Covid-19 and Preferences for Progressive Taxation: Evidence from a 2020 U.S. Ballot Proposal

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A large political economy literature argues that periods of economic hardship can make redistribution more popular with voters. Based on these claims, recent research has investigated whether the Covid-19 pandemic shocked voters' policy preferences. The results in these studies are inconsistent and based on hypothetical policy proposals. By contrast, in this note, I investigate the relationship between the pandemic and support for progressive taxation using a real world case of revealed voter preferences: a 2020 Illinois ballot proposal to move from a flat to a graduated income tax system. Combining zip code-level health and economic data with local results from the referendum, I find that various indicators of pandemic-related economic burdens are not meaningfully associated with a higher vote share in favour of the progressive tax proposal. Supplementary analyses using a national panel of voters in 2016 and 2020 similarly reveals no association between personal hardships early in the pandemic and support for progressive taxation.

Keywords: redistribution; economic voting; policy preferences; Covid-19

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Introduction

Rising inequality in the United States and other Western countries has fuelled calls in recent years for greater tax progressivity (e.g. Piketty, 2013; Saez and Zucman, 2019). Popular discourse portrayed the Covid-19 pandemic as a potential catalyst for this type of tax reform (e.g. Bukowski and Paczos, 2020). Lockdowns, unpaid sick time, unexpected healthcare costs, and deaths due to the virus caused economic hardship for many households, especially those that were already economically marginalized, while the wealthy increased their wealth share during this period (Chancel et al., 2021).

A large literature on redistributive policy preferences suggests that voters who saw a decline in their income due to the pandemic should become more supportive of higher taxes on the rich (e.g. Margalit, 2019; Meltzer and Richard, 1981). This shift in preferences can be motivated by concerns about fairness or about one's own material well-being (Alesina and Angeletos, 2005; Cavaille, 2023; Fisman et al., 2015). Voters may update their policy positions due to changes in their own fortunes or based on the experiences of those close to them.

Evidence for these arguments in the case of Covid-19 is mixed. Cross-sectional survey data show a positive relationship between exposure to the pandemic and support for redistribution (e.g. Klemm and Mauro, 2022; Rees-Jones et al., 2022). Longitudinal and experimental studies have produced mixed evidence, mostly finding that voters did not meaningfully update their redistributive policy preferences (e.g. Alvarado et al., 2025; Ares et al., 2021; Bellani et al., 2023; Blumenau et al., 2024; Cappelen et al., 2021; De Vries et al., 2023; Jurado and Kuo, 2023). This nascent body of research has tended to focus on hypothetical policy options, using self-reported support for proposals like "short term increases in income taxes on high income earners."

By contrast, in this research note, I study the relationship between the Covid-19 burden and support for progressive taxation in a real world case of voters' revealed preferences.

Using local results from an Illinois tax referendum in November 2020, I find that areas that were especially impacted by the pandemic were no more likely to support a more progressive tax system.

The Covid-19 Economic Shock and Redistributive Preferences

Early in the Covid-19 pandemic, many voters − especially those that were already economically marginalized − experienced economic hardship as a result of lost employment and earnings, lockdowns, and illness (Adams-Prassl et al., 2020). The wealthy were largely insulated from these challenges and by some accounts even increased their wealth share during this period (Chancel et al., 2021). These sudden, widespread and heterogeneous economic impacts were viewed by some as presenting an opportune moment to pursue redistributive reforms (e.g. Bukowski and Paczos, 2020).

There are two main mechanisms by which the economic shock of the pandemic might have shifted mass support for such initiatives. Theoretically, a median voter model predicts that a decline in the income of poorer voters will lead to an increase in their demand for taxes on the rich as a way to improve their own well-being (Meltzer and Richard, 1981). An empirical literature on self-interested or "pocketbook" voting lends support to these predictions, finding that voters who experience economic loss often become more supportive of redistributive policies that are likely to benefit themselves (Fisman et al., 2015; Hacker et al., 2013; Margalit, 2013; Naumann et al., 2016; Owens and Pedulla, 2014). Voters may therefore have come to see higher taxes on the rich − and presumed increases in social spending or pandemic income supports − as a way to recover lost income due to the pandemic.

The pandemic may also have triggered concerns about fairness and deservingness. Prior research finds that preferences for redistribution are shaped by beliefs about how much control individuals have over their economic outcomes (Alesina and Angeletos, 2005; Cavaille, 2023; Fong, 2001; Hope et al., 2023; Petersen et al., 2011; Stantcheva, 2020). Support for progressive taxation tends to be higher when people understand differences in wealth as

exogenous to one's own merit or effort. When negative shocks outside the control of poorer voters result in income losses, taxes on the rich can be seen as a "fair" way to provide compensation and acknowledge the wealthy's greater ability to contribute (Alvarado, 2024; Barr et al., 2016; Scheve and Stasavage, 2010, 2016). Limberg (2020), for example, shows that the 2008 financial crisis led to increased support for progressive taxation in countries most negatively impacted by the shock, which is driven in large part by a strengthening of the relationship between fairness beliefs and higher support for taxes on the rich. The exogenous and disparate shock of the pandemic may have similarly shifted perceptions of fairness, with downstream effects on tax preferences.

