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AID FOR INCUMBENTS:
THE ELECTORAL CONSEQUENCES OF COVID-19 RELIEF

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ABSTRACT

The COVID-19 pandemic led to unprecedented levels of federal transfers to state governments. Did this funding increase benefit incumbent politicians electorally? Identifying the effect of revenue windfalls on voting is challenging because whatever conditions led to the influx of cash might also benefit or harm incumbents for other reasons. We develop an instrument that allows us to predict allocations to states based on variation in congressional representation. We find that incumbents in state-wide races in 2020, 2021, and 2022 performed significantly better in states that received more relief funding due to their overrepresentation in Congress. These results are robust across specifications and after adjusting for a variety of economic and political controls. We consistently find that the pandemic-period electoral advantage of incumbent politicians in states receiving more aid substantially exceeds the more modest advantage politicians in these states enjoyed before the pandemic. This paper contributes to our understanding of economic voting and the incumbency advantage during times of crisis as well as the downstream electoral consequences of both the COVID-19 pandemic and of unequal political representation at the federal level.

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1 Introduction

In 2022, Wisconsin Governor Tony Evers, a Democrat, won a close re-election race against Republican challenger Tim Michels. In the year leading up to the election, Evers emphasized his record of securing and deploying funding for his state throughout the COVID-19 pandemic. One typical press release stated: "Gov. Tony Evers today announced an additional $30 million of federal Coronavirus Aid, Relief, and Economic Security Act (CARES Act) dollars are being directed toward supporting early care and education providers. The additional funds will allow the Department of Children and Families (DCF) to conduct an additional round of Child Care Counts payments."[1] Evers would go on to win a narrow victory, securing 51% of the vote to Michels' 48%. Nationwide, incumbents and their parties won 90 percent of pandemic-era gubernatorial and senate elections, a substantial improvement over their 81 percent win rate in the years leading up to the pandemic.

Evers was not the only politician whose state received a substantial influx of federal cash following the onset of the COVID-19 pandemic. In response to the public health crisis, the U.S. federal government allocated nearly $1 trillion in aid to state and local governments—the largest transfer of federal money in history. The goal was to stabilize the economy while providing states with the necessary resources to address the public health crisis. Did this increase in funding benefit incumbent politicians? We provide evidence on this question by exploiting the fact that states received unequal levels of aid to estimate the effect of federal aid on state-wide elections.

The ability to claim credit for government programs and spending comprises an important source of the incumbency advantage (Mayhew 1974; Erikson 1971; Ansolabehere and Snyder Jr. 2002). Incumbents can generate support among constituents by emphasizing their efforts to lobby for additional funding, and if they use the money effectively, voters might reward that work at the ballot box. Of course, if politicians are not able to use the increased

[1] https://content.govdelivery.com/accounts/WIGOV/bulletins/29d080f

revenues to enact policies and programs that voters prefer, we may not observe an impact of increased aid on incumbent performance.

Studying the effect of economic windfalls on the electoral fortunes of politicians is difficult due to standard endogeneity and omitted-variable concerns. The conditions that result in an influx of federal revenue might either benefit or harm incumbents' electoral prospects for other reasons. To overcome this challenge, we employ an instrumental variables strategy. Following Clemens et al. (2023), we leverage the fact that pandemic assistance varied based on congressional representation, with an additional senator or representative per million residents predicting roughly $1,000 dollars in additional aid per capita. As a result, overrepresented states received systematically more funding. By predicting aid levels using congressional representation as an instrument, we seek to isolate the effect of COVID-19 spending on state-wide election results.

We find that federal pandemic aid strongly predicts incumbent performance in the 2020, 2021, and 2022 elections. The exclusion restriction here assumes that higher per capita representation in Congress did not benefit incumbents through channels other than the increase in COVID-19 funding. If incumbents in these overrepresented states enjoy a persistent advantage, this advantage will be present in pre-pandemic elections. In an analysis of a decade-long panel, we find that incumbents in overrepresented states did, in fact, enjoy a small electoral edge even before the pandemic's onset, but their advantage rose significantly—both in electoral and statistical terms—after federal pandemic aid had been appropriated. We show further that our representation instrument is more or less orthogonal to variations in partisan preferences, proxies for the pandemic's effects, and proxies for variations in the pandemic's potential severity. Put differently, our estimates are robust to controlling for a number of potential threats to our estimation framework's validity.

This paper makes three primary contributions. First, our research design allows us to study the effects of a dramatic budgetary shock on retrospective voting and the incumbency advantage.

Second, we shed light on a number of mechanisms through which these effects materialized. We establish that additional federal aid left voters better off financially and reduced COVID-19 deaths. We also analyze the potential effects of campaign contributions and media coverage on electoral outcomes and compare the effects of aid on electoral outcomes for governors relative to senators as well as for down-ballot legislative and executive offices.

Finally, our analysis contributes to our understanding of the political effects of COVID-19. Several scholars have begun to study the electoral effects of the pandemic, but existing work has focused primarily on the presidential election of 2020 (Clarke, Stewart, and Ho 2021; Baccini, Brodeur, and Weymouth 2021; Mendoza Aviña and Sevi 2021). While some comparative literature has examined the consequences of COVID-19 at the subnational level (Constantino, Cooperman, and Moreira 2021; Garnett et al. 2023; Justinus and Dartanto 2024), we know less about the effects of the pandemic for congressional and state-level elections in the United States. Finally, this paper adds to a body of research demonstrating that representation matters for the allocation of resources (Ansolabehere, Gerber, and Snyder 2002; Lee 1998). We document how the consequences of this uneven distribution can shape electoral politics.

2 Existing Literature and Institutional Background

Across both state and federal offices in the United States, incumbent politicians tend to perform well at the ballot box. A large literature on distributive politics posits that constituents reward incumbent politicians for securing federal dollars (Levitt and Snyder Jr. 1997; Bickers and Stein 1996; Cain, Ferejohn, and Fiorina 1987).[2] Incumbents can also strategically claim

[2]A recent analysis from a health care policy context illustrates how congressional representatives were rewarded for supporting the narrowly passed Medicare Modernization Act (MMA) of 2003. Specifically, Cooper et al. (2024) find that hospitals in the relevant representatives' districts received Medicare payment increases through the MMA's Section 508 program. These payment increases were, in turn, associated with increases in campaign contributions around the time the Section 508 hospital payment increases required reauthorization.

credit for government spending in order to cultivate a personal vote (Grimmer, Messing, and Westwood 2012).

Simultaneously, local economic conditions strongly predict incumbent support (de Benedictis-Kessner and Warshaw 2020). A substantial body of research on retrospective voting has established that voters generally hold incumbents accountable for the economy's performance while they are in office, penalizing them for poor economic outcomes and rewarding them for positive ones (for a review, see Healy and Malhotra (2013)). Economic downturns lead voters to embrace challenger parties and reduce support for incumbents (Gourevitch 1986; Bartels 2014; Healy and Lenz 2017). Conversely, voters reward politicians for windfalls (Chen 2013; Bechtel and Hainmueller 2011). Early political science research on retrospective voting focused primarily on establishing patterns of how economic conditions correlate with vote choice (e.g. Tufte 1978). The goal was often prediction rather than inference. For example, Niemi, Stanley, and Vogel (1995) find that a one standard deviation increase in real income per-capita within a state was associated with an 8 percentage point increase in the incumbent's vote share in gubernatorial elections.

More recent work in political economy focuses on exploiting shocks ranging from the Great Depression to the China trade shock to study how changes in economic conditions affect political outcomes. Margalit (2011) finds that counties exposed to more foreign competition due to offshoring experienced greater job loss, and that each percentage point decrease in the employment rate corresponded with a 0.15 percentage point penalty for the incumbent party in presidential elections. Healy and Lenz (2017) study the 2008 financial crisis and find that negative economic shocks harm incumbents: zip codes with the highest levels of delinquent mortgages, for example, shifted their vote share away from the incumbent party by 7.7 percentage points relative to zip codes with the lowest delinquency rates.[3]

Together, these stylized facts suggest that an influx of funding should increase electoral support for incumbent politicians. However, whatever political and economic conditions led

[3]For additional examples, see Margalit (2019).

to the windfall might also influence voter evaluations through other channels, making it difficult to credibly study the effect of government spending on incumbent performance (e.g. Healy and Malhotra 2009). In this paper, we develop an instrumental-variable estimator to credibly estimate how unprecedented levels of federal aid to state and local governments influenced the electoral fortunes of statewide-elected incumbent politicians.

Under the United States' system of fiscal federalism, transfers from the national government comprise an important component of state budgets. The COVID-19 pandemic resulted in historically high levels of federal aid being transferred to state and local governments (Clemens and Veuger 2020*a*). Notably for our analysis, transfers were more generous towards states with higher per capita representation in Congress (Clemens and Veuger 2021). Members of Congress enjoy a great deal of discretion over the formulas through which aid is distributed, which can bias the process in favor of states with more delegates. Importantly, a state's congressional representation is not proportional to its population, as each state elects two senators and at least one member of the House of Representatives. Clemens et al. (2023) and Clemens et al. (2024) exploit this representational bias and use an instrumental-variables approach to estimate the effect of aid on state and local government employment and the rollout of COVID-19 testing and vaccination operations.

Here, our starting point is a similar design to estimate the effect of COVID-19 aid on incumbent performance in statewide elections in 2020, 2021 and 2022. By statewide elections we mean both state and federal contests where the constituency is an entire state. Other literature has found that overrepresented states enjoy additional federal funding per capita across a range of measures (Atlas et al. 1995; Lee 1998; Hauk Jr. and Wacziarg 2007). Consistent with these findings, we document that states with higher per capita representation enjoyed a slightly larger incumbency advantage prior to the pandemic. However, after nearly $1 trillion of COVID-19 relief was appropriated, states that received more aid saw a disproportionate increase in incumbent vote share. We describe our empirical approach in detail in the next section.

We study both legislative and executive incumbents whose constituency is an entire state, including senators, members of the House elected at large, and governors. Existing work typically decomposes the incumbency advantage into several components, including candidate quality, the ability to scare off challengers, and direct benefits to holding office (e.g. Levitt and Wolfram 1997; Hirano and Snyder 2009). The literature suggests that legislators might enjoy a stronger incumbency advantage on this last dimension, in part because it can be difficult to identify which individual legislators are responsible for government performance. Legislators can exploit the fact that voters may not know who to blame for a weak economy or public health crisis and typically engage in more constituent casework and credit claiming, which may boost their electoral advantages (Fiorina 1989). Governors, on the other hand, are more likely to be held accountable for economic performance because executive decisions are more easily attributable to a single politician. Some existing work has found that members of the Senate are more likely to be evaluated on the basis of presidential performance, while governors are punished or rewarded based on a state's economic conditions (Atkeson and Partin 1995).

Whether legislators or executive officers should benefit more from the distribution of pandemic aid is ultimately an empirical question (cf. Ansolabehere and Snyder Jr. (2002)). While our baseline analysis pools across office types in order to maximize our sample size, we also explore differences across legislative and executive offices when assessing mechanisms. We find that governors of overrepresented states see their incumbency advantage increase more during the pandemic than legislators. Further, in analyses of lower-level offices, we find null effects of federal aid on the composition of state legislatures and substantial effects on the performance of incumbent secretaries of state, attorneys general, and lieutenant governors. This is in line with previous work that assigns credit for state level outcomes to governors, with additional evidence that benefits flow to executive office holders more broadly. Additionally, we note that the crisis may also have increased gubernatorial visibility through greater media attention. In "normal" times, these roles appear to be reversed

and, if anything, legislators benefit more from overrepresentation, in the spirit of Fiorina (1989).

Several features of our case make it a unique opportunity to study the effects of federal aid on political outcomes. At the pandemic's outset, estimates from a number of sources projected that state and local revenue shortfalls would rise easily into the hundreds of billions and might reach as high as $1 trillion dollars (Auerbach et al. 2020; Bartik 2020; McNichol, Leachman, and Marshall 2020; Clemens and Veuger 2020*b*,*a*; Whitaker 2020). We now know that, for a number of reasons, these estimates substantially overstated the revenue shortfalls that would ultimately occur. First, states' tax bases were buoyed by federal support for households and businesses, much of which had not been legislated at the time of these early-pandemic forecasts. Second, both state and local sales tax revenues were enhanced by the pandemic's effect on consumption patterns (de Benedictis-Kessner and Warshaw 2020), which underwent an unforeseen shift away from services (which are disproportionately untaxed) and towards goods (which are disproportionately taxed). State governments' revenues would ultimately exceed rather than fall short of pre-pandemic forecasts (National Association of State Budget Officers 2021). For our purposes, an implication of these developments is that federal aid generated surpluses over which governors and state legislatures held substantial discretion. This can be contrasted with times of starker need, when politicians are more constrained to devote any additional revenue towards the maintenance of employment and pay for essential personnel.

Existing research on the political effects of the COVID-19 pandemic in the United States has so far focused on the presidential election of 2020. Voters reacted negatively to Trump's handling of the pandemic (Clarke, Stewart, and Ho 2021), and Baccini, Brodeur, and Weymouth (2021) found that pandemic death rates negatively predicted Trump's vote share at the county level. Self-exposure to COVID-19 cases and deaths similarly correlate with lower support for the former president (Mendoza Aviña and Sevi 2021). However, we are not aware

of any papers that have studied the consequences of pandemic aid on post-2020 elections for other offices. In the next section, we introduce our data and research design.

3 Data

Our primary outcome of interest is incumbent-party vote share. We construct this outcome by taking the incumbent party's total number of votes as a share of the top two candidates' total votes for a particular office.[4] MIT's Election Lab provides vote counts for congressional elections through 2020, while we use vote counts from Amlani and Algara (2021) for gubernatorial elections through 2020. Vote counts for the 2021 and 2022 elections are taken from Leip (2024). Our sample is comprised of Senate and gubernatorial elections nationwide and House elections for the six states with at-large (state-wide) congressional districts. The resulting sample of 131 elections from 2020, 2021, and 2022 is depicted in the maps displayed in Figure 1, which are shaded to provide an initial look at the incumbent party's vote share in each election. The broader sample in which we contrast pandemic elections with pre-pandemic elections incorporates an additional 217 Senate, gubernatorial, and at-large House races, such that our decade-long sample incorporates 348 elections from 2013 through 2022.

We use a state's number of congressional representatives per million residents as our measure of congressional representation. Rosters of the House of Representatives and Senate during the 116th and 117th Congresses come from Lewis et al. (2021). We note that because 2020 Congressional representation was allocated according to state population from the 2010 census, Congressional representation is not affected by variations in population driven by the COVID-19 pandemic. Our baseline specifications incorporate a common control from the literature on U.S. electoral politics, namely the "normal vote," which accounts for the tendency of voters in particular states to support one party over the other. We construct

[4] In cases in which more than one candidate from the incumbent party runs in an election, we take the top-performing incumbent party candidate's total votes to be equal to the incumbent party's total votes.

the normal vote as the vote share received by the incumbent party in the most recent pre-COVID-19 pandemic election.[5]

Our measure of federal aid to state and local governments reflects spending authorized by the four major pieces of relief legislation that were passed during the COVID-19 pandemic: the CARES Act, the Families First Coronavirus Response Act (FFCRA), the Response and Relief Act (RRA), and the American Rescue Plan Act (ARPA). In particular, our analysis focuses on the nearly $1 trillion in funds that were allocated by these bills to state and local governments. As in Clemens and Veuger (2021), data from the Committee for a Responsible Federal Budget (2021) form the basis of our fiscal assistance variable, supplemented by information from several additional sources.[6] Our analysis focuses on the grand total of aid committed to each state across all four major pieces of COVID-19 fiscal relief. That is, our main independent variable is the grand total of aid allocated to each state per resident in thousands of dollars. Variations in these aid distributions across states are displayed in Figure 2. Summary statistics for the variables used in our primary analyses can be found in Table A.1.

In supplemental analyses of mechanisms and additional dimensions along which pandemic aid may have impacted electoral outcomes, we estimate the relationship between federal aid and COVID-19 case and death rates, disposable income, unemployment rates, voter turnout, campaign contributions, electoral outcomes in state legislatures, and electoral outcomes for statewide offices (that is, both state and national races that are held across a particular state). Our measures of COVID-19 cases and deaths are cumulative totals through December of the

[5]For elections that occur every two years, which in our sample include the at-large House races and the New Hampshire and Vermont gubernatorial elections, we use the incumbent party's vote share from the second-most recent election.

[6]We use data from the CRFB's COVID-19 Money Tracker as of August 19th, 2021. As in Clemens and Veuger (2021), "[w]e obtain information on the distribution of transit funds for the RRA and ARPA from the US Federal Transit Administration (2021). Data on the allocation of ARPA assistance to nonpublic schools come from the US Office of Elementary and Secondary Education (2021). We obtain estimates of ARPA section 9817 matching increases from Chidambaram and Musumeci (2021). We approximate the allocation of ARPA section 9819 federal matching funds for uncompensated care using FY2021 estimates of federal disproportionate share hospital allotments by state from the Medicaid and Chip Payment Access Commission (2021)." The Coronavirus Capital Projects Fund outlined in ARPA is distributed according to guidance from the United States Department of the US Department of the Treasury (2021).

relevant election year (Dong, Du, and Gardner 2020). Our measures of disposable income and the unemployment rate come from US Bureau of Economic Analysis (2024) and US Bureau of Labor Statistics (2024), respectively. Data on the voting eligible population are taken from the University of Florida Election Lab. Our data on campaign contributions come from Open Secrets (congressional races) and FollowTheMoney. Our data on down-ballot statewide offices come from Ballotopedia, and our data on electoral outcomes in state legislatures come from the National Conference of State Legislatures. Summary statistics for this set of variables can be found in Table A.2.

4 Methods

The goal of our analysis is to estimate the causal effect of federal aid to state and local governments on the electoral fortunes of incumbents. A general difficulty in estimating the effects of pandemic fiscal assistance is that fiscal assistance may have been targeted, at least to some extent, towards the states in greatest need. If state needs linked to the pandemic's health and economic impacts also influenced incumbent performance, a naïve regression of electoral outcomes on aid would tend to yield estimates that are biased towards negative values.

As a solution to this endogeneity problem, we propose an instrumental-variables estimation framework that makes use of the fact that federal aid distributions were far more generous to states that enjoy overrepresentation in the U.S. Congress, due in large part to the U.S. Senate's overrepresentation of individuals from low-population states. The initial strategy we implement is described by the following set of equations:

$$\frac{\text{Total Aid}_s}{\text{Pop}_s} = \gamma_0 + \gamma_1 \text{Reps Per Million}_s + \gamma_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\gamma + \epsilon_{s,o,t} \tag{4.1}$$

$$\text{Vote Share}_{s,o,t} = \beta_0 + \beta_1 \frac{\widehat{\text{Total Aid}}_s}{\text{Pop}_s} + \beta_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\beta + u_{s,o,t} \tag{4.2}$$

In equations (4.1) and (4.2), s indexes states, o indexes offices (senator, governor, or at-large representative), and t indexes years. The observations in our primary analysis sample consist of the 131 Senate, governor, and at-large House races that occurred in 2020, 2021, and 2022. $\frac{\text{Total Aid}_s}{\text{Pop}_s}$ is the total per capita federal pandemic aid (in thousands of dollars) to state and local governments in state s.[7] Reps Per Million$_s$ is our instrument, a measure of the representatives and senators each state is allocated per million residents. Normal Vote$_{s,o,t}$ is a conventional control from the elections literature which captures the performance of the incumbent (or the incumbent party) in the prior election cycle for a given race. While Normal Vote$_{s,o,t}$ is the only additional covariate in our baseline specification, we also explore robustness checks in which proxies for potential sources of bias are included in the additional covariate vector $X_{s,o,t}$.

The validity of our instrumental variables estimation framework depends on two factors. A first requirement is that congressional representation must be a strong, or relevant, predictor of the amount of aid each state received per resident. This fact has been established by Clemens and Veuger (2021), who explain that the bias toward overrepresented states in federal funding arose in large part from the use of floor functions similar to those used to determine Congressional representation in the otherwise proportional-to-population formulas for distributing general purpose fiscal relief.

The formal test of our instrument's strength involves the F-statistic on the excluded instrument in the first stage of our specifications. As shown in Table 1, the relevant F-statistics exceed 100, with an additional representative or senator per million residents predicting

[7] In Appendix Table A.4 we check to confirm that we obtain very similar results whether we apply the grand total of aid across the four relief packages to each election or, alternatively, apply aid from only the CARES Act and FFCRA to the elections that took place in November of 2020.

roughly $1,000 in additional aid per state resident. Additionally, as shown in Clemens and Veuger (2021) and subsequent studies, the strength of the first-stage relationship is little impacted by adding any of a number of covariates to the regression model.

A second requirement is that our instrument must satisfy the exclusion restriction. That is, conditional on any additional covariates in our model, our instrument must only be correlated with election outcomes through its effect on federal aid distributions. A number of pieces of evidence support the plausibility of this assumption.

First, earlier work has shown the variation in federal aid driven by over- and under-representation was unrelated to a number of plausible correlates of the needs states faced as a consequence of the pandemic. Clemens and Veuger (2021) show, in particular, that the small-state advantage is more or less orthogonal to state and local government funding needs as proxied by forecasts of pandemic-driven revenue shocks, pandemic-driven economic shocks, and the size of their public sector at baseline. This earlier paper shows that controlling for these proxies for need has little effect on the relationship between federal aid distributions and our instrument. It is thus unlikely that any incumbency advantage we estimate is in fact caused by these or similar other factors.

Second, we directly explore the robustness of our analysis by ruling out a role for some of the primary dimensions along which the pandemic differentially impacted states' economies. First, as is widely recognized, tourism-intensive states like Nevada, Hawaii, and Florida suffered more dramatically from the pandemic's initial impacts on their overall economic activity. Second, as noted by Clemens et al. (2024), the pandemic's early impacts on oil and gas prices, as well as on the initiation of new resource extraction activity, had a substantial impact on the revenues of Alaska, Wyoming, and North Dakota, which rely to a far greater degree on severance and other resource-related revenue streams than other states. We explore robustness to the potential relevance of these issues by showing that our results are little changed if we drop the most impacted states from the sample. We also show that our results are robust to controlling for plausibly exogenous pre-pandemic proxies for variations

in political and pandemic-policy preferences, which may themselves have exerted non-trivial impacts on political outcomes during the pandemic itself. Additionally, we show that our results are robust to controlling directly for population density, which may have directly influenced the pandemic's severity.

Third, as a placebo test we investigate whether the variations in aid that are predicted by our instrument predict the performance of incumbent politicians in elections from 2013 through 2019. This exercise provides evidence on whether incumbents in overrepresented states enjoy a persistent electoral advantage relative to incumbents in underrepresented states, which would be consistent with the hypothesis we emphasize throughout given that the overrepresentation of low-population states is a structural feature of the U.S. Congress.

Our analysis of pre-pandemic elections finds that the relationship between election outcomes and the aid predicted by our instrument is weaker in this placebo test sample than in our primary analysis sample. While the relationship between our instrument and pre-pandemic election outcomes of incumbents is statistically modest, however, it is nonetheless suggestive that incumbents in overrepresented states might enjoy a persistent advantage. To ensure that our estimates capture the advantage politicians in overrepresented states enjoyed due specifically to the pandemic relief packages, we thus implement an additional set of analyses. Specifically, we implement a set of panel models in which we directly compare the electoral advantage of incumbent parties in overrepresented states during the pandemic relative to their performance across several pre-pandemic electoral cycles. We begin this analysis by estimating the model below:

$$\begin{aligned}\text{Vote Share}_{s,o,t} = \alpha_0 + \alpha_1 \text{Reps Per Million}_s + \alpha_2 \text{Reps Per Million}_s \times \text{Pandemic}_t \\ + \alpha_3 \text{Pandemic}_t + \epsilon_{s,o,t} \end{aligned} \tag{4.3}$$

where Pandemic_t is an indicator that takes a value of 1 in 2020, 2021, and 2022 and a value of 0 in earlier years. Equation (4.3) can be described as a relatively sparse, reduced-form

analysis of the relationship between our instrument and electoral outcomes in which we allow that relationship to differ during the pandemic relative to pre-pandemic elections. As with our instrumental-variables framework, we proceed with additional analyses that augment equation (4.3) by controlling for Normal $\text{Vote}_{s,o,t}$ and, further, by allowing the relationship between Normal $\text{Vote}_{s,o,t}$ and electoral outcomes to vary across election cycles.

We then further augment our panel estimator to include an increasingly saturated set of fixed effects that rule out the possibility that our estimates are driven by persistent state wide, or even state-by-office level, incumbency advantages. That is, we begin this final wave of analyses by adding full sets of state fixed effects and time fixed effects, then additionally adding office fixed effects, and finally adding state-by-office fixed effects, as in the model below:

$$\begin{aligned}\text{Vote Share}_{s,o,t} = \phi_s + \phi_t + \phi_o + \phi_s \times \phi_o + \rho\text{Reps Per Million}_s \times \text{Pandemic}_t \\ + \gamma_t\text{Normal Vote}_{s,o,t} \times \text{Year}_t + \epsilon_{s,o,t}\end{aligned} \tag{4.4}$$

Note that in contrast with equation (4.3), equation (4.4) excludes the main effect of $\text{Reps Per Million}_s$ because it would be colinear with the set of state fixed effects. The coefficient ρ in equation (4.4) is a reduced form estimate of the incremental, pandemic-specific electoral advantage of enjoying an additional senator or representative per million state residents. Note that because an additional representative predicts roughly \$1,000 in additional aid, as estimated in the next section using equation (4.1), the scaling of ρ relative to β_1 from equation (4.2) is essentially the same. Crucially, the estimate of ρ in equation (4.4) is not subject to potential biases associated with time-invariant factors that differentiate over- and underrepresented states. Plausible sources of bias would need to involve pandemic-specific factors that differentially influenced over and underrepresented states. These are the potential biases we seek to address with the robustness checks to which we subject our estimate of equations (4.1) and (4.2).

5 Results

Table 1 presents our baseline results. In column 1, we estimate the reduced-form relationship between federal representation and incumbent vote share. We find that during the pandemic period, an additional representative or senator per million residents is associated with a statistically significant and politically meaningful additional four percentage points of the two-candidate vote share for the incumbent. Our estimate of the first-stage equation (4.1), in column 2, highlights the strong relationship between over-representation at the federal level and pandemic aid to state and local governments, which should come as no surprise given the discussion above in section 4. Conveniently for the scaling and interpretation of the reduced-form estimates, an additional representative or senator per million residents roughly translates into an additional $1,000 in aid per capita.

Column 3 shows our estimate of equation (4.2), the 2SLS relationship, without any controls. An additional $1,000 in federal aid per capita translates into a large and precisely estimated four percentage point boost of the two-candidate vote for the incumbent. In columns 4 through 6 we go through the same exercise, but this time we control for the normal vote. Inclusion of the normal vote, a conventional control that produces our preferred specification, reduces the size of our estimate of the effect of additional aid by about a quarter. The estimated effect of three additional percentage points of the two-candidate vote for the incumbent for each $1,000 in federal aid remains meaningful and statistically significant.

5.1 Robustness Tests

Table 2 presents the results of our first set of robustness tests. The first column replicates our preferred specification: that of column 6 from Table 1, which is the estimate of (4.2) with the normal vote control included. To investigate whether our estimates are influenced by variations in the severity of the pandemic's toll on states' economies and tax bases, column 2 drops the most natural-resource intensive states, column 3 drops the most tourism intensive

states, and column 4 drops both of these categories of states that were hard hit by the economic turmoil of the early pandemic. Our estimated effects of the impact of additional aid on the remaining subsamples of states are, if anything, slightly larger than the estimate based on the full sample.

In Table 3, we introduce two additional controls. After replicating our preferred specification in column 1, we control for the stringency of COVID-19 controls in March 2020 in column 2. In column 3 we control for Donald Trump's vote share in the 2016 presidential election. Finally, in column 4 we control for both of these variables, which we interpret as proxies for pandemic-related political and policy preferences. Controlling for the Trump vote share can also account, for example, for any differences in state effort to secure aid that might vary with local perceptions of the pandemic's severity, which is known to correlate with support for Trump. As can be seen in the table, the Trump vote share and, to a lesser extent, the measure of March 2020 COVID-19 lockdown stringency are both predictive of incumbents' vote shares, but their inclusion has no impact on our coefficient of primary interest. This reflects the fact that variation in federal aid was essentially orthogonal to these additional sources of variation in incumbents' electoral fortunes.

In Table 4, we introduce an additional set of controls that speak to geographic features including population density, population, and square mileage. Density speaks directly to the potential concern that our instrument might be correlated with state attributes with direct relevance to the pandemic's potential severity, while density's numerator (population) and denominator (square mileage) provide additional proxies for potentially relevant aspects of states' geographies. We again begin in column 1 by replicating our preferred specification. Column 2 then adds the density control, column 3 the population control, column 4 the square mileage control, and column 5 adds all three of these covariates at once. While density and population are predictive of incumbents' vote shares, their inclusion has little impact on either the primary coefficient of interest or on the strength of the first-stage relationship.

We also consider our results' robustness to issues related to functional form and to the election years included in our sample. In Table A.4, we replace the grand total of federal aid with the running total of aid, such that the federal aid we link to the 2020 elections stems primarily from the CARES Act. The resulting estimates are modestly larger than those in Table 1.[8] Additionally, we find very similar results if we exclude the 2020 elections from the sample, such that our sample only incorporates elections that occurred after all four relief packages had been enacted (results not shown).

Next, we explore the sensitivity of our baseline results to the potential role of outlier states. The sensitivity of the results to dropping each state from the analysis, one state at a time, is shown in Figure A.1 in the Appendix. The coefficients we recover in each iteration of this exercise are very similar, which demonstrates that no single state is driving the results.

A potential threat to our baseline estimates involves the possibility that the federal aid predicted by our instrument may arise from political skill as well as from a state's degree of overrepresentation per se, and that those skills might correlate through other channels with incumbents' future electoral performance.[9] In Table A.3, we thus present an analysis in which we predict each state's federal aid on the basis of the relationship between federal representation and aid as distributed to the other states, which prevents the instrumented aid for each state from being influenced by the skill of its own elected representatives. We accomplish this by effectively running fifty separate first stages, each of which leaves out the reference state for which instrumented aid will subsequently be predicted.[10] As with our

[8] Our preference for using the grand total of aid reflects the fact that, at the time of the 2020 elections, additional relief packages were under debate and, although their magnitude was uncertain, they could reasonably have been forecast to retain the earlier packages' bias in favor of overrepresented states. We are reassured that the estimates in Tables 1 and A.4 are very similar, however, as it is not obvious how voters' expectations regarding future aid packages should be taken into account.

[9] If politicians who are skilled at lobbying the federal government have complementary governance skills, for example, their electoral fortunes would be simultaneously buoyed by both the federal aid they generate and their voters' appreciation of the outcomes that are improved by their superior governance. Note that because our instrument isolates the federal aid that is predicted by overrepresentation, this issue only poses a potential source of bias if the variations in the relevant political skills are themselves correlated with the instrument. While it is not clear why this might be the case, we nonetheless implement a check for its potential relevance.

[10] Standard errors for this exercise are constructed using a bootstrapping procedure.

check for the role of outliers, we again find that our baseline result is little changed by this adaptation to the empirical exercise.

A somewhat different approach to ensuring that our results are not a mere statistical fluke is presented in Table 5. Here we run a placebo test: we examine whether our instrument and the predicted variations in federal aid correlate with the vote share of incumbent politicians in 2013-2019, which pre-date the pandemic. The question this test answers is whether elected officials in overrepresented states enjoy a structural electoral advantage, in addition to or instead of a temporary advantage connected to the pandemic. We find weak evidence that incumbent politicians do experience a modest, long-running advantage in overrepresented states, whether we look at the reduced form or instrument for pandemic-era aid. Notably, this advantage is not significantly different from zero at conventional levels of statistical significance. In addition, the size of the effect is much smaller than the boost received by incumbents of these states during the pandemic. In the equivalent of our baseline specification, where we control for the normal vote based on earlier elections, the estimated advantage of incumbents in states with an additional senator or representative per capita is a statistically insignificant 1 percentage point in pre-pandemic elections. This contrasts with the 3 to 4 percentage point advantage we estimate during the pandemic.

The scatterplots presented in Figure 3 provide an additional, transparent look at the reduced form relationship between our instrument and incumbent performance during both the pandemic (panels A and C) and pre-pandemic (panels B and D) elections in our sample. The scatterplots in panels A and B present the bivariate relationship between our instrument and incumbent vote shares, while the scatterplots in panels C and D present data that are residualized with respect to the normal vote. The slopes of the best fit lines in panels A and C are distinctively steeper than those in panels B and D, indicating a much stronger relationship between our instrument and the electoral fortunes of incumbents during the pandemic. This is consistent with the estimates from Tables 1 and 5, as discussed above.

The relationships as presented in panels C and D thus correspond to our baseline specification, which uses the normal vote variable as a control for the incumbent party's performance in the previous election. Notably, the relationship between our instrument and incumbents' placebo vote shares is relatively flat once this standard control is incorporated. That said, because the data are perhaps suggestive that incumbents from overrepresented states enjoy an advantage relative to their counterparts from underrepresented states during the pre-pandemic period, we take additional steps to ensure that any structural advantages of this sort are not influencing our estimates by analyzing the full panel of elections.

5.2 Panel Analysis

We proceed by investigating directly whether the effect of overrepresentation on incumbent performance during the pandemic does in fact stand out relative to normal times. We investigate this question in Table 6, where we present estimates of the panel specifications of equations (4.3) and (4.4), and confirm that incumbent elected officials from overrepresented states do indeed benefit disproportionately from their overrepresentation in the 2020-2022 period.

This result holds across the full set of specifications in Table 6. Column 1 presents the simple panel specification of equation (4.3) for the full 2013-2022 period. The estimated coefficient on the interaction between "Reps per Million" and the indicator for the pandemic years indicates that an additional representative or senator per million residents during the pandemic years gave incumbents an additional edge of close to two percentage points—recall that this corresponds almost precisely to the effect of an additional $1,000 in federal aid per capita. Note that the coefficient on "Reps Per Million" in this specification measures the impact of representation outside the pandemic years. This coefficient is, as it should be, identical to that in Column 1 of Table 5, which motivated our analysis of the full panel.[11]

[11] The attentive reader may also have noticed that the sum of the the coefficients on "Reps per Million x Pandemic" (1.803) and "Reps per Million" (2.280) equals the reduced-form coefficient from Table 1 (4.083).

As we saw in our cross-sectional analysis as well, the effect of aid on incumbent vote shares is attenuated somewhat when we control for the normal vote in column 2, but remains politically and statistically significant. Column 3 presents a more flexible specification that lets the normal vote vary in its predictive value across election cycles. The resulting estimate of the pandemic-era impact of overrepresentation resembles that in column 1.

Columns 4 through 6 of Table 6 present estimates generated by the augmented panel estimator of equation (4.4). Column 4 introduces year and state fixed effects; column 5 adds office fixed effects; and column 6 appends state-by-office fixed effects. The point estimates of the effect size we find here moderately exceed those of columns 1 through 3 and remain significant at the 99% confidence level. The amount of increased support for incumbents from overrepresented states during the pandemic turns out to be robust to this increasingly demanding battery of controls and remains within the range of estimates we have found previously.

6 Mechanisms

6.1 Changes to Voter Well-Being

In Table 7, we explore a number of channels through which federal aid may have directly influenced voters' well-being. Specifically, we use equation 4.2 to investigate whether additional federal aid had an impact on COVID-19 outcomes, disposable income, and the unemployment rate. While we think of these results as suggestive, we find that additional federal aid reduced the number of COVID-19 deaths in beneficiary states and that residents of those states saw their disposable income go up in the year of the relevant election. Previous research typically finds that income increases correspond to better electoral performance for incumbents (Bartels 2008; Krause and Melusky 2014), and our results suggest that voters had ample reasons to reward incumbents who received more aid, at least in models of retrospective voting where voters are naive or effort is imperfectly observed.

Like the effect we estimate on the incumbent vote share, the negative relationship between instrumented aid and the COVID-19 death rate is robust to the inclusion of the covariates from Table 3 (i.e., the 2016 Trump vote share and the March 2020 stringency of economic restrictions) as well as to the inclusion of the covariates from Table 4 (i.e., population density, population, and square mileage). Additionally, this result is consistent with the positive effect of instrumented aid on statewide rates of COVID-19 testing, as analyzed by Clemens et al. (2023). The estimated relationship with disposable income exhibits moderately more sensitivity to the inclusion of additional covariates in the specification.

The magnitudes of the estimated relationships between instrumented fiscal aid and both disposable income and COVID-19 mortality are worth discussing further. Our COVID-19 mortality variable is expressed in terms of deaths per 100,000 residents. The scaling of our variables is such that the estimate implies a reduction of 350 deaths per $1 billion spent, or roughly $2.9 million per death averted, which falls well below the thresholds recently used by U.S. federal agencies for estimates of the statistical value of life (Federal Register 2023).[12]

Our disposable income variable is scaled such that our estimate of 0.41 implies a $0.41 increase in disposable income per capita from the year before the election to the year of the election per dollar of fiscal assistance. This is consistent with tax payers receiving substantial additional rebates or other forms of increased income in states that received disproportionate aid allocations in the year of the election. Interestingly, we find an estimate that is economically and statistically indistinguishable from 0 for the change from two years prior to the election up to the year of the election. In combination with the estimate from column 3 of Table 6, this would be consistent with a political business cycle model of state officials' use of federal funds (e.g. Alesina, Roubini, and Cohen 1997; Drazen 2000; Franzese Jr 2002).

[12]For additional background on the thresholds used by federal agencies, see Table 1 in Section II.B of Federal Register (2023).

6.2 Executives and Legislators

A distinction that relates to a number of mechanisms as well as to theories of attribution (Fiorina 1989; Atkeson and Partin 1995; Ansolabehere and Snyder Jr. 2002) is that between the impact of additional aid on the electoral success of incumbents in legislative offices versus executive offices. Appendix Table A.5 presents results for these two sub-samples. Columns 5 through 8 suggest that during the public-health crisis, governors from overrepresented states enjoyed a major incumbency advantage. Columns 1 through 4 show the smaller incumbency bonus enjoyed by legislators, which in our sample of statewide elections consists primarily of U.S. senators. The situation is strikingly different during normal times, as the second row of estimates shows: if anything, legislators normally enjoy a greater incumbency bonus from over-representation.

Gubernatorial visibility in times of crisis may be responsible for this gap. We observe, for example, as shown in Figure A.2 that newspaper articles that reference either the CARES Act or the American Rescue Plan Act were far more likely to reference governors than senators.[13] We find additional evidence of larger effects of COVID-19 relief on the electoral fortunes of executive branch officials relative to legislators in an analysis of lower-state offices. In particular, as shown in Tables A.7 and A.8, we find null effects in an analysis of the effects of aid on the composition of state legislatures. Interestingly, the coefficients on the lagged values of state-legislature composition are indistinguishable from 1, implying strong persistence and potentially explaining why state legislature outcomes are little moved by federal aid. By contrast, as shown in Table A.9, we find that large allocations of aid predict substantially better performance by incumbents in down-ballot executive offices including states' attorneys general, secretaries of state, and lieutenant governors.

[13]However, we do not find that the ratio of coverage across states varies by the amount of aid. See Table A.6 for details.

6.3 Evidence on Additional Mechanisms

Finally, we analyze a set of additional mechanism and outcomes including voter turnout and campaign finance contributions. These analyses serve to assess if and how additional federal aid may have affected electoral outcomes without directly changing voter well-being. In Tables A.10 and A.11 we investigate whether more generous aid allocations are associated with higher voter turnout. Here, we use total votes relative to the state voting eligible population as our proxy for turnout. Estimates of both equation 4.2 and equation 4.4 find support for a relationship between aid and turnout in support of the incumbent party, while the evidence is mixed with respect to overall turnout. Turnout in favor of the leading challenger's party appears to be modestly depressed, though the point estimates are not uniformly statistically distinguishable from 0.

In Tables A.12 and A.13 we investigate the relationship between aid and campaign finance contributions. The estimates suggest that aid reduces the salience of races to donors, with estimates suggesting declines in contributions on the order of 10 to 25 percent for both the incumbent and challenger, though point estimates are only occasionally statistically distinguishable from 0. The estimates suggest that the relationship between aid and electoral performance is not mediated by quid pro quo exchanges of donations for economic favors. The point estimates are more consistent with stories in which savvy donors perceive incumbents who receive generous aid allocations to be safe or, alternatively, to have sufficient resources at their disposal to shape their electoral fortunes even while receiving moderately fewer campaign contributions.

7 Counterfactual Election Outcomes

Did the distribution of federal aid following the pandemic actually change election results? The implications of our estimates for the outcomes of specific elections are presented in Appendix Table A.14. In assessing the elections for which pandemic fiscal assistance may

have been pivotal, we generate counterfactual estimates in which we subtract away the electoral advantage associated with the funds derived from overrepresentation, effectively assigning to each state the amount of aid predicted for the least well represented state (i.e. California). We apply separate, sub-sample specific coefficients to generate counterfactual estimates for senators and governors. In particular, we use the estimates from columns 4 and 8 of Table A.5.

The resulting counterfactuals reveal that pandemic fiscal assistance did not have a substantial partisan bias with respect to the incumbents it may have helped across the finish line. Democrats would have won five contests they lost in our counterfactual reality; Republican candidates seven. That said, 4 of the 5 Republican-incumbent races for which we predict different outcomes involved senators, while 6 of the 7 Democratic-incumbent races for which we predict different outcomes involved governors. Given the modest number of observations in our sample, we are reluctant to speculate about why we observe this particular pattern, but hope this exercise might inspire future research in this area.

Overall, incumbent parties performed very well in the pandemic-era elections in our sample. While incumbent senators and governors won 81 percent of their elections in the pre-pandemic portion of our sample, they won 90 percent of the pandemic-era elections in our sample. Notably, our counterfactual implies a pandemic-era incumbent party win share of 80 percent. With aid equalized to the less generous allocations received by the most underrepresented state, the incumbent party win share would thus have mirrored their pre-pandemic win share.

8 Conclusion

This paper estimates the effects of the distribution of federal pandemic aid to state and local governments on the performance of incumbent politicians in state-wide elections. Our findings substantiate the hypothesis that increased federal aid in response to the COVID-19

pandemic benefited incumbents in the electoral arena. Specifically, we demonstrate that states with higher per capita congressional representation—and by extension, those that received more federal aid per capita—saw a significant increase in incumbent vote share in the 2020, 2021 and 2022 elections. These results suggest that access to government resources can comprise a key source of the incumbency advantage during times of economic crisis.

This relationship between aid and incumbent vote share holds even after controlling for various factors, including the incumbents' past performance, population density, COVID-19 control stringency, and political preferences expressed in the 2016 presidential election, underscoring the robustness of our results. Our instrumental variables strategy to address endogeneity concerns reinforces the credibility of these findings, as do our panel estimates through which we net out any differential electoral advantage held by incumbents in over-represented states during elections held prior to the COVID-19 pandemic.

In addition to these empirical contributions, our analysis has broader implications for understanding how access to representation and government spending contribute to the incumbency advantage, particularly during uncertain times. Our results offer new evidence that government programs can influence electoral politics, even in the face of a global pandemic. The fact that pandemic aid was unequally distributed highlights both the direct and indirect benefits of formal political representation. States with more representation per capita not only secured more revenues: the politicians serving those states appeared to benefit electorally as a result of this windfall.

Ultimately, this research underscores the critical role of federal transfers in the political landscape, especially during periods of economic shocks. The allocation of aid can have far-reaching political as well as economic consequences. Our research extends the existing body of literature by focusing on the downstream and statewide effects of the COVID-19 pandemic in the United States, areas previously underexplored. In doing so, this paper not only sheds light on the political ramifications of the recent pandemic but also sets the stage

for a deeper understanding of how government programs and spending can influence the democratic process.

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Tables and Figures

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Table 1: Baseline Estimates of the Effect of Aid on Incumbents' Vote Shares

	(1) Reduced Form	(2) First Stage	(3) 2SLS	(4) Reduced Form	(5) First Stage	(6) 2SLS
Reps per Million	4.083***	1.013***		2.910***	1.017***	
	(0.981)	(0.059)		(0.886)	(0.075)	
Total Aid per Resident (USD thousands)			4.032***			2.861***
			(1.079)			(0.963)
Normal Vote				0.400***	-0.002	0.404***
				(0.103)	(0.008)	(0.108)
Observations	131	131	131	131	131	131
R^2	0.220	0.870	0.143	0.340	0.870	0.294
First Stage F-Stat			293.569			183.504

This table uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), and US Department of the Treasury (2021), Lewis et al. (2021), Amlani and Algara (2021), Leip (2024), and MIT Election Data and Science Lab (2022*b*,*a*). The estimated 2SLS model, as estimated on data for 2020-2022, is described by the equations below, while the "Reduced Form" model is estimated by substituting the vote share outcome on the left-hand side of the first equation below:

$$\frac{\text{Total Aid}_s}{\text{Pop}_s} = \gamma_0 + \gamma_1 \text{Reps Per Million}_s + \gamma_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\gamma + \epsilon_{s,o,t}$$

$$\text{Vote Share}_{s,o,t} = \beta_0 + \beta_1 \frac{\widehat{\text{Total Aid}}_s}{\text{Pop}_s} + \beta_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\beta + u_{s,o,t}$$

Where $\text{Total Aid}_{s,o,t}$ is the total federal aid per resident to state and local governments (USD thousands) in state s pooled across all four bills. Total Aid_s is scaled by Pop_s state s's 2020 official Census population. Our outcome of interest, $\text{Vote Share}_{s,o,t}$, is the incumbent party's share of the top two candidates' total votes in state s in year y for office o. $\text{Normal Vote}_{s,o,t}$ is a control for the incumbent party's vote share in the previous election. Note that the normal vote control is included in the regressions presented in columns 4 through 6 but is excluded in the regressions presented in columns 1 through 3. The control vector $X_{s,o,t}$ is empty in this table's specifications. Columns 1 and 4 present the reduced form relationship between our outcome of interest ($\text{Vote Share}_{s,o,t}$) and instrument ($\text{Reps Per Million}_{s,o,t}$). In the first stage regression represented by equation (4.1) and presented in Columns 2 and 5, $\frac{\text{Total Aid}_s}{\text{Pop}_s}$ is instrumented using ($\text{Reps Per Million}_s$), the number of representatives and senators per million residents in 2020. The fitted values from the first stage (4.1) are used to estimate the second stage (4.2). Columns 3 and 6 present estimates of the second stage. Columns 3 through 6 add $\text{Normal Vote}_{s,o,t}$, which is the incumbent party's vote share in the previous election. Standard errors are clustered by state. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2: Analysis of Robustness to States' Exposure to Shocks Due to Their Reliance on Resource-Extraction and Tourism-Related Industries

	(1) Baseline	(2) Without Resource Intensive States	(3) Without Tourism Intensive States	(4) Without Resource and Tourism Intensive States
Total Aid per Resident (USD thousands)	2.861***	3.892***	2.928***	3.980***
	(0.963)	(0.986)	(0.973)	(0.997)
Normal Vote	0.404***	0.348***	0.390***	0.330***
	(0.108)	(0.109)	(0.110)	(0.112)
Observations	131	118	125	112
R^2	0.294	0.227	0.281	0.209
First Stage F-Stat	183.504	70.544	181.536	68.407

This table uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), US Department of the Treasury (2021), Lewis et al. (2021), Algara & Amlani (2021), Leip (2024), and MIT Election Lab (2022a, 2022b) to estimate the following equations for years 2020, 2021, and 2022 pooled:

$$\frac{\text{Total Aid}_s}{\text{Pop}_s} = \gamma_0 + \gamma_1 \text{Reps Per Million}_s + \gamma_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\gamma + \epsilon_{s,o,t}$$

$$\text{Vote Share}_{s,o,t} = \beta_0 + \beta_1 \frac{\widehat{\text{Total Aid}}_s}{\text{Pop}_s} + \beta_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\beta + u_{s,o,t}$$

Where Total Aid_s is the total federal aid per resident to state and local governments (USD thousands) in state s pooled across all four bills. Total Aid_s is scaled by Pop_s state s's 2020 official Census population. Our outcome of interest, $\text{Vote Share}_{s,o,t}$, is the incumbent party's share of the top two candidates' total votes in state s in year y for office o. $\text{Normal Vote}_{s,o,t}$ is a control for the incumbent party's vote share in the previous election. The control vector $X_{s,o,t}$ is empty in this table's specifications. Column 1 presents baseline estimates of equation (4.2), which include all senate, gubernatorial, and house-at-large elections between 2020-2022 for all 50 states. Column 2 drops resource-intensive states (Alaska, North Dakota, and Wyoming). Column 3 drops the tourism-intensive states (Hawaii, Nevada, and Florida). Column 4 drops both of these categories of states, which were particularly impacted by the economic turmoil of the early pandemic. Standard errors are clustered by state. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Analysis of Robustness to Baseline Proxies for Political and COVID-19 Policy Preferences

	(1) Baseline	(2) With OSI	(3) With Trump Vote Share	(4) With OSI and Trump Vote Share
Total Aid per Resident (USD thousands)	2.861***	3.016***	2.721***	2.757***
	(0.963)	(0.944)	(1.052)	(1.045)
Normal Vote	0.404***	0.383***	0.375***	0.373***
	(0.108)	(0.106)	(0.113)	(0.112)
March 2020 OSI		-26.411*		-4.980
		(13.941)		(15.294)
Trump Vote Share 2016			0.209***	0.198**
			(0.077)	(0.091)
Observations	131	131	131	131
R^2	0.294	0.312	0.355	0.356
First Stage F-Stat	183.504	282.106	209.692	270.699

This table uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), US Department of the Treasury (2021), Lewis et al. (2021), Algara & Amlani (2021), Leip (2024), MIT Election Lab (2022a, 2022b), and Hale et al. (2023) to estimate the following equations for years 2020, 2021, and 2022 pooled:

$$\frac{\text{Total Aid}_s}{\text{Pop}_s} = \gamma_0 + \gamma_1 \text{Reps Per Million}_s + \gamma_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\gamma + \epsilon_{s,o,t}$$

$$\text{Vote Share}_{s,o,t} = \beta_0 + \beta_1 \frac{\widehat{\text{Total Aid}}_s}{\text{Pop}_s} + \beta_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\beta + u_{s,o,t}$$

Where Total Aid_s is the total federal aid per resident to state and local governments (USD thousands) in state s pooled across all four bills. Total Aid_s is scaled by Pop_s state s's 2020 official Census population. Our outcome of interest, $\text{Vote Share}_{s,o,t}$, is the incumbent party's share of the top two candidates' total votes in state s in year y for office o. $\text{Normal Vote}_{s,o,t}$ is a control for the incumbent party's vote share in the previous election. Column 1 presents baseline estimates of equation (4.2). Included in Columns 2 through 4 is a set of state-level controls ($X_{s,o,t}$). Column 2 controls for a state's March 2020 Oxford Stringency Index, while Column 3 controls for Donald Trump's vote share in the 2016 election in a given state. Column 4 controls for both a state's March 2020 Oxford Stringency Index and its Trump vote share in 2016. Standard errors are clustered by state. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Analysis of Robustness to Population and Density Measures

	(1) Baseline	(2) With Pop. Density	(3) With Pop.	(4) With Total Land Area	(5) All Pop. Controls
Total Aid per Resident (USD thousands)	2.861***	2.538***	2.463***	3.552***	3.259***
	(0.963)	(0.890)	(0.936)	(0.652)	(0.571)
Normal Vote	0.404***	0.405***	0.408***	0.345***	0.330***
	(0.108)	(0.108)	(0.106)	(0.094)	(0.090)
Residents per square mile		-0.007**			-0.011***
		(0.003)			(0.003)
2020 Population (Millions)			-0.107		0.013
			(0.092)		(0.082)
Total Area (10k Square Miles)				-0.173***	-0.218***
				(0.035)	(0.032)
Observations	131	131	131	131	131
R^2	0.294	0.322	0.307	0.329	0.383
First Stage F-Stat	183.504	184.672	277.859	185.459	284.073

This table uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021), US Census Bureau (2010, 2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), US Department of the Treasury (2021), Lewis et al. (2021), Algara & Amlani (2021), Leip (2024), MIT Election Lab (2022a, 2022b), and Hale et al. (2023) to estimate the following equations for years 2020, 2021, and 2022 pooled:

$$\frac{\text{Total Aid}_s}{\text{Pop}_s} = \gamma_0 + \gamma_1 \text{Reps Per Million}_s + \gamma_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\gamma + \epsilon_{s,o,t}$$

$$\text{Vote Share}_{s,o,t} = \beta_0 + \beta 1 \frac{\widehat{\text{Total Aid}}_s}{\text{Pop}_s} + \beta_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\beta + u_{s,o,t}$$

Where Total Aid_s is the total federal aid per resident to state and local governments (USD thousands) in state s pooled across all four bills. Total Aid_s is scaled by Pop_s state s's 2020 official Census population. Our outcome of interest, $\text{Vote Share}_{s,o,t}$, is the incumbent party's share of the top two candidates' total votes in state s in year y for office o. $\text{Normal Vote}_{s,o,t}$ is a control for the incumbent party's vote share in the previous election. Column 1 presents baseline estimates of equation (4.2). Column 2 includes a control for a state's population density, while Column 3 includes a control for a state's total population in 2020. Column 4 controls for a state's total land area, and Column 5 includes controls for both a state's population density and its total population in 2020. Standard errors are clustered by state. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Analysis of the Correlation between Pandemic Aid and Pre-Pandemic Election Outcomes

	(1) Reduced Form	(2) 2SLS	(3) Reduced Form	(4) 2SLS
Reps per Million	2.280*		1.192	
	(1.163)		(1.040)	
Total Aid per Resident (USD thousands)		2.299*		1.195
		(1.204)		(1.060)
Normal Vote			0.471***	0.474***
			(0.129)	(0.127)
Observations	217	217	217	217
R^2	0.054	0.037	0.172	0.167
First Stage F-Stat		290.907		220.761

This table uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), US Department of the Treasury (2021), Lewis et al. (2021), Algara & Amlani (2021), Leip (2024), and MIT Election Lab (2022a, 2022b). The estimated 2SLS model, as estimated on data for 2013-2019, is described by the equations below, while the "Reduced Form" model is estimated by substituting the vote share outcome on the left-hand side of the first equation below:

$$\frac{\text{Total Aid}_s}{\text{Pop}_s} = \gamma_0 + \gamma_1 \text{Reps Per Million}_s + \gamma_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\gamma + \epsilon_{s,o,t}$$

$$\text{Vote Share}_{s,o,t} = \beta_0 + \beta 1 \frac{\widehat{\text{Total Aid}}_s}{\text{Pop}_s} + \beta_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\beta + u_{s,o,t}$$

Where Total Aid_s is the total federal aid per resident to state and local governments (USD thousands) in state s pooled across all four bills. Total Aid_s is scaled by Pop_s state s's 2020 official Census population. Our outcome of interest, $\text{Vote Share}_{s,o,t}$, is the incumbent party's share of the top two candidates' total votes in state s in year y for office o. $\text{Normal Vote}_{s,o,t}$ is a control for the incumbent party's vote share in the previous election. The control vector $X_{s,o,t}$ is empty in this table's specifications. Columns 1 and 3 present the reduced form relationship between our outcome of interest ($\text{Vote Share}_{s,o,t}$) and instrument ($\text{Reps Per Million}_s$). Columns 2 and 4 present estimates of equation (4.2). In Columns 3 and 4, the control $\text{Normal Vote}_{s,o,t}$ is added. Standard errors are clustered by state. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Reduced-Form Panel Estimates of the Relationship between Representation and Incumbents' Vote Shares

	(1)	(2)	(3)	(4)	(5)	(6)
Reps per Million×Pandemic	1.803***	1.528**	2.056***	2.677***	2.795***	3.022***
	(0.627)	(0.728)	(0.767)	(0.649)	(0.657)	(0.602)
Reps per Million	2.280*	1.258	0.820			
	(1.165)	(1.028)	(1.030)			
Pandemic	-2.256	-1.513				
	(1.861)	(2.041)				
Normal Vote		0.442***				
		(0.086)				
Observations	348	348	348	348	348	348
R^2	0.118	0.234	0.302	0.497	0.512	0.617
Year FE	No	No	Yes	Yes	Yes	Yes
Normal Vote x Year FE	No	No	Yes	Yes	Yes	Yes
Office FE	No	No	No	No	Yes	Yes
State FE	No	No	No	Yes	Yes	Yes
Office x State FE	No	No	No	No	No	Yes

This table uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), US Department of the Treasury (2021), Lewis et al. (2021), Algara & Amlani (2021), Leip (2024), and MIT Election Lab (2022a, 2022b) to estimate the following equations for years 2013-2022 pooled:

$$\text{Vote Share}_{s,o,t} = \alpha_0 + \alpha_1 \text{Reps Per Million}_s + \alpha_2 \text{Reps Per Million}_s \times \text{Pandemic}_t + \alpha_3 \text{Pandemic}_t + \epsilon_{s,o,t}$$

$$\text{Vote Share}_{s,o,t} = \phi_s + \phi_t + \phi_o + \phi_s \times \phi_o + \rho \text{Reps Per Million}_s \times \text{Pandemic}_t + \gamma_t \text{Normal Vote}_{s,o,t} \times \text{Year}_t + \epsilon_{s,o,t}$$

Where $\text{Reps Per Million}_s$ is the number of representatives and senators per million residents in 2020. Pandemic_t is an indicator that takes a value of 1 in 2020, 2021, and 2022 and a value of 0 in earlier years. Column 1 presents estimates of (4.3). Column 2 adds the control $\text{Normal Vote}_{s,o,t}$, the incumbent party's vote share from the previous election, to (4.3), while Column 3 adds both year and normal vote x year fixed effects. Column 4 presents estimates of equation (4.4), which adds year and state fixed effects to the specification. Column 5 adds office fixed effects, and Column 6 adds state-by-office fixed effects. Standard errors are clustered by state. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Analysis of Potential Mechanisms Including COVID–19 and Economic Outcomes

	(1) Total Deaths	(2) Total Cases	(3) Change Disp. Inc.	(4) Unemp. Rate
Total Aid per Resident (USD thousands)	-34.560***	-663.150	0.414**	-0.037
	(11.362)	(942.705)	(0.175)	(0.187)
Normal Vote	0.148	-14.828	0.002	-0.020
	(1.389)	(117.058)	(0.022)	(0.019)
Observations	131	131	131	131
R^2	0.045	.	0.014	0.004
First Stage F-Stat	183.504	183.504	183.504	183.504

This table uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021a), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), US Department of the Treasury (2021), Lewis et al. (2021), Dong, Du, and Gardner (2023), U.S. Bureau of Economic Analysis (2024), U.S. Bureau of Labor Statistics (2024), Algara & Amlani (2021), Leip (2024), and MIT Election Lab (2022a, 2022b) to estimate the following equations for years 2020, 2021, and 2022 pooled:

$$\frac{\text{Total Aid}_s}{\text{Pop}_s} = \gamma_0 + \gamma_1 \text{Reps Per Million}_s + \gamma_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\gamma + \epsilon_{s,o,t}$$

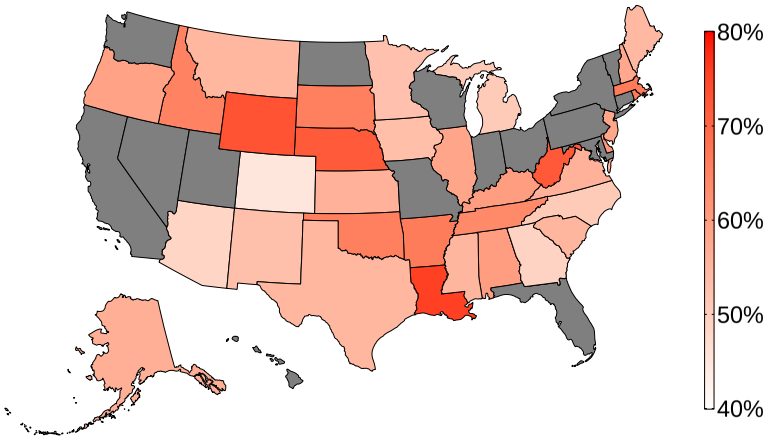
$$\text{Y}_{s,o,t} = \beta_0 + \beta 1 \frac{\widehat{\text{Total Aid}}_s}{\text{Pop}_s} + \beta_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\beta + u_{s,o,t}$$

Where Total Aid_s is the total federal aid per resident to state and local governments (USD thousands) in state s pooled across all four bills. Total Aid_s is scaled by Pop_s state s's 2020 official Census population. $\text{Y}_{s,o,t}$ is a vector of state-level outcomes. $\text{Normal Vote}_{s,o,t}$ is a control for the incumbent party's vote share in the previous election. Column 1 uses the total number of COVID-19 deaths in December of year y in state s as the outcome of interest, while Column 2 uses the total number of COVID-19 cases in December of year y in state s. Column 3 uses the change in nominal disposable income from the previous year (USD thousands). Column 4 uses the change in unemployment rate from the previous year. Standard errors are clustered by state.

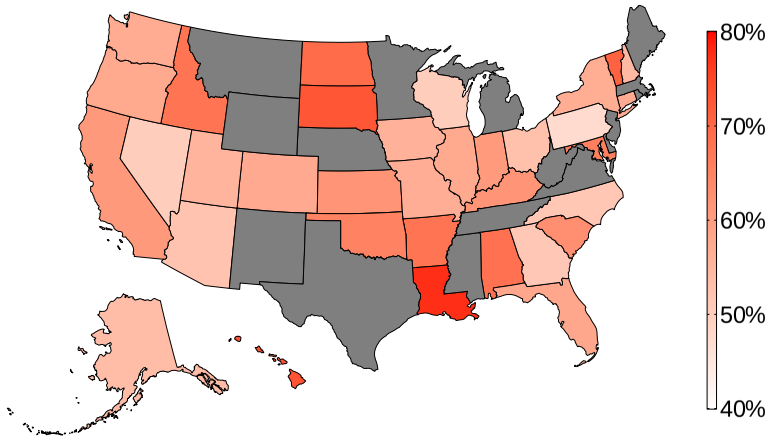
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 1: In-Sample Elections and Incumbent Party's Share of Top 2 Candidates' Votes

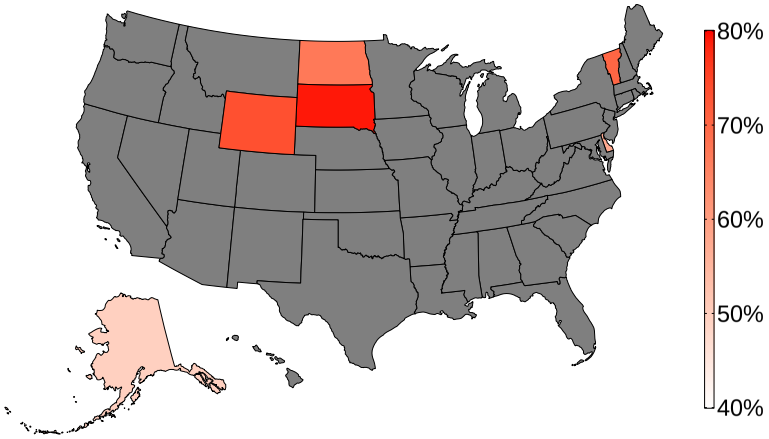
Panel A: Senate 2020



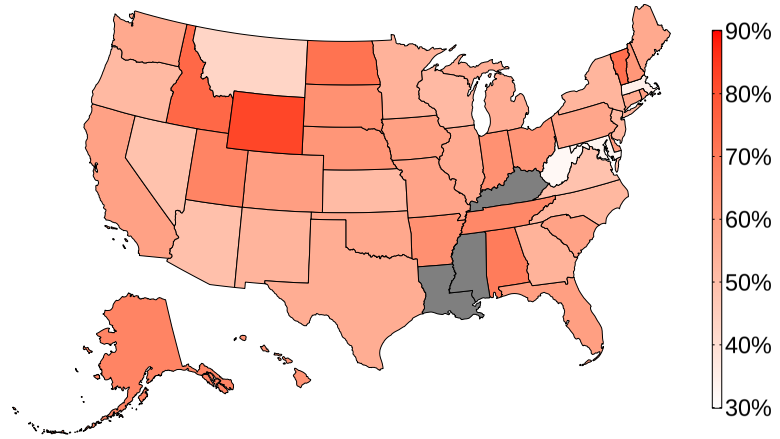
Panel B: Senate 2022



Panel C: House-At-Large

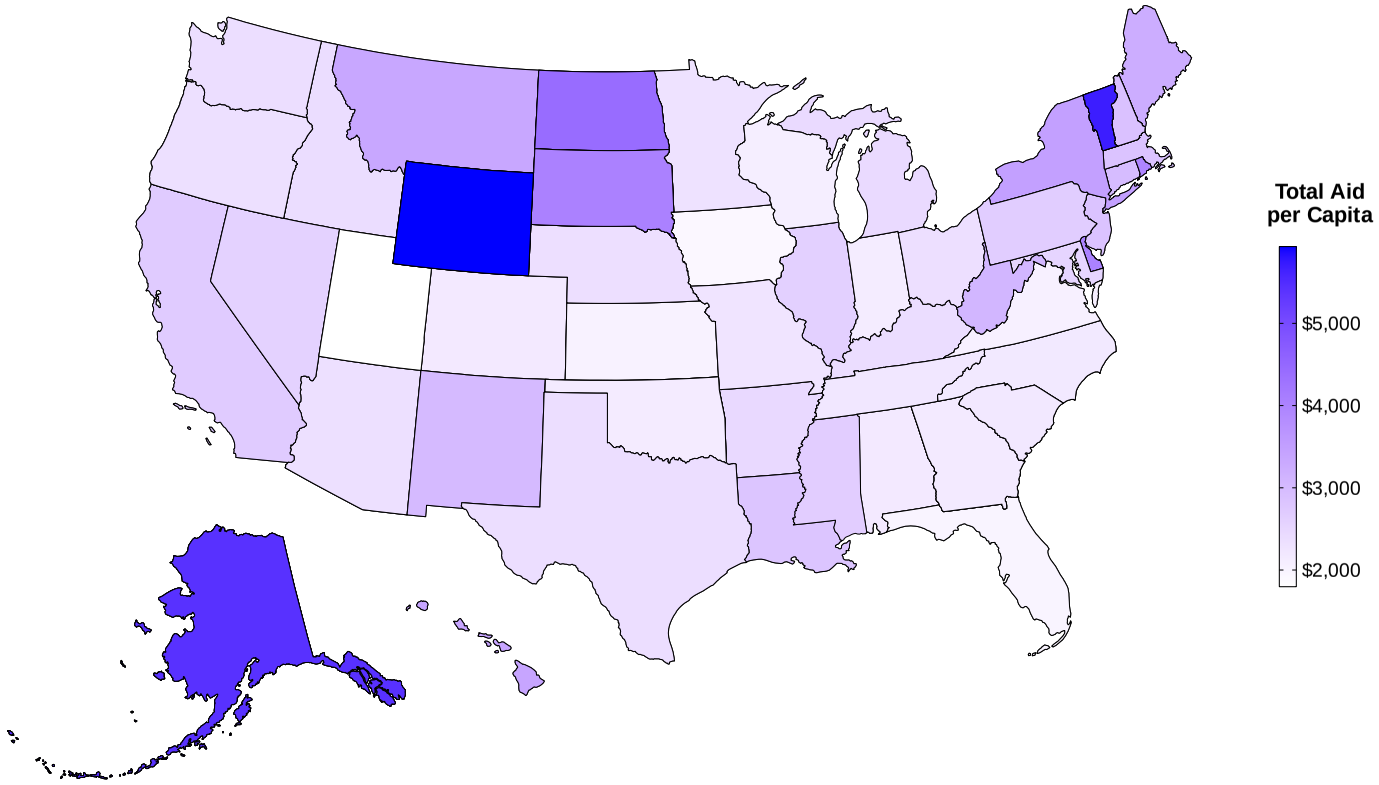


Panel D: Gubernatorial



Note: This figure uses data from data from Amlani and Algara (2021), Leip (2024), and MIT Election Lab (2022a, 2022b) to show the geographic distribution of incumbent party vote share of the top two candidates total votes for Senate, at-large House, and gubernatorial elections during the pandemic era. Panel A showcases the incumbent party vote share for 2020 Senate elections, while Panel B showcases the same for 2022 Senate elections. Panel C showcases the average of 2020 and 2022 incumbent party vote share for at-large House elections. Panel D showcases the incumbent party vote share for gubernatorial elections between 2020-2022. Values shown for Vermont and New Hampshire, which hold gubernatorial elections every two years, are averages of 2020 and 2022 values. In the special cases of Oklahoma and Georgia, which each had two Senate elections in a single year (2022 and 2020, respectively), the values shown are the averages of the results from both elections in those states.occurred in the respective states.

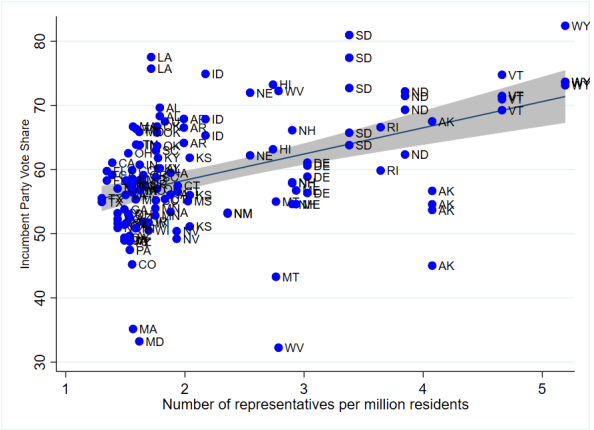
Figure 2: Geographic Distribution of Total State and Local Aid



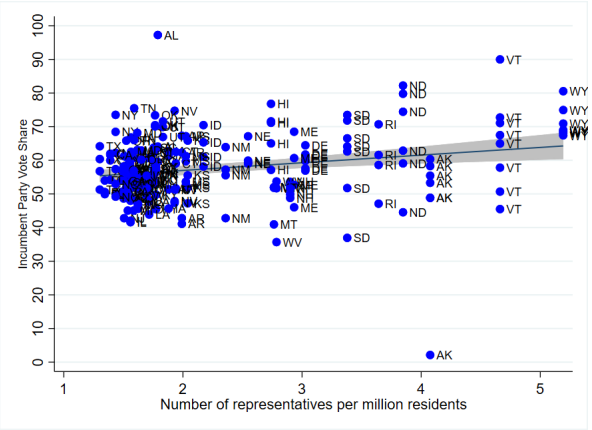
Note: This figure uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), and US Department of the Treasury (2021) to show the geographic distribution in total aid per capita to in USD.

Figure 3: Distribution of Incumbent Party Vote Share

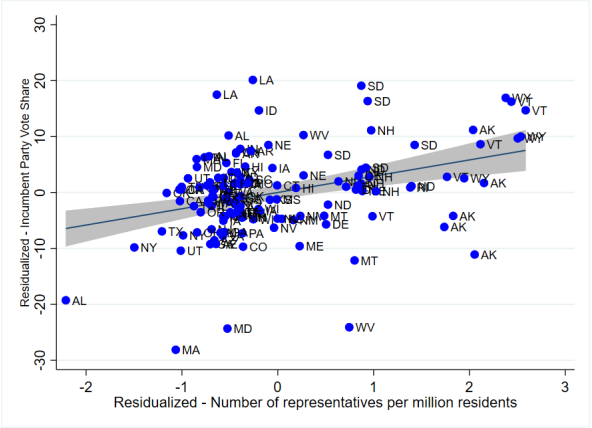
(a) Incumbent Party Vote Share vs. Congressional Representation (Main Sample)



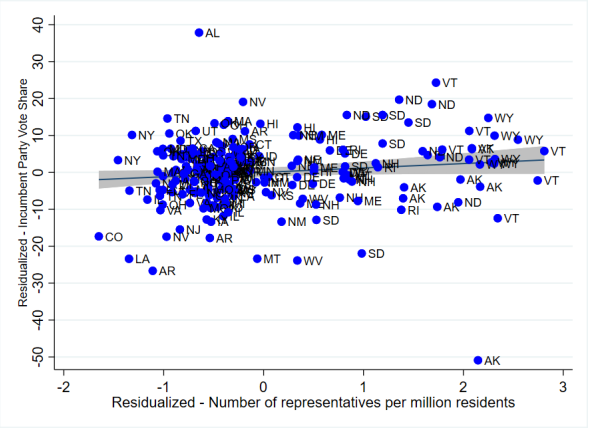
(b) Incumbent Party Vote Share vs. Congressional Representation (Placebo)



(c) Residualized Incumbent Party Vote Share vs. Congressional Representation (Main Sample)



(d) Residualized Incumbent Party Vote Share vs. Congressional Representation (Placebo)



Panels A plot congressional representation against incumbent party share of the top two candidate's total votes for our main sample (2020-2022), while Panel B plots the equivalent for the placebo sample (2013-2019). Panels C and D regress the remaining variation in representation and incumbent vote share after controlling for the normal vote, mirroring the results in 1 Column 4 and Table 5 Column 3. This figure uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), and US Department of the Treasury (2021), Amlani and Algara (2021), Leip (2024), and MIT Election Data and Science Lab (2022*b*,*a*). The slope coefficients for displayed regressions are 4.280 in Panel A, 2.280 in Panel B, 2.910 in Panel C, and 1.192 in Panel D.

Online Appendix for Aid for Incumbents: The Electoral Consequences of COVID-19 Relief

Intended for online publication only.

Table A.1: Summary Statistics

Panel A: Pandemic Elections (2020-2022)					
	Mean	SD	Min	Max	N
Incumbent Vote Share	59.643	9.010	32.250	82.403	131
Total Aid per Resident (USD thousands)	3.004	1.124	1.804	5.927	131
Reps per Million	2.319	1.036	1.302	5.193	131
Normal Vote	59.921	8.355	50.072	97.252	131
March 2020 OSI	0.433	0.050	0.335	0.560	131
2016 Trump Vote Share	49.800	10.492	29.440	68.631	131
Total Deaths	227.223	129.297	21.818	437.401	131
Total Cases	20645.413	12225.960	1189.065	41967.128	131
Change Disposable Income From Previous Year (USD thousands)	1.635	1.739	-2.440	4.876	131
Change in Unemployment Rate From Previous Year	5.002	1.909	2.100	10.058	131
Panel B: Pre-Pandemic Sample (2013-2019)					
	Mean	SD	Min	Max	N
Incumbent Vote Share	57.668	10.015	2.121	97.252	217
Total Aid per Resident (USD thousands)	3.004	1.095	1.804	5.927	217
Reps per Million	2.298	1.025	1.302	5.193	217
Normal Vote	60.110	7.666	47.521	82.085	217
Change Disposable Income From Previous Year (USD thousands)	1.526	0.942	-1.989	3.542	217
Change in Unemployment Rate From Previous Year	4.649	1.361	2.358	8.375	217

This table uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), and US Department of the Treasury (2021), Lewis et al. (2021), Amlani and Algara (2021), Leip (2024), MIT Election Data and Science Lab (2022*b*,*a*), Hale et al. (2020), Dong, Du, and Gardner (2020), US Bureau of Economic Analysis (2024), and US Bureau of Labor Statistics (2024). "OSI" is the Oxford Stringency Index.

Table A.2: Summary Statistics - Mechanisms

Panel A: Pandemic Elections (2020-2022)

	Mean	SD	Min	Max	N
Δ Log Inc. Party Receipts	0.588	1.167	-1.853	6.286	129
Δ Log Challenger Party Receipts	0.276	2.025	-5.101	8.940	119
Outcome-Control Election Year Dummy	0.618	0.488	0.000	1.000	131
Share State Sen. Controlled by Inc. Gov's Party	61.462	19.769	7.500	93.548	49
Share State House Controlled by Inc. Gov's Party	60.099	18.970	15.625	91.935	48
Share State Sen. Controlled by Inc. Sen's Party	68.140	13.736	38.235	93.333	70
Share State House Controlled by Inc. Sen's Party	66.803	12.474	36.923	90.000	69
Inc. Party Votes / VEP	0.312	0.072	0.146	0.494	131
Challenger Party Votes / VEP	0.216	0.069	0.070	0.403	128
Total Votes / VEP	0.545	0.109	0.330	0.773	131
MoV, Inc. Gov.'s Party (Down-Ballot Elections)	13.125	25.404	-40.200	100.000	116
MoV, Inc.'s Party (Down-Ballot Elections)	19.310	21.213	-32.500	100.000	115

Panel B: Pre-Pandemic Elections

	Mean	SD	Min	Max	N
Δ Log Inc. Party Receipts	0.330	1.192	-5.326	5.849	127
Δ Log Challenger Party Receipts	0.345	1.783	-5.523	8.541	114
Share State Sen. Controlled by Inc. Gov's Party	60.366	19.811	7.692	96.000	49
Share State House Controlled by Inc. Gov's Party	59.875	17.427	18.239	92.157	48
Share State Sen. Controlled by Inc. Sen's Party	67.122	12.970	39.286	96.000	70
Share State House Controlled by Inc. Sen's Party	65.413	11.947	36.923	92.157	69
Challenger Party Votes / VEP	0.198	0.077	0.000	0.466	128
Inc. Party Votes / VEP	0.298	0.067	0.159	0.534	131
Total Votes / VEP	0.526	0.109	0.229	1.053	131
MoV, Inc. Gov.'s Party (Down-Ballot Elections)	10.373	20.933	-43.800	100.000	115
MoV, Inc.'s Party (Down-Ballot Elections)	17.807	15.724	0.400	100.000	116

This table uses data from OpenSecrets (2024), FollowTheMoney (2023), National Conference of State Legislatures (2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024), University of Florida Election Lab (2014, 2016, 2018, 2020, 2022), Virginia Department of Elections (2023), New Jersey Voter Information Portal (2017, 2021), and Ballotpedia (2020a, 2020b, 2020c, 2021a, 2021b, 2021c, 2022a, 2022b, 2022c). Panel A includes the sample of statewide elections between 2020-2022. Panel B includes the sample of most recent pre-pandemic elections between 2013-2019 that are analogous to the pandemic sample. Data availability of the pre-pandemic sample limits the availability of some data points. "Down-Ballot Elections" refers to the offices of lieutenant governor, secretary of state, and attorney general. "OSI" is the Oxford Stringency Index. "VEP" is the voting eligible population counts. "MoV" is the margin of victory. "Outcome-Control Election Year Dummy" is a dummy variable indicating whether the election year was designated as a control year in the analysis.

Table A.3: Estimates of the Effect of Aid on Incumbents' Vote Shares Based on Leave-One-Out First Stage Re-Sampling

	(1) Reduced Form	(2) First Stage	(3) 2SLS	(4) Reduced Form	(5) First Stage	(6) 2SLS	(7) 2SLS (diff. FS)	(8) 2SLS (diff. FS)
Reps per Million	4.083***	1.013***		2.910***	1.017***			
	(0.981)	(0.059)		(0.886)	(0.075)			
Total Aid per Resident (USD thousands)			4.032***			2.861***	4.126***	2.965***
			(1.079)			(0.963)	(1.039)	(0.896)
Normal Vote				0.400***	-0.002	0.404***		0.399***
				(0.103)	(0.008)	(0.108)		(0.102)
Observations	131	131	131	131	131	131	131	131
R^2	0.220	0.870	0.143	0.340	0.870	0.294	0.225	0.343
First Stage F-Stat			293.569			183.504		

This table uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), and US Department of the Treasury (2021), Lewis et al. (2021), Amlani and Algara (2021), Leip (2024), and MIT Election Data and Science Lab (2022*b*,*a*). This table is identical to Table 1, with the addition of Columns 7 and 8, which present 2SLS estimates using a leave-one-out approach in the first stage. This method iteratively excludes each state's observations, estimates the first-stage regression on the remaining sample, and uses the resulting coefficients to produce $\frac{\widehat{\text{Total Aid}}_s}{\text{Pop}_s}$ for the excluded observations. These predicted values are then used in the second stage of the 2SLS estimation to produce the reported coefficients in Columns 7 and 8. Standard errors for the coefficients in Columns 7 and 8 are cluster bootstrapped. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.4: Baseline Estimates of the Effect of Aid on Incumbents' Vote Shares: Analysis of Sensitivity to Using the Running Total of Aid Rather than the Grand Total of Aid

	(1) Reduced Form	(2) First Stage	(3) 2SLS	(4) Reduced Form	(5) First Stage	(6) 2SLS
Reps per Million	4.083***	0.724***		2.910***	0.743***	
	(0.981)	(0.080)		(0.886)	(0.099)	
Running Total of Aid per capita (USD thousands)			5.640***			3.916***
			(1.628)			(1.350)
Normal Vote				0.400***	-0.007	0.426***
				(0.103)	(0.011)	(0.099)
Observations	131	131	131	131	131	131
R^2	0.220	0.348	.	0.340	0.350	0.132
First Stage F-Stat			82.636			56.641

This table uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), US Department of the Treasury (2021), Lewis et al. (2021), Amlani and Algara (2021), Leip (2024), and MIT Election Data and Science Lab (2022*b*,*a*) to estimate the following equations for years 2020, 2021, and 2022 pooled:

$$\frac{\text{Running Aid}_s}{\text{Pop}_s} = \gamma_0 + \gamma_1 \text{Reps Per Million}_s + \gamma_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\gamma + \epsilon_{s,o,t}$$

$$\text{Vote Share}_{s,o,t} = \beta_0 + \beta_1 \frac{\widehat{\text{Running Aid}}_s}{\text{Pop}_s} + \beta_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\beta + u_{s,o,t}$$

Where Running Aid_s is the running total of federal aid per resident to state and local governments (USD thousands) in state s. For observations in 2020, this includes the sum of funding from the CARES Act and Families First Coronavirus Response Act (FFCRA). For observations in 2021 and 2022, this includes the sum of funding from all four major bills (CARES, FFCRA, RRA, and ARPA). $\text{Running Aid}_{s,o,t}$ is scaled by Pop_s state s's 2020 official Census population. Our outcome of interest, $\text{Vote Share}_{s,o,t}$, is the incumbent party's share of the top two candidate's total votes in state s in year y for office o. $\text{Normal Vote}_{s,o,t}$ is a control for the incumbent party's vote share in the previous election. The control vector $X_{s,o,t}$ is empty in this table's specifications. Columns 1 and 4 present the reduced form relationship between our outcome of interest ($\text{Vote Share}_{s,o,t}$) and instrument ($\text{Reps Per Million}_s$). In the first stage regression presented in Columns 2 and 5, $\frac{\text{Running Aid}_s}{\text{Pop}_s}$ is instrumented using ($\text{Reps Per Million}_s$), the number of representatives and senators per million residents in 2020. The fitted values from the first stage are used to estimate the second stage. Columns 4 and 6 present estimates of the second stage. Columns 3 through 6, add $\text{Normal Vote}_{s,o,t}$ which is the incumbent party's vote share in the previous election. Standard errors are clustered by state. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.5: Reduced-Form Panel Estimates of the Relationship between Representation and Incumbents' Vote Shares: A Comparison of Senate and Gubernatorial Elections

	Senate Elections				Gubernatorial Elections			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pandemic × Reps per Million	1.139	0.753	1.274	2.850**	5.004**	4.896**	5.194**	5.818***
	(1.202)	(1.185)	(1.334)	(1.249)	(1.885)	(1.912)	(2.265)	(2.094)
Reps per Million	2.403**	1.074	0.912		0.141	-0.223	-0.667	
	(1.138)	(0.748)	(0.895)		(2.027)	(1.863)	(2.029)	
Pandemic	-1.620	-0.705			-7.800**	-7.220*		
	(2.765)	(2.915)			(3.779)	(3.887)		
Normal Vote		0.490***				0.291*		
		(0.092)				(0.145)		
Observations	175	175	175	175	143	143	143	143
R^2	0.079	0.253	0.314	0.601	0.115	0.156	0.231	0.620
Year FE	No	No	Yes	Yes	No	No	Yes	Yes
State FE	No	No	No	Yes	No	No	No	Yes
Normal Vote×Year FE	No	No	Yes	Yes	No	No	Yes	Yes

This table uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), and US Department of the Treasury (2021), Lewis et al. (2021), Amlani and Algara (2021), Leip (2024), and MIT Election Data and Science Lab (2022*b*,*a*) to estimate the following equations for years 2013-2022 pooled:

$$\text{Vote Share}_{s,o,t} = \alpha_0 + \alpha_1 \text{Reps Per Million}_s + \alpha_2 \text{Reps Per Million}_s \times \text{Pandemic}_t + \alpha_3 \text{Pandemic}_t + \epsilon_{s,o,t}$$

$$\text{Vote Share}_{s,o,t} = \alpha_s + \alpha_t + \alpha_s \times \alpha_o + \rho \text{Reps Per Million}_s \times \text{Pandemic}_t + \gamma_t \text{Normal Vote}_{s,o,t} \times \text{Year}_t + \epsilon_{s,o,t}$$

Where Reps Per Million$_s$ is the number of representatives and senators per million residents in 2020. Pandemic$_t$ is an indicator that takes a value of 1 in 2020, 2021, and 2022 and a value of 0 in earlier years. Column 1 presents estimates of the reduced form relationship. Column 2 adds the control Normal Vote$_{s,o,t}$, the incumbent party's vote share from the previous election, while Column 3 adds both year and normal vote x year fixed effects. Column 4 presents estimates including year and state fixed effects. Columns 1 through 4 show estimates for Senate races, while Columns 5 through 8 show estimates for gubernatorial races. Standard errors are clustered by state. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.6: Instrumental-Variable Estimates of the Effect of Aid on Bill-Specific Media Coverage

	CARES + ARPA		CARES		ARPA	
	(1)	(2)	(3)	(4)	(5)	(6)
Total Aid per Resident (USD thousands)	-0.829	-0.656	-0.995	2.824	-1.128	-0.800
	(1.223)	(1.161)	(7.796)	(7.549)	(2.098)	(1.998)
Normal Vote	0.077		1.097		0.146	
	(0.131)		(0.734)		(0.224)	
Observations	27	27	65	65	27	27
R^2	0.037	0.022	0.036	0.002	0.038	0.017

This table presents the 2SLS estimates of the effect of COVID-19 fiscal aid on the ratio of news stories mentioning gubernatorial incumbents to senatorial incumbents. The estimates are provided for the sum of stories discussing the CARES and ARPA acts, as well as for the CARES-specific and ARPA-specific coverage. The dependent variables represent the ratios of news coverage, with independent variables including total aid per resident and the normal vote share. Standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.7: Instrumental-Variable Estimates of the Effect of Aid on State Legislature Composition

	(1) Share State Sen. Controlled by Inc. Gov.'s Party	(2) Share State House Controlled by Inc. Gov.'s Party	(3) Share State Sen. Controlled by Inc. Sen.'s Party	(4) Share State House Controlled by Inc. Sen.'s Party
Total Aid per Resident (USD thousands)	-0.429	0.010	-0.271	0.176
	(0.716)	(0.632)	(0.807)	(0.736)
Lagged Dep. Var	0.960***	1.055***	1.010***	0.949***
	(0.030)	(0.033)	(0.032)	(0.047)
Normal Vote	0.084	-0.009	0.017	0.066
	(0.125)	(0.082)	(0.056)	(0.073)
Observations	49	48	70	69
R^2	0.945	0.937	0.915	0.886
First-Stage F Stat	137.401	151.041	101.334	107.387

This table uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021a), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), US Department of the Treasury (2021), Lewis et al. (2021), Dong, Du, and Gardner (2023), U.S. Bureau of Economic Analysis (2024), U.S. Bureau of Labor Statistics (2024), Algara & Amlani (2021), Leip (2024), MIT Election Lab (2022a, 2022b), and the National Conference of State Legislatures (2013–2024), to estimate the following equations for years 2020, 2021, and 2022 pooled:

$$\frac{\text{Total Aid}_s}{\text{Pop}_s} = \gamma_0 + \gamma_1 \text{Reps Per Million}_s + \gamma_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\gamma + \epsilon_{s,o,t}$$

$$\text{Y}_{s,o,t} = \beta_0 + \beta_1 \frac{\widehat{\text{Total Aid}}_s}{\text{Pop}_s} + \beta_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\beta + u_{s,o,t}$$

Where Total Aid_s is the total federal aid per resident to state and local governments (USD thousands) in state s pooled across all four bills. Total Aid_s is scaled by Pop_s state s's 2020 official Census population. $\text{Y}_{s,o,t}$ is a vector of state-level outcomes. $\text{Normal Vote}_{s,o,t}$ is a control for the incumbent party's vote share in the previous election. $\text{X}_{s,o,t}$ is a vector for additional state-level controls. In this table, $\text{X}_{s,o,t}$ contains the lagged dependent variable. Column 1 uses the share of the state senate controlled by the incumbent governor's party in year y in state s as the outcome of interest, while Column 2 uses the share of the state house controlled by the incumbent governor's party. Column 3 uses the share of the state senate controlled by the incumbent senator's party in year y in state s as the outcome of interest, and Column 4 uses the share of the state house controlled by the incumbent senator's party. Standard errors are clustered by state. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.8: Panel Estimates of the Effect of Aid on State Legislature Composition

	Share State Sen. Controlled by Inc. Gov.'s Party		Share State House Controlled by Inc. Gov.'s Party		Share State Sen. Controlled by Inc. Sen.'s Party		Share State House Controlled by Inc. Sen.'s Party	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pandemic× Reps per Million	-0.238	-0.506	0.738	0.194	-0.152	0.800	0.673	1.151
	(0.876)	(0.983)	(0.857)	(0.737)	(0.744)	(0.768)	(0.691)	(0.751)
Reps per Million	-0.053		-0.720		0.095		-0.259	
	(0.486)		(0.606)		(0.572)		(0.501)	
Pandemic	1.518		-1.427		-0.190		-0.576	
	(1.877)		(1.807)		(1.444)		(1.323)	
Lagged Dep. Var	0.982***	0.940***	0.996***	0.932***	0.974***	0.959***	0.946***	0.951***
	(0.019)	(0.038)	(0.029)	(0.037)	(0.024)	(0.050)	(0.026)	(0.055)
Observations	142	142	139	139	175	175	172	172
R^2	0.919	0.950	0.889	0.941	0.918	0.946	0.880	0.924
Office FE	No	Yes	No	Yes	No	Yes	No	Yes
Year FE	No	Yes	No	Yes	No	Yes	No	Yes
State FE	No	Yes	No	Yes	No	Yes	No	Yes
Normal Vote x Year FE	No	Yes	No	Yes	No	Yes	No	Yes
Office x State FE	No	Yes	No	Yes	No	Yes	No	Yes

This table uses the data described in Table A.7 to estimate the following equations for years 2013-2022 pooled:

$$\text{Y}_{s,o,t} = \alpha_0 + \alpha_1 \text{Reps Per Million}_s + \alpha_2 \text{Reps Per Million}_s \times \text{Pandemic}_t + \alpha_3 \text{Pandemic}_t + \epsilon_{s,o,t}$$

$$\text{Y}_{s,o,t} = \alpha_s + \alpha_t + \alpha_s \times \alpha_o + \rho \text{Reps Per Million}_s \times \text{Pandemic}_t + \gamma_t \text{Normal Vote}_{s,o,t} \times \text{Year}_t + \epsilon_{s,o,t}$$

Where $\text{Reps Per Million}_s$ is the number of representatives and senators per million residents in 2020. Pandemic_t is an indicator that takes a value of 1 in 2020, 2021, and 2022 and a value of 0 in earlier years. $\text{Y}_{s,o,t}$ is a vector of state-level outcomes. In this table, in Columns 1-2, $\text{Y}_{s,o,t}$ is the share of a state senate controlled by the incumbent governor's party in state i in year y. In Columns 3-4, $\text{Y}_{s,o,t}$ is the share of a state house controlled by the incumbent governor's party in state i in year y. In Columns 5-6, $\text{Y}_{s,o,t}$ is the share of a state senate controlled by the incumbent senator's party in state i in year y. In Columns 3-4, $\text{Y}_{s,o,t}$ is the share of a state house controlled by the incumbent senator's party in state i in year y. Columns 1, 4, 5, and 7 present estimates of (4.3). Columns 2, 4, 6, and 8 add office, year, state, normal vote x year and office x state fixed effects to the specification. Standard errors are clustered by state. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.9: Instrumental-Variable Estimates of the Effect of Aid on Additional Statewide Elections

	MoV Governor's Party				MoV Incumbent's Party			
	Incl. Same-Ticket		Excl. Same-Ticket		Incl. Same-Ticket		Excl. Same-Ticket	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Total federal aid per resident (USD millions)	0.683	1.974	2.439	3.406	8.343**	6.355*	11.109***	9.542***
	(7.306)	(3.510)	(8.305)	(4.103)	(3.639)	(3.665)	(3.495)	(3.616)
Lagged Dep. Var		0.742***		0.730***		0.306***		0.204*
		(0.114)		(0.116)		(0.111)		(0.108)
Observations	116	115	100	99	115	115	99	99
R^2	.	0.349	.	0.338	0.032	0.104	0.069	0.113
First Stage F-Stat	178.668	360.237	177.342	310.882	178.373	146.077	176.702	130.846

This table uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021a), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), US Department of the Treasury (2021), Lewis et al. (2021), Dong, Du, and Gardner (2023), U.S. Bureau of Economic Analysis (2024), U.S. Bureau of Labor Statistics (2024), Algara & Amlani (2021), Leip (2024), MIT Election Lab (2022a, 2022b), and Ballotpedia (2020a, 2020b, 2020c, 2021a, 2021b, 2021c, 2022a, 2022b, 2022c) to estimate the following equations for years 2020, 2021, and 2022 pooled:

$$\frac{\text{Total Aid}_s}{\text{Pop}_s} = \gamma_0 + \gamma_1 \text{Reps Per Million}_s + \gamma_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\gamma + \epsilon_{s,o,t}$$

$$\text{Y}_{s,o,t} = \beta_0 + \beta_1 \frac{\widehat{\text{Total Aid}}_s}{\text{Pop}_s} + \beta_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\beta + u_{s,o,t}$$

Where Total Aid_s is the total federal aid per resident to state and local governments (USD thousands) in state s pooled across all four bills. Total Aid_s is scaled by Pop_s state s's 2020 official Census population. $\text{Y}_{s,o,t}$ is a vector of state-level outcomes. $\text{X}_{s,o,t}$ is a vector for additional state-level controls. In this table, $\text{X}_{s,o,t}$ contains the lagged dependent variable. Columns 1 and 2 use the margin of victory of the incumbent governor's party in an attorney general, secretary state, or lieutenant governor race in year y in state s as the outcome of interest, while Columns 3 and 4 use the margin of victory of the incumbent attorney general, secretary state, or lieutenant governor's party in year y in state s. Columns 1 and 3 include races where the candidate runs on the same ticket as the governor, while Columns 2 and 4 exclude such races. Standard errors are clustered by state. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.10: Instrumental-Variable Estimates of the Effect of Aid on Voter Turnout

	(1) Inc. Party Votes /VEP	(2) Chall. Party Votes /VEP	(3) Tot. Party Votes /VEP
Total Aid per Resident (USD thousands)	0.024***	-0.008	0.020**
	(0.008)	(0.005)	(0.008)
Lagged Dep. Var	-0.028	-0.034	-0.036
	(0.084)	(0.074)	(0.067)
Normal Vote	0.001	-0.003***	-0.003**
	(0.001)	(0.001)	(0.001)
Observations	131	128	131
R^2	0.086	0.203	0.026
First Stage F-Stat	179.686	182.521	181.148

This table uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021a), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), US Department of the Treasury (2021), Lewis et al. (2021), Dong, Du, and Gardner (2023), U.S. Bureau of Economic Analysis (2024), U.S. Bureau of Labor Statistics (2024), Algara & Amlani (2021), Leip (2024), MIT Election Lab (2022a, 2022b), University of Florida Election Lab (2014, 2016, 2018, 2020, 2022), Virginia Department of Elections (2023), and New Jersey Voter Information Portal (2017, 2021) to estimate the following equations for years 2020, 2021, and 2022 pooled:

$$\frac{\text{Total Aid}_s}{\text{Pop}_s} = \gamma_0 + \gamma_1 \text{Reps Per Million}_s + \gamma_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\gamma + \epsilon_{s,o,t}$$

$$\text{Y}_{s,o,t} = \beta_0 + \beta 1 \frac{\widehat{\text{Total Aid}}_s}{\text{Pop}_s} + \beta_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\beta + u_{s,o,t}$$

Where Total Aid_s is the total federal aid per resident to state and local governments (USD thousands) in state s pooled across all four bills. Total Aid_s is scaled by Pop_s state s's 2020 official Census population. $\text{Y}_{s,o,t}$ is a vector of state-level outcomes. $\text{Normal Vote}_{s,o,t}$ is a control for the incumbent party's vote share in the previous election. Column 1 uses the incumbent party's total votes as a share of the total voting-eligible population in year y in state s as the outcome of interest, while Column 2 uses the challenger's party's total votes as a share of the total voting-eligible population in year y in state s. Column 3 uses the total number of cast votes as a share of the total voting-eligible population in year y in state s. For years in which voting-eligible population estimates are not available (ex., in odd-numbered election years), the total number of registered voters is used. Standard errors are clustered by state.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.11: Panel Estimates of the Effect of Aid on Voter Turnout

	Inc. Party Votes/VEP		Chall. Party Votes/VEP		Tot. Party Votes/VEP	
	(1)	(2)	(3)	(4)	(5)	(6)
Pandemic× Reps per Million	0.013**	0.013**	-0.006	-0.015***	0.004	-0.005
	(0.005)	(0.005)	(0.005)	(0.004)	(0.008)	(0.007)
Reps per Million	0.013**		-0.011*		0.008	
	(0.006)		(0.007)		(0.009)	
Pandemic	0.010		0.029*		0.040*	
	(0.012)		(0.015)		(0.021)	
Observations	340	340	334	334	340	340
R^2	0.137	0.788	0.059	0.698	0.056	0.861
Office FE	No	Yes	No	Yes	No	Yes
Year FE	No	Yes	No	Yes	No	Yes
State FE	No	Yes	No	Yes	No	Yes
Normal Vote x Year FE	No	Yes	No	Yes	No	Yes
Office x State FE	No	Yes	No	Yes	No	Yes

This table uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), US Department of the Treasury (2021), Lewis et al. (2021), Amlani and Algara (2021), Leip (2024), MIT Election Data and Science Lab (2022*b,a*), University of Florida Election Lab (2014, 2016, 2018, 2020, 2022), Virginia Department of Elections (2023), and New Jersey Voter Information Portal (2017, 2021), to estimate the following equations for years 2013-2022 pooled:

$$\text{Vote Share}_{s,o,t} = \alpha_0 + \alpha_1 \text{Reps Per Million}_s + \alpha_2 \text{Reps Per Million}_s \times \text{Pandemic}_t + \alpha_3 \text{Pandemic}_t + \epsilon_{s,o,t}$$

$$\text{Vote Share}_{s,o,t} = \alpha_s + \alpha_t + \alpha_s \times \alpha_o + \rho \text{Reps Per Million}_s \times \text{Pandemic}_t + \gamma_t \text{Normal Vote}_{s,o,t} \times \text{Year}_t + \epsilon_{s,o,t}$$

Where $\text{Reps Per Million}_s$ is the number of representatives and senators per million residents in 2020. Pandemic_t is an indicator that takes a value of 1 in 2020, 2021, and 2022 and a value of 0 in earlier years. Columns 1, 3, and 5 present estimates of (4.3). Columns 2, 4, and 6 present estimates of equation (4.4), which adds year, office, state, normal vote-by-office, and office-by-state fixed effects to the specification. Standard errors are clustered by state. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.12: Instrumental-Variable Estimates of the Effect of Aid on Campaign Finance

	(1) Δ Incumbent Party Total Receipts (log)	(2) Δ Challenger Party Total Receipts (log)
Total Aid per Resident (USD thousands)	-0.127	-0.197
	(0.083)	(0.260)
Lagged Dep. Var	-0.456***	-0.448***
	(0.146)	(0.166)
Normal Vote	-0.018*	-0.000
	(0.010)	(0.029)
Outcome-Control Election Year Dummy	0.091	0.278
	(0.163)	(0.298)
Observations	127	112
R^2	0.262	0.164
First Stage F-Stat	182.425	143.748

This table uses data from the Committee for a Responsible Federal Budget (2021), US Federal Transit Administration (2021a), US Census Bureau (2021), Chidambaram and Musumeci (2021), Medicaid and Chip Payment Access Commission (2021), US Office of Elementary and Secondary Education (2021), US Department of the Treasury (2021), Lewis et al. (2021), Dong, Du, and Gardner (2023), U.S. Bureau of Economic Analysis (2024), U.S. Bureau of Labor Statistics (2024), Algara & Amlani (2021), Leip (2024), MIT Election Lab (2022a, 2022b), OpenSecrets (2024), and FollowTheMoney (2023) to estimate the following equations for years 2020, 2021, and 2022 pooled:

$$\frac{\text{Total Aid}_s}{\text{Pop}_s} = \gamma_0 + \gamma_1 \text{Reps Per Million}_s + \gamma_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\gamma + \epsilon_{s,o,t}$$

$$\text{Y}_{s,o,t} = \beta_0 + \beta_1 \frac{\widehat{\text{Total Aid}}_s}{\text{Pop}_s} + \beta_2 \text{Normal Vote}_{s,o,t} + X_{s,o,t}\beta + u_{s,o,t}$$

Where Total Aid_s is the total federal aid per resident to state and local governments (USD thousands) in state s pooled across all four bills. Total Aid_s is scaled by Pop_s state s's 2020 official Census population. $\text{Y}_{s,o,t}$ is a vector of state-level outcomes. $\text{Normal Vote}_{s,o,t}$ is a control for the incumbent party's vote share in the previous election. In this table, $\text{X}_{s,o,t}$ contains the lagged dependent variable and a dummy variable that takes the value of 1 if the dependent and lagged dependent variables fall in different presidential election cycles. Column 1 uses the change in the logged incumbent party's total receipts between the election in year y and the most recent election (that occurred in the same presidential election cycle) in state s as the outcome of interest. Column 2 uses the change in the logged challenger's party's total receipts between the election in year y and the most recent election (that occurred in the same presidential election cycle) in state s as the outcome of interest. Standard errors are clustered by state. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.13: Panel Estimates of the Effect of Aid on Campaign Finance

	Δ Log(Inc. Party Tot. Receipts)				Δ Log(Chall. Party Tot. Receipts)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pandemic× Reps per Million	-0.234**	-0.229**	-0.225**	-0.180*	-0.164	-0.173	-0.253	-0.242
	(0.092)	(0.090)	(0.107)	(0.104)	(0.179)	(0.190)	(0.219)	(0.220)
Reps per Million	0.054	0.077*			-0.035	-0.061		
	(0.041)	(0.041)			(0.191)	(0.197)		
Pandemic	0.871***	0.864***			0.710	0.723		
	(0.291)	(0.289)			(0.504)	(0.518)		
Normal Vote		-0.010				0.016		
		(0.006)				(0.019)		
Lagged Dep. Var.	-0.316***	-0.325***	-0.355***	-0.411***	-0.535***	-0.518***	-0.515***	-0.484***
	(0.092)	(0.092)	(0.099)	(0.109)	(0.098)	(0.096)	(0.094)	(0.081)
Observations	277	277	277	273	251	251	251	239
R^2	0.188	0.193	0.411	0.624	0.200	0.203	0.441	0.601
Office FE	No	No	No	Yes	No	No	No	Yes
Year FE	No	No	Yes	Yes	No	No	Yes	Yes
State FE	No	No	Yes	Yes	No	No	Yes	Yes
Normal Vote x Year FE	No	No	Yes	Yes	No	No	Yes	Yes
Office x State FE	No	No	No	Yes	No	No	No	Yes

This table uses the data sources described in Table A.12 to estimate the following equations:

$$\text{Y}_{s,o,t} = \alpha_0 + \alpha_1 \text{Reps Per Million}_s + \alpha_2 \text{Reps Per Million}_s \times \text{Pandemic}_t + \alpha_3 \text{Pandemic}_t + \epsilon_{s,o,t}$$

$$\text{Y}_{s,o,t} = \alpha_s + \alpha_t + \alpha_s \times \alpha_o + \rho \text{Reps Per Million}_s \times \text{Pandemic}_t + \gamma_t \text{Normal Vote}_{s,o,t} \times \text{Year}_t + \epsilon_{s,o,t}$$

Where $\text{Reps Per Million}_s$ is the number of representatives and senators per million residents in 2020. Pandemic_t is an indicator that takes a value of 1 in 2020, 2021, and 2022 and a value of 0 in earlier years. $\text{Y}_{s,o,t}$ is a vector of state-level outcomes. In this table, in Columns 1-4, $\text{Y}_{s,o,t}$ is the change in the logged incumbent party's total receipts between the election in year y and the most recent election (that occurred in the same presidential election cycle) in state s. In Columns 5-8, $\text{Y}_{s,o,t}$ is the change in the logged challenger's party's total receipts between the election in year y and the most recent election (that occurred in the same presidential election cycle) in state s. Standard errors are clustered by state. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

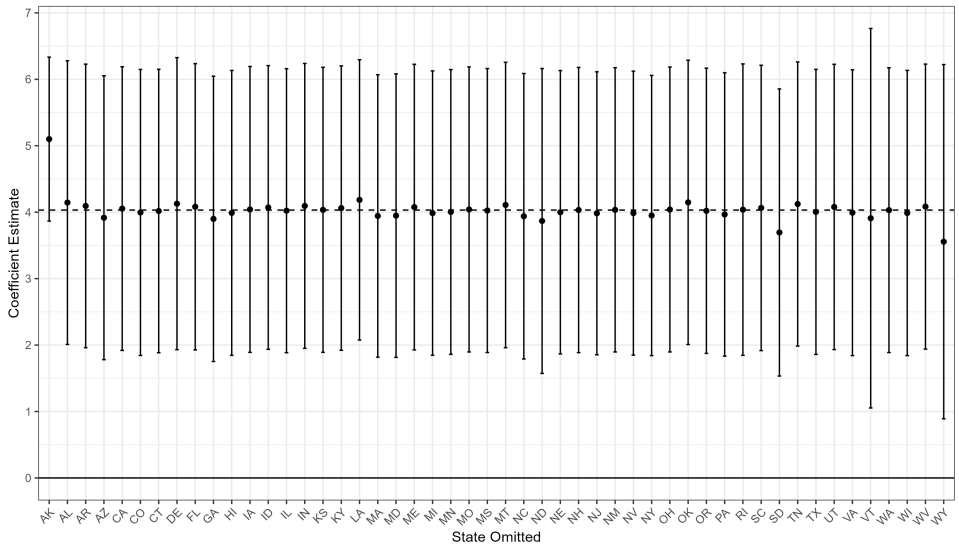
Table A.14: Counterfactual Election Flips

Year	State	Office	Winning Party	Winner	Counterfactual Winner
2020	AK	Senate	Rep	Dan Sullivan	Al Gross
2022	AK	Senate	Rep	Lisa Murkowski	Kelly Tshibaka
2020	ME	Senate	Rep	Susan Collins	Sara Gideon
2022	NV	Senate	Dem	Catherine Cortez Masto	Adam Laxalt
2022	WI	Senate	Rep	Ron Johnson	Mandela Barnes
2022	KS	Governor	Dem	Laura Kelly	Derek Schmidt
2022	ME	Governor	Dem	Janet Mills	Paul LePage
2022	NH	Governor	Rep	Chris Sununu	Tom Sherman
2022	NM	Governor	Dem	Michelle Lujan Grisham	Mark Ronchetti
2022	OR	Governor	Dem	Tina Kotek	Christine Drazan
2022	RI	Governor	Dem	Daniel McKee	Ashley Kalus
2022	WI	Governor	Dem	Tony Evers	Tim Michels

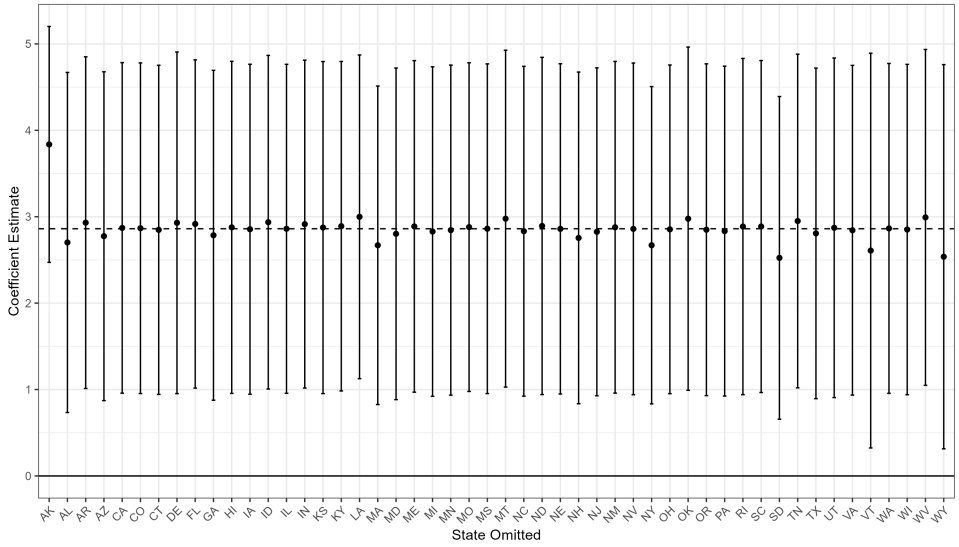
This table presents the set of elections that result in different outcomes under a counterfactual in which we apply the coefficients estimated in columns 4 and 8 of table A.5.

Figure A.1: Baseline 2SLS Estimates Sensitivity to State Omission

Panel A: Without Normal Vote Control

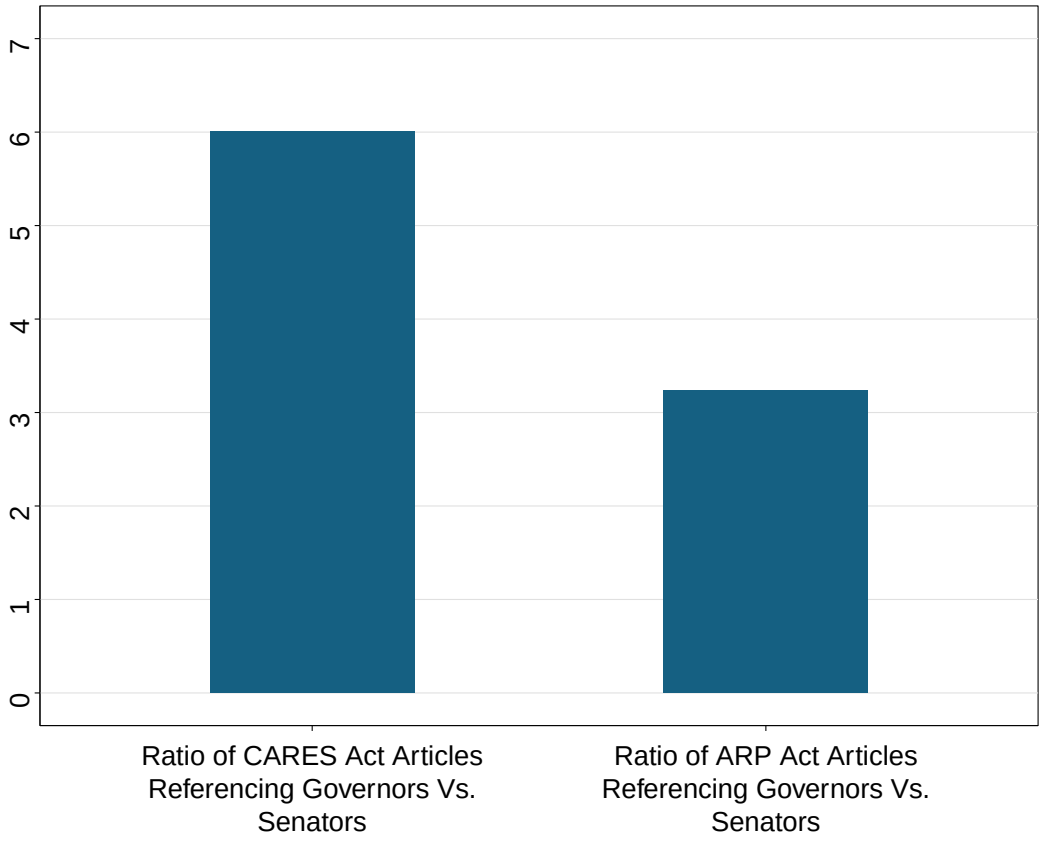


Panel B: With Normal Vote Control



This figure illustrates the sensitivity of our baseline 2SLS estimates (reported in Table 1) to the exclusion of individual states from the sample. Panel A shows the sensitivity without the normal vote control, while Panel B includes the normal vote control. The horizontal dashed line represents the 2SLS estimate using the full sample. Each point on the plot corresponds to a 2SLS estimate recalculated after omitting the state indicated on the x-axis. For instance, the point associated with Florida (FL) shows the 2SLS estimate when Florida's elections are excluded. As depicted in the figures, the recalculated estimates remain close to our baseline 2SLS estimate, indicating that our results are robust to the omission of any single state.

Figure A.2: Ratios of Article Counts: Governors vs. Senators



This figure presents ratios of counts of articles from the Access World News database. The underlying article counts are of articles that appeared in North American newspapers. We counted articles from 2020 that reference CARES Act and articles from 2021 or 2022 that reference the American Rescue Plan Act. We then calculated the ratios of articles referencing the CARES Act or American Rescue Plan Act that also referenced governors to those that also reference senators.