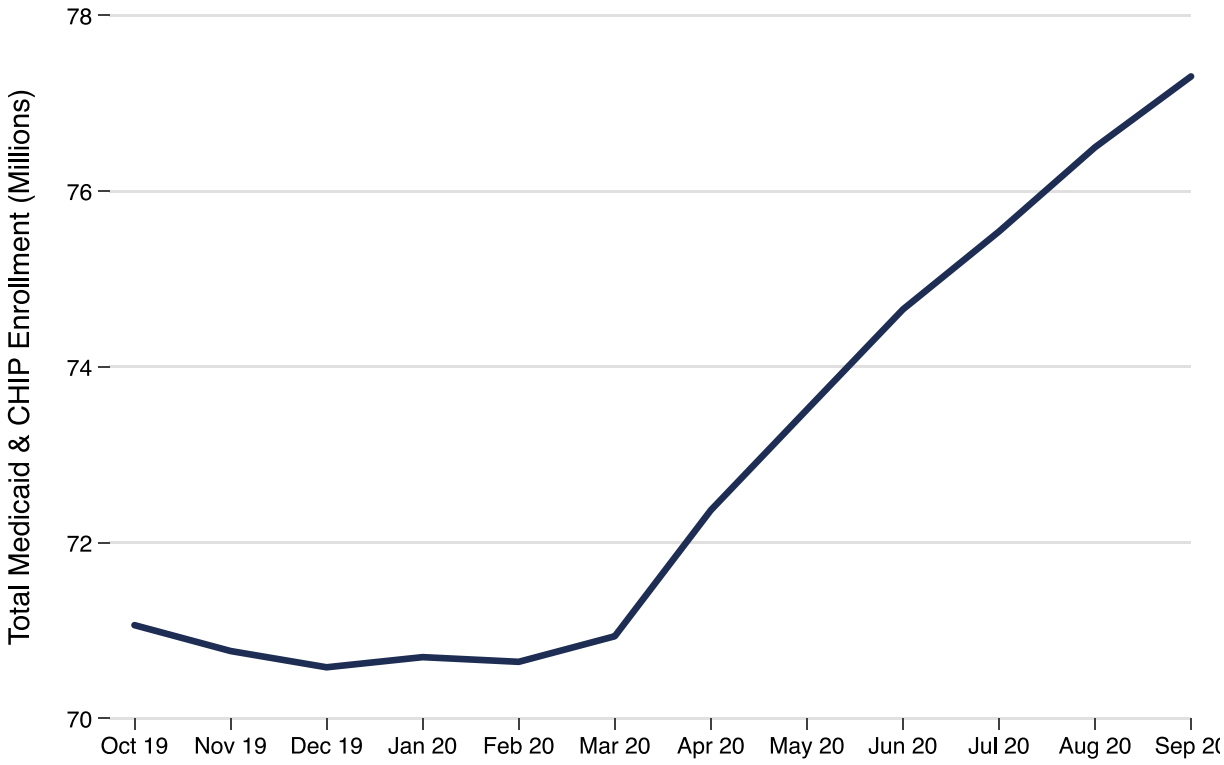
Note: Medicaid enrollment data taken from Medicaid and CHIP Payment Access Commission (MACPAC) (2019). Percent change in seasonally adjusted annual GDP taken from BEA (2020a).

The baseline nature of Medicaid's countercyclicality has evolved in recent years owing to the ACA's Medicaid expansion for childless adults. In states which adopted the ACA's Medicaid

expansion (39 states plus DC), adults with incomes below 138 percent of the Federal Poverty Level ($17,774 for singles, $36,570 for a family of four in 2021) can qualify for Medicaid coverage (Kaiser Family Foundation, 2020b). This represented something of a break from the previously categorical nature of eligibility, which generally required that adults have both low incomes and be aged, disabled, or pregnant. The non-categorical nature of the ACA Medicaid expansion should amplify the growth of enrollment in economic downturns.

Unsurprisingly, the economic downturn associated with COVID-19 has resulted in a sharp increase in Medicaid and CHIP enrollment. Using data from the Centers for Medicare and Medicaid Services (CMS), Figure 3 shows that total enrollment across both programs increased by 6.7 million, or 9.4 percent, from February to September of 2020.

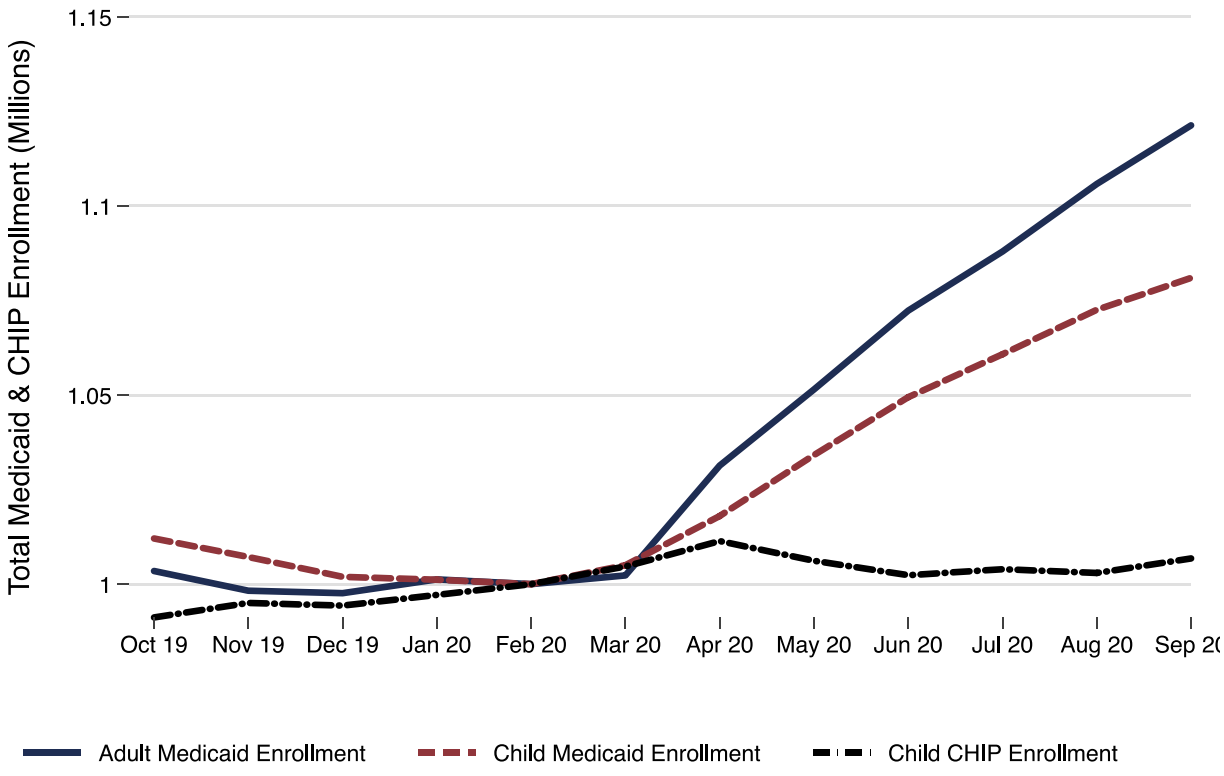
Figure 3: Total Medicaid and CHIP Enrollment, October 2019-September 2020



Note: Data are from Centers for Medicare and Medicaid Services (CMS) (2020b).

Recent enrollment increases have differed meaningfully across eligibility groups. Figure 4 shows enrollment in Medicaid and CHIP for both adults and children, relative to their levels in February of 2020. Note that income eligibility limits are generally higher for children on Medicaid than adults, and higher still for children covered by CHIP (Kaiser Family Foundation, 2020a). Enrollment was relatively stable leading up to February of 2020; however, Medicaid enrollment has increased markedly since, and most so among adults. In September 2020, child Medicaid enrollment had increased 8.1 percent since February, while CHIP coverage saw little change (together, child enrollment across Medicaid and CHIP was up 2.3 million or 6.7 percent). Over that same period, adult Medicaid enrollment was up 12.1 percent.

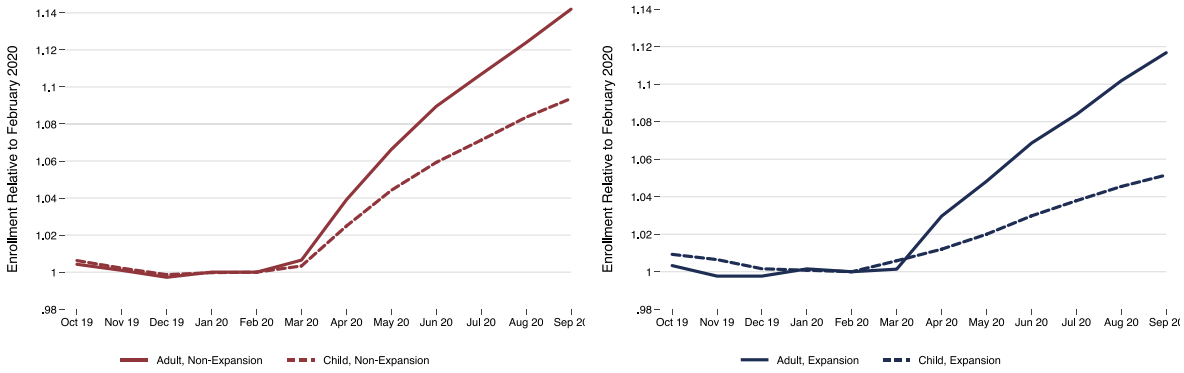
Figure 4: Medicaid and CHIP Enrollment as a Fraction of February 2020 Levels, October 2019-September 2020



Note: Data are from CMS (2020b).

The difference between adult and child enrollment growth has been particularly pronounced in expansion states, as depicted in Figure 5. In expansion states, total adult enrollment grew by roughly 2.2 times as much as child enrollment (11.7 percent versus 5.2 percent). In non-expansion states adult enrollment outpaced that of children by just 52 percent (14.2 percent versus 9.4 percent).[4]

Figure 5: Medicaid and CHIP Enrollment as a Fraction of February 2020 Levels, October 2019-September 2020



Non-Expansion States Expansion States

Note: Data are from *CMS (2020b).* States were classified as expansion states if enrollment in that group had occurred by July of 2020 (34 states). Information about expansion decisions taken from Kaiser Family Foundation (2020b).

It is not immediately obvious how these enrollment trends translate to state expenditure needs. Because Medicaid and CHIP are financed jointly by the state and federal governments, the cost of increased enrollment does not fall entirely on the states. States have considerable latitude to design their programs and the federal government "matches" expenditures at a prespecified Federal Medical Assistance Percentage (FMAP). The federal government pays at least 50 percent of costs, with that share rising for states with lower per-capita incomes. For

[4] These results are consistent with our own discussions with a state budget officer in an expansion state. Preliminary data from that state indicated that enrollment growth in the expansion population exceeded that of the non-expansion population from March through September of 2020. Note that expansion states generally have higher income limits for CHIP (Kaiser Family Foundation, 2020a), which complicates an a priori assessment of how relative enrollment patterns are expected to differ across states.

fiscal year 2021 the primary matching rates in Medicaid and CHIP averaged 60 and 72 percent, respectively (Federal Financial Participation in State Assistance Expenditures, 2019). Notably, however, expenditures for the ACA expansion group are matched at the enhanced level of 90 percent.

The CMS data for 2020 do not separately report enrollment growth for all coverage categories. Given markedly different per-capita expenditures across enrollment groups, this makes it challenging to translate observed enrollment growth into costs for the states and the federal government. Using recent CBO reports, however, we can more precisely estimate total program costs associated with anticipated enrollment increases for a near and medium-term horizon. In particular, the agency estimates that, due to policy changes (discussed in more detail below) and the impact of COVID-19 on the economy, total program enrollment will be 9 million higher in 2021 than it had forecast prior to the pandemic (CBO, 2020e). CBO further forecasts that enrollment will remain above the pre-pandemic baseline until 2027.[5] Moreover, enrollment growth is expected to differ meaningfully across categories of beneficiaries. Consistent with the evidence shown above, for example, CBO estimates that enrollment will remain flat in CHIP but increase across Medicaid enrollment categories (CBO, 2020e). Given average expenditures for each group, these enrollment changes imply an additional $59.8 billion in combined state and federal costs in 2021, and $225.6 billion additional costs for 2020-2030.[6] These enrollment and spending increases have the distinct potential to strain state budgets; however, the ultimate burden on states depends heavily on the effects of recent federal legislation.

[5] For this calculation we assume zero growth in Medicaid enrollment for those over age 65.
[6] This reflects median total expenditures among states that CMS deems to have a high level of data usability. Results are similar if we use estimates from all states. Data are from 2018 (CMS, 2020a).

How Has the Federal Response to COVID-19 Impacted Medicaid and CHIP?

The FFCRA aided states by increasing the federal matching assistance percentage (FMAP) by 6.2 percentage points for the duration of the public health crisis. Indirectly, this increased CHIP matching rates by roughly 4.3 percent (CMS, 2020a). The increased match rate did not directly apply to spending on groups with already enhanced match rates, including the ACA expansion population. Importantly, receipt of the enhanced FMAP was conditional on states maintaining continuous coverage for enrollees, regardless of changes to their eligibility status, for the duration of the health emergency.[7] Further, states were prohibited from tightening eligibility rules or increasing premiums.

The FMAP enhancement and continuous coverage provisions have opposing effects on state expenditures. A higher FMAP delivers pure transfers from the federal government—state financing needs fall one-for-one with each dollar in federal transfers. The continuous coverage provision, however, increases program enrollment and total expenditures. States must still fund their portion of these new program costs. The net effect on state budgets is ambiguous.

CBO estimates that, together, the Medicaid provisions increased federal spending by $79 billion in 2021 and by $172 billion over the years 2020-2023 (CBO, 2020d). As with prior recessions, this is a substantial portion of total federal spending aimed at states. For example, the American Reinvestment and Recovery Act of 2009 included a similar FMAP enhancement that was in effect from October of 2008 through June of 2011. This increased federal spending by roughly $100 billion (Clemens and Ippolito, 2018; Kaiser Family Foundation, 2011),[8] which

[7] As observed by Baicker, Clemens, and Singhal (2012), the U.S. federal government has a long history of conditioning its intergovernmental transfers on states' compliance with rules that sometimes have substantial costs.
[8] Note that the FMAP increase from the ARRA was initially set to expire in December of 2010 but was then extended through June of 2011 with some modifications (GAO, 2011). Cost estimates which exclude the extension are lower—approximately $89 billion (Chodorow-Reich et al, 2012).

represented a substantial portion of the total $232 billion in grants-in-aid that was transferred to states through the ARRA (BEA, 2020b). In the current context, the gross transfers triggered by the Medicaid provisions in the FFCRA exceed the $150 billion allocated to state and local governments through the Coronavirus Relief Fund in the CARES Act. However, the $172 billion in federal spending is not a form of pure budgetary support for the states. To estimate the net budgetary effects, we calculate the transfers and costs associated with the FMAP increase and continuous coverage provision separately. As detailed below, we conclude that a significant share of the fiscal relief owing to the FMAP increase is offset by expenditures linked to the continuous coverage provision.

Net State Fiscal Stress Connected to the Medicaid Program

Let us now parse the effects of the FMAP increase and continuous coverage provision to estimate the net fiscal effect of COVID-related Medicaid legislation. The available data imply that the FMAP increase will transfer about $39 billion to states in 2021, and a total of $89.9 billion from 2020 to 2023. The continuous coverage provision partially offsets this transfer by increasing state expenditures by $20 billion in 2021, and by $41.0 billion for the 2020-2023 period. We conclude that these provisions provided an estimated $18.8 billion in net general fiscal relief to states in 2021, and a total of $43.8 billion for 2020-2023.

These estimates are informed by recent CBO reports. Specifically, the two Medicaid provisions are expected to increase federal expenditures by $41, $79, $47, and $5 billion in 2020, 2021, 2022, and 2023, respectively (Table A-2, CBO, 2020d). CBO also notes that the FMAP provision accounts for $30 billion in federal spending in 2021 for the population under age 65 (CBO, 2020e). Scaling by the portion of Medicaid spending attributable to those under

65, we conclude that the FMAP provision is responsible for $38.9 billion in total federal costs for 2021.[9] This implies that federal costs of the two provisions are split nearly evenly in 2021: 49.2% owing to the FMAP increase and 50.8% due to the continuous coverage provision.

CBO's assumption for 2021 provides a useful reference point for allocating federal costs for 2020 through 2023. In 2020, the continuous coverage provision should account for a modest share of federal costs, since the pandemic's negative effects on low-earning households' incomes will limit the continuous coverage provision's bite. Subsequent income growth, however, will increase the continuous coverage provision's impact so long as the public health emergency remains in effect. For our preferred calculations, we assume that the FMAP provision accounts for 75 percent of federal costs in 2020, roughly 50 percent in 2021 (as calculated above), 40 percent in 2022, and 30 percent in 2023.[10] In aggregate, we assume that the FMAP provision accounts for 52 percent of federal costs over the 2020-2023 period. This implies a total federal cost of $82 billion for the continuous coverage provision. After adjusting by the average FMAP nationwide (inclusive of the 6.2 percentage point increase), state expenditures owing to the continuous coverage provision are $41.0 billion from 2020 to 2023, and $20.0 billion in 2021. On net, the FMAP and the continuous coverage provisions reduce states' exposure to Medicaid and CHIP expenditures by $43.8 billion over the four years during which they are assumed to be in effect. Table 1 summarizes these results.

[9] Specifically, MACPAC reports that those over the age of 65 account for $94.2 of $409.3 billion in total Medicaid benefit spending, or 23% (MACPAC, 2019). We assume that 23% of enhanced FMAP spending will be spent on enrollees over age 65 in 2021

[10] If we instead assume that the nearly 50/50 split in 2021 is constant across years, we estimate that total net transfers to states for 2020-2023 are a similar $41 billion. However, the distribution across years differs somewhat, with smaller net transfers occurring in 2020 owing to larger costs of the continuous coverage provision and vice versa for 2022/2023.

Table 1: Estimated State and Federal Costs of Enhanced FMAP and Continuous Coverage Provisions ($ billions)

		2020	2021	2022	2023	2020-2023
Federal Costs	FMAP Only	30.8	38.9	18.8	1.5	89.9
	Continuous Coverage Only	10.3	40.1	28.2	3.5	82.1
	FMAP + Continuous Coverage	41	79	47	5	172
State Costs	FMAP Only	-30.8	-38.9	-18.8	-1.5	-89.9
	Continuous Coverage Only	5.1	20.0	14.1	1.7	41.0
	FMAP + Continuous Coverage	-25.6	-18.8	-4.7	0.2	-43.8

Note: The estimated federal cost of the FMAP and Continuous Coverage provisions together are from Table A-2 of CBO (2020d). The FMAP provision is assumed to represent a particularly large portion of federal costs in 2020 (75%), 49.3% of total federal costs in 2021 (based on CBO, 2020e), 40% in 2022, and 30% in 2023. The state cost of the continuous coverage provision assumes a federal matching rate of 66.7% (normal matching rate inclusive of 6.2 percent add on). Numbers within columns may not add due to rounding.

Legislated transfers via the FMAP increase are projected to outstrip the additional state costs owing to the continuous coverage provision. However, it is not yet clear how these transfers compare to total state Medicaid and CHIP costs owing to the COVID-19 pandemic—costs that stem from both the continuous coverage provision and broader economic decline. As noted above, enrollment increases owing to both of these sources stood to increase total state and federal costs by an estimated $59.8 billion in 2021 and $225.6 billion for 2020-2030 (though, note that costs are assumed to be zero for the last three years of this budget window as enrollment returns to baseline). At their normal matching rate for these enrollment categories, state expenditures would have increased by $19.9 billion in 2021 and $84.2 billion for the entire budget window. The FMAP increase offsets these costs by an estimated $38.9 billion in 2021 and $89.9 billion for 2020-2023. On net, federal transfers are projected to effectively offset total state expenditure needs for the Medicaid program over the 2020-2030 window, though somewhat unevenly over time, as shown in Table 2. Note that federal transfers exceed state expenditure needs through 2022. Enrollment, however, is expected to remain above pre-COVID projections beyond the conclusion of the public health emergency. Because the formal

conclusion of the health emergency terminates the FMAP and continuous coverage provisions, the pandemic's long-run effects on enrollment imply a net increase in states' costs after 2022.

Table 2: Net State Medicaid and CHIP Costs Due to COVID-19 Pandemic

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2020-2030
Enrollment increase due to COVID-19 (millions)	3	9	7	4	2	2	2	-1	0	0	0	28
Potential state costs owing to enrollment increase ($ billions)	$4.4	$19.9	$17.8	$13.5	$9.8	$9.8	$9.8	-$0.7	$0	$0	$0	$84.2
FMAP transfer ($ billions)	-$30.8	-$38.9	-$18.8	-$1.5	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	-$89.9
Net State Medicaid & CHIP Costs ($ billions)	-$26.4	-$19.0	-$1.0	$12.0	$9.8	$9.8	$9.8	-$0.7	$0.0	$0.0	$0.0	-$5.8

Note: Enrollment estimates are taken from Tables A-1 and A-3 from CBO (2020d) and are inclusive of economic and legislative effects. State costs assume states would have paid their normal average portion of costs (40 percent). State costs owing to enrollment increase based on median total expenditures in 2018 among states that CMS deems to have a high level of data usability (CMS, 2020c). Value of FMAP transfer from CBO (2020d; 2020e) (see above text for discussion of calculation). Numbers within columns may not add due to rounding.

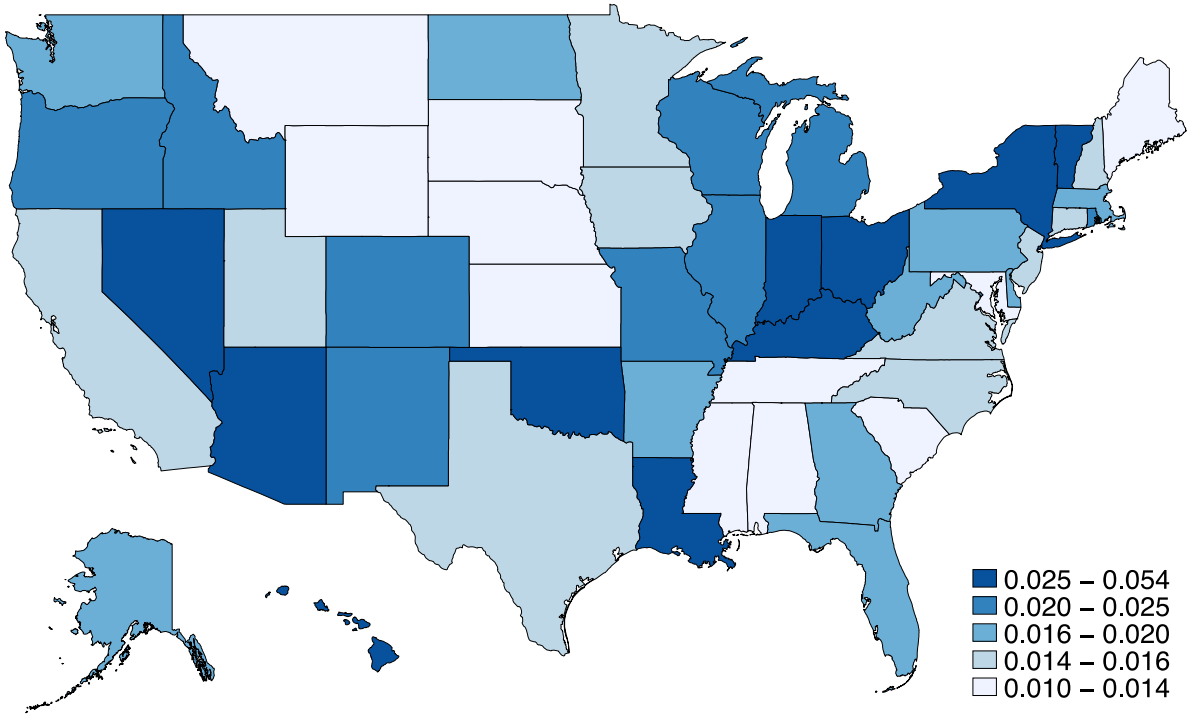
Across the entire budget window, federal support is well matched to expected state Medicaid and CHIP financing needs owing to the COVID-19 pandemic. During the worst portions of the economic downturn and health crisis, federal transfers overshoot increases in state financing needs for these programs, effectively providing broader fiscal relief. However, federal transfers are expected to expire before economic conditions fully recover, leaving states with elevated financing needs starting in 2023. Given the large amounts of other funding provided by the federal government to state and local governments since the start of the pandemic, this ought not pose unsurmountable challenges. In the absence of the ARPA, however, this mismatch might have generated significant uncertainty about state governments' future budgetary and fiscal policy. Uncertainty of this sort can, in its own right, have damaging consequences (Shoag and Veuger, 2016). We also note that these estimates are themselves uncertain. If the economic

recovery is more rapid than expected, Medicaid enrollment may return to baseline more quickly than in CBO's projections, alleviating some of the financing pressures in later years.

Cross-State Heterogeneity in Medicaid Enrollment Increases

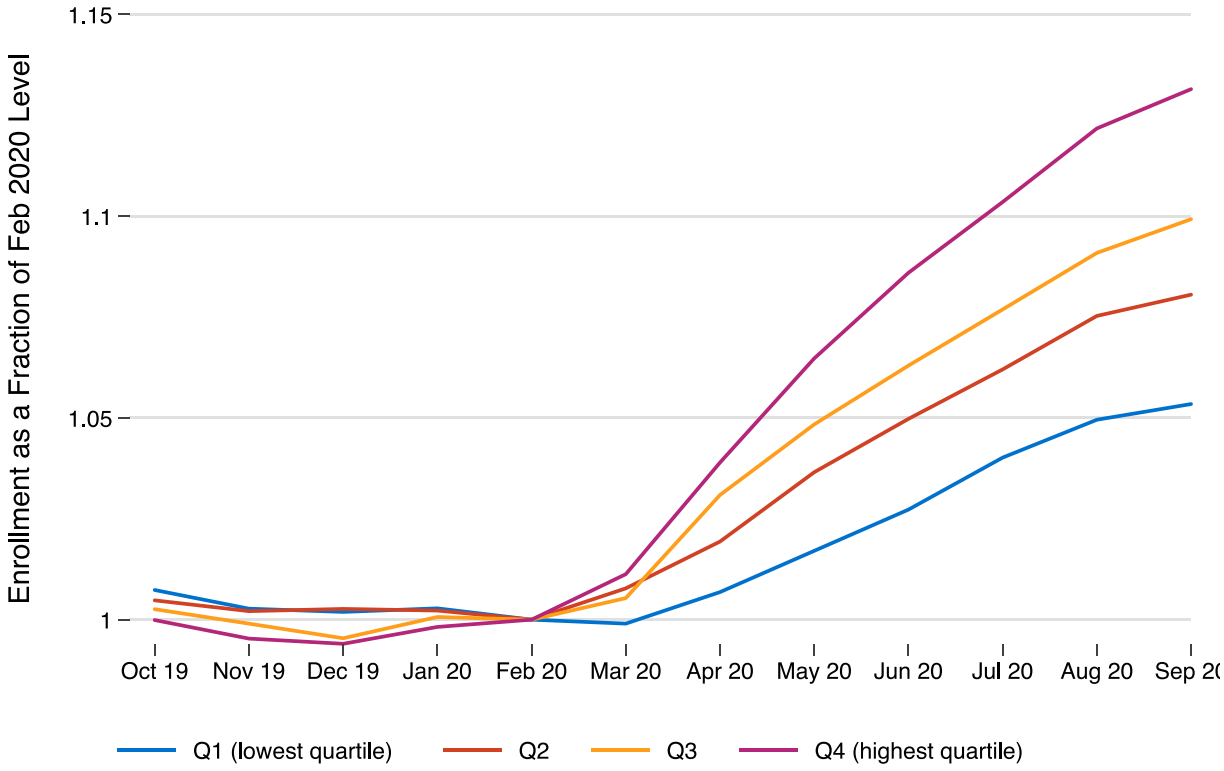
The numbers presented so far mask significant cross-state heterogeneity in enrollment increases, spending needs, and federal aid flows. Figures 6 and 7 illustrate this heterogeneity. Figure 6 maps the increase in Medicaid enrollment per state resident from February to September 2020. The increases range from 0.009 in to 0.054. Figure 7 breaks the states out into quartiles, ranked according to the percent increase in their number of Medicaid enrollees between February and September 2020. While the bottom-quartile states have seen their Medicaid rolls grow by around 5%, top-quartile states have witnessed a 13% increase.

Figure 6: Cross-State Heterogeneity in Medicaid and CHIP Enrollment Increases



Note: This figure illustrates the change in Medicaid and CHIP enrollment per state resident from February to September of 2020. Total monthly Medicaid and CHIP enrollment data are from Kaiser Family Foundation (based on CMS, Medicaid & CHIP Monthly Applications, Eligibility Determinations, and Enrollment Reports). State population data are for 2019 are from KFF estimates based on the 2019 American Community Survey, 1-Year Estimates.

Figure 7: Medicaid and CHIP Enrollment Relative to February 2020



Note: This figure illustrates Medicaid and CHIP enrollment data relative to enrollment in February of 2020. States are split into quartiles based on the percent increase in enrollment during this time period. Total monthly Medicaid and CHIP enrollment data are from Kaiser Family Foundation (based on CMS, Medicaid & CHIP Monthly Applications, Eligibility Determinations, and Enrollment Reports).

Has Federal Aid Targeted Cross-State Heterogeneity in Medicaid Enrollment Increases?

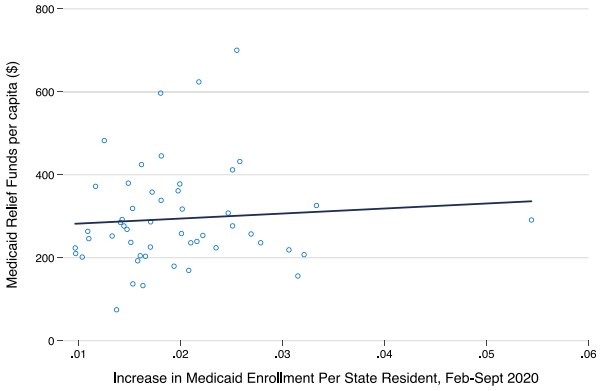
We now consider the extent to which federal aid has been targeted towards states in which Medicaid enrollments have risen the most dramatically. The biggest source of relief targeted to the needs generated by enrollment shocks is the matching structure of Medicaid itself, which triggers additional federal funds when spending rises to finance enrollment increases (Clemens and Ippolito, 2018). As Medicaid spending rises, the federal match automatically reduces states' exposure.

In contrast with the basic match, the enhanced FMAP provision delivers the most substantial aid to states with relatively high levels of qualifying expenditures at baseline.

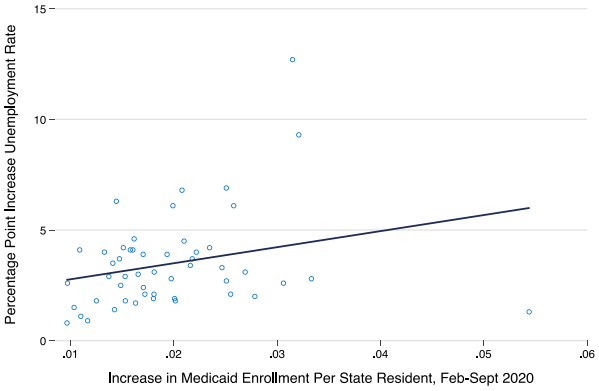
Whether this aid targets states that experienced relatively large enrollment shocks is an empirical question. We answer this question in Figure 8. Through September, growth in Medicaid and CHIP enrollments (and the mechanical growth in federal spending that accompanies it) was positively related to states' unemployment rates and unemployment rate changes, as shown in panels B and C. Panel A, however, shows a weak correlation between Medicaid enrollment increases and Medicaid relief funds delivered through the FFCRA's enhanced FMAP (both expressed on a per capita, or per state resident, basis).

Figure 8: How do Medicaid and CHIP Enrollment Shocks Relate to Indicators of Need?

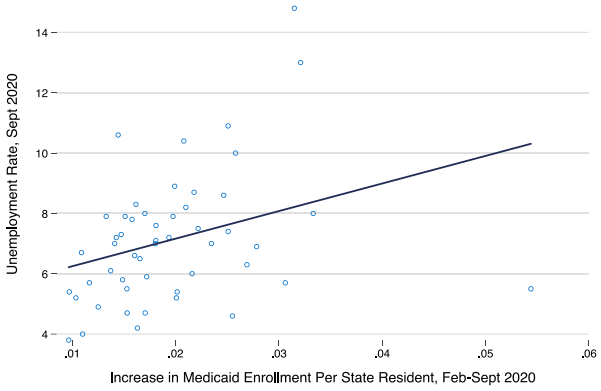
Panel A: Relief Funds per capita



Panel B: Increase in Unemployment Rate (Feb–Sept 2020)



Panel C: Unemployment Rate (Sept 2020)



Note: This figure illustrates state level increases in Medicaid and CHIP enrollment per state resident from February-September 2020 against indicators of need. Total monthly Medicaid and CHIP enrollment data are from Kaiser Family Foundation (based on CMS, Medicaid & CHIP Monthly Applications, Eligibility Determinations, and Enrollment Reports). Medicaid relief funds represent additional federal spending associated with the enhanced FMAP included in the FFCRA and are from the COVID Relief Tracker from the Committee for a Responsible Federal Budget. Unemployment data for the noninstitutionalized population are from the Bureau of Labor Statistics.

We analyze these relationships further in Table 3. Column 1 confirms that the federal funds from the FFCRA enhanced FMAP (per capita) do not correlate strongly with enrollment changes per capita. This confirms that the FMAP increase rewards states that had high baseline expenditures rather than states that were more "shocked" by new enrollments. In contrast, column 2 shows enrollment increases were moderately correlated with unemployment as measured from October to December. Here, the unemployment variable we analyze is constructed using the unemployment data that feed into the state-aid formula legislated through the ARPA. Specifically, we show here that shocks to enrollment per capita correlate positively with the average of October through December unemployment expressed on a per capita basis. In other words, relief provided through the ARPA is likely to be somewhat correlated with this dimension of heterogeneity in COVID needs.

Column 3 shows that enrollment shocks, expressed in terms of enrollees per state resident, have been particularly large in ACA expansion states. Note that to the extent that this reflects more strongly countercyclical enrollment among the expansion population itself, this mechanically triggers large transfers in federal funds owing to the 90 percent federal match for this group. Alternatively, the correlation between enrollment shocks and ACA expansion status may result from expansion states' general approach to administering Medicaid. That is, expansion states may tend to be states with more streamlined enrollment processes, while non-expansion states may tend to be states with more onerous enrollment processes. Regardless, it is of descriptive interest to note that ACA expansion status predicts the magnitude of pandemic enrollment shocks as strongly if not more strongly than some measures of macroeconomic conditions. Recall, for example, that *changes* in states' unemployment rates quite weakly predict

states' enrollment increases, as shown in Panel B of Figure 8. The relationship between expansion status and enrollment shocks maintains its magnitude and significance in Column 5, where the enhanced FMAP funds, the ARPA unemployment variable, and expansions status are jointly included in a descriptive multivariate analysis.

Table 3: Do Aid Formula Components Correlate with Increases in Medicaid Enrollment?

Dependent Variable: Rise in Medicaid Enrollments per State Resident	(1)	(2)	(3)	(4)	(5)
Medicaid Relief Funds Per State Resident (1000s)	0.005			0.003	-0.002
	(0.006)			(0.006)	(0.006)
Unemployed Persons Per State Resident (ARPA Formula)		0.222**		0.217*	0.124
		(0.105)		(0.110)	(0.128)
ACA Expansion by 2020			0.006***		0.005**
			(0.002)		(0.002)
Observations	51	51	51	51	51

Note: The table presents estimates of simple bivariate and multivariate ordinary least squares regressions. In each column, the dependent variable is the rise in Medicaid and CHIP enrollments per state resident, calculated from February 2020 through September 2020. Total monthly Medicaid and CHIP enrollment data are from Kaiser Family Foundation (based on CMS, Medicaid & CHIP Monthly Applications, Eligibility Determinations, and Enrollment Reports). Medicaid relief funds represent additional federal spending associated with the enhanced FMAP included in the FFCRA and are from the COVID Relief Tracker from the Committee for a Responsible Federal Budget. This variable is also expressed on a "per state resident" basis. The number of unemployed persons per state resident is calculated as the average of the counts of unemployed persons in October, November, and December, divided by state population. This corresponds closely with unemployment data used to calculate each state's allocation of funding through the American Rescue Plan. Unemployment data for the noninstitutionalized population are from the Bureau of Labor Statistics. Information about expansion decisions taken from Kaiser Family Foundation (2020b). Heteroskedasticity robust standard errors are reported in parentheses beneath each point estimate. *** p<0.01, ** p<0.05, * p<0.1.

Conclusion

The COVID-19 pandemic has affected state and local government budgets by changing revenue streams, raising spending needs, and triggering enormous amounts of federal aid. This paper adds to past work on the pandemic's effects on state and local governments' budgets, and the literature on fiscal federalism more generally, with a detailed look at the Medicaid program.

Our inquiry included two lines of emphasis. First, we investigated the intricate relationship between increased spending needs and additional federal grants in the aggregate. Through the current 10-year budget window and in the aggregate, the additional federal grants

roughly cover expected state Medicaid and CHIP financing needs due to the pandemic. While this is true across the budget window, we illustrate the potential relevance of timing. Federal grants overshoot initially and are forecasted to expire before either the economy or Medicaid enrollments have returned to trend. Mistiming of this sort may interact in unintended ways with states' balanced budgeting practices. Interestingly, the duration of the enhanced FMAP is tied to the duration of the public health emergency in a binary fashion. The formal repeal of the public health emergency will thus be a high stakes determination from a state-budgeting perspective. A more gradual phase-out of federal support, perhaps tied to macroeconomic conditions, would reduce this pressure.

Our second line of emphasis has been on the heterogeneity in states' experiences. Specifically, we have explored the extent to which federal grants have targeted the states in which Medicaid enrollments rose the most substantially. We show that the enhanced FMAP funds were, in this key respect, ill-targeted; these funds target states with high expenditures at baseline rather than states that have been subject to the largest shocks. In this sense, the enhanced FMAP funds have targeted inframarginal Medicaid spending rather than pandemic-induced increases in Medicaid spending. Interestingly, we show that the American Rescue Plan Act's unemployment-driven formula for allocating unrestricted fiscal assistance better targets aid towards states with large increases in Medicaid and CHIP enrollments.

Going forward, the design of federal fiscal assistance merits additional scrutiny given its role in the American system of fiscal federalism. During both the COVID-19 pandemic and the Great Recession, substantial federal aid has been legislated on an ad hoc basis. The time pressure under which emergency legislative vehicles must be designed may, in turn, risk ill-targeted

approaches to dispensing substantial quantities of aid. The design of "automatic stabilizers" for state and local governments may thus a be fruitful area for further analysis.

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