These material and fairness considerations can be triggered not just by one's own personal experiences, but also those of family members, friends and the local community. Partly this is because the fate of one's second-degree connections can cause people to update on their own risk of negative economic outcomes (Margalit, 2013). For these voters, redistributive policy becomes more appealing as a way to insure oneself against future losses already experienced by those close to them (Iversen and Soskice, 2001; Rehm, 2009). Local conditions may also inform a voter's sense of social solidarity, encouraging feelings of empathy or compassion for others who have experienced hardship (Cappelen et al., 2021; Kessler and Milkman, 2018). For these reasons, voters living in areas that saw a large number of Covid-19 cases or a negative economic shock due to the pandemic may have increased their support for progressive taxation even if they themselves did not experience loss.

Nonetheless, Margalit (2019) notes that the attitudinal effects of negative economic shocks (a) are often transient (Margalit, 2013; although see Naumann et al., 2016) and (b) do not always translate into consistent changes in voting behaviour. In the next section, I explain how the results of a referendum in Illinois can help shed light on whether the Covid-19 pandemic did in fact alter voter preferences.

Case and Empirical Strategy

The 1970 Illinois Constitution explicitly prohibits the state from setting graduated tax rates based on income. In 2018, Democratic gubernatorial candidate J.B. Pritzker campaigned and won on a promise to replace this "flat" tax system with a more progressive scheme. His proposal, put to voters in a 2020 referendum, would have seen those earning below $250,000 continue paying the existing flat rate of 4.95%, or slightly less, while earnings above that figure would be taxed at 7.75% or greater.

To investigate the relationship between the Covid-19 burden and support for this progressive tax proposal, I use data from the Illinois Department of Public Health on the number of Covid-19 cases and deaths that occurred in each zip code before mail-in ballots were sent to voters. As alternative indicators of the pandemic burden, I also calculate the percentage change in employment and earnings in each zip code between the week before Illinois first issued a stay-at-home order in 2020 and the same week in 2021.[1] I then merge the case count and employment change data with demographic controls from the 2019 American Community Survey and precinct-level returns from the 2018 and 2020 elections using a geographic weighting scheme.

I use OLS to regress the proportion of votes in favour of the tax proposal in each zip code separately on each of the indicators of pandemic burden described in the previous paragraph. I control for a number of potential confounders (see notes to Table 1) to account for the fact that areas with, for example, more Democratic voters, racialized residents, and people with lower incomes are both more likely to experience Covid-19 cases and support the tax initiative. A set of county fixed effects helps address region-specific sources of confounding.[2]

[1]Ideally, I would compare economic changes between the onset of the pandemic and the referendum, but the Census Bureau only collects this data annually in March. See Appendix D for a validation of this approach using county-level data.

[2]In Appendices J and K, I re-run these models at the county-level and using spatially-lagged regression models, finding little evidence of spillover across zip codes or effects at

Results

Table 1 presents the estimates. In the first model, focusing on case counts, the relationship is precisely estimated but substantively small: each additional case per 1,000 residents is associated with 0.025 percentage points (p.p.) higher vote share for the tax proposal. Put differently, a one-standard deviation increase in the case count variable (i.e. 12 more cases per 1,000) correlates with just an 0.3 p.p. increase in support. In the referendum, 46.7% of voters supported the tax reform. According to these estimates, Covid-19 cases would have had to be more than *six times* greater than they actually were for support to have increased above 50%.

Perhaps deaths caused by Covid-19, rather than infections, were the type of shock that would increase support for progressive taxation. Mortality statistics were never released at the zip code level, except in Chicago. Restricting my focus to the zip codes in that city, I show in the second column of Table 1 that the relationship between Covid-19 deaths and support for progressive taxation is indeed stronger than for Covid-19 infections (although the estimate here is noisier given the smaller number of zip codes in Chicago). Yet the correlation is still substantively small: each additional death per 1,000 is associated with just one additional p.p. in favour of the tax proposal. For reference, this would be equivalent to the change from a neighbourhood that had zero deaths before the election to the median neighbourhood on this metric.

While Covid-19 cases and deaths do impose financial costs on voters, it is also possible to investigate the pandemic's economic burdens more directly. In the third and fourth columns of Table 1, I report estimates for the association between support for the tax proposal and the percent loss in employment and earnings during the pandemic. For both of these variables, the estimated relationship is essentially zero and inconsistently signed. Even a full standard deviation increase in employment losses (roughly 18 p.p.) correlates with less than 0.1 p.p.

higher-level geographies.

Table 1: Zip code-level relationships between the Covid-19 burden and support for progressive taxation

	% supporting progressive taxation (measured from 0 to 100)				
	(1)	(2)	(3)	(4)	(5)
Covid-19 cases per 1,000	0.025*				
	(0.012)				
Covid-19 deaths per 1,000		1.158			
		(0.604)			
Percent loss in employment			0.0003		
			(0.004)		
Percent loss in earnings				−0.007*	
				(0.004)	
Stricter lockdown					−1.008
					(0.650)
Sample	All of Illinois	City of Chicago	All of Illinois	All of Illinois	Lockdown Borders
Observations	1,351	58	1,270	1,270	97
R^2	0.977	0.984	0.979	0.979	0.970
Controls	Yes	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes	No

Robust standard errors in parentheses. Models include the following covariates: log population, population density, 2018 Democrat gubernatorial vote share, median household income, Gini coefficient, and the share of the population that is: under 18, over 65, Black, Hispanic, living in poverty, holding a bachelor's degree, as well as the percent working in the following industries: education, healthcare and social assistance; leisure and hospitality; government. County FE are not reported in models 2 and 5 because (a) Chicago exists within a single county and (b) lockdown restrictions are constant within counties. Model 5 contains border segment fixed effects. *p<0.05

greater vote share for the tax reform. The coefficient on the earnings losses variable suggests that economic harms were actually associated with decreased support in the referendum, but this estimate is negligible in magnitude.

These null results are corroborated by a test of the impact of public health restrictions. Until Illinois began reopening in the summer, a statewide lockdown was in effect. After that point, two public health regions were later placed under an additional 2 to 3 weeks of restrictions because of resurgent infection rates. To assess the impact of the longer closures in these regions, I restrict the sample to all zip codes on the border between health regions that did and did not come under the additional restrictions. Zip codes that fall on either side of these borders look very similar on average, including their number of Covid-19 cases, which helps to isolate the specific impact of the restrictions (see Appendix F for balance tests). In the final column of Table 1, I show that areas that were burdened by an extra 2 to 3 weeks of lockdowns were actually one p.p. less likely to vote in favour of progressive taxation, although this effect is not statistically significant.

Direct exposure

The evidence in Table 1 reveals no consistent, meaningful relationship between pandemic-related hardships and support for progressive taxation. However, the aggregate electoral data may be obscuring the fact that only those who were personally affected by the pandemic updated their positions on tax policy. To investigate this possibility, I use survey data from a panel of respondents to the 2016 and 2020 American National Election Studies (ANES). In both of these years, respondents were asked whether they support "increasing income taxes on people making over one million dollars per year." In 2016, 68 percent of respondents supported this proposal, compared with 64 percent four years later. In 2020, respondents also indicated whether they, or someone in their household, contracted Covid-19.[3] While the

[3]This is an imperfect proxy for actual health impacts. In Appendix P.1, I find that Covid-19 exposure did not have noticeably differential impacts among those who reported better

Table 2: First differences in support for progressive taxation in the ANES

	△ Support Millionaires Tax (0/1)			
Covid-19 infection (0/1)	−0.015			−0.016
	(0.028)			(0.028)
△ Worried about finances (z-score)		0.010		0.010
		(0.010)		(0.010)
△ Currently working (0/1)			0.003	0.006
			(0.021)	(0.021)
Observations	2,625	2,632	2,633	2,616
R^2	<0.001	<0.001	<0.001	0.001

Robust standard errors in parentheses. *p<0.05

2020 ANES does not contain indicators for economic hardship caused *by* the pandemic, there are items in both survey years capturing respondents' worry about their financial situation and whether they were currently working.

Using a first-differences model, I regress the change in a respondent's support for a millionaires tax between 2020 and 2016 on an dummy for whether they contracted Covid-19 in 2020 and the changes in their level of financial worry and working status over the same period. This design controls for all time-invariant, respondent-specific characteristics and election-specific trends in support for progressive taxation.

Table 2 presents the results. Across the three measures of hardship, none of the coefficients are statistically or substantively significant. Those who contracted Covid-19 in 2020 became around 1.5 p.p. less likely to support a millionaires tax relative to those who were not infected. Those who became more worried about their personal financial situation, or who lost a job, between 2016 and 2020 were no more likely to increase their support for progressive taxation.

versus worse health conditions at the time of the survey.

Alternative explanations

The preceding analyses have focused on average associations. But if Democrats exposed to Covid-19's effects updated positively on the need for progressive taxation, while Republicans more stridently opposed this policy, the null results may be driven by countervailing reactions (Gadarian et al., 2021). I evaluate this hypothesis by interacting each measure of the Covid-19 burden with the Democratic vote share in each zip code during the 2018 gubernatorial election. The results, summarized in Appendix G, show that the strength of the relationship between Covid-19 exposure and support for the tax is fairly homogeneous and substantively small across values of prior partisanship. Similarly, there is no strong evidence of polarized responses by partisanship in the ANES panel data.

It may also be that the health and economic burdens of the pandemic disproportionately depressed turnout among voters who would have otherwise supported the tax proposal (Johnson et al., 2020). In Appendix L, I re-estimate my main models with referendum turnout as the outcome. The estimated relationships are negative, but substantively very small and statistically insignificant.

Finally, the progressive tax proposal was proposed by Illinois' governor, J.B. Pritzker. The null results could have arisen because areas most negatively affected by the pandemic saw an increase in anti-incumbent anger, which led voters to reject the proposal, thus canceling out any positive shift in support due to economic hardship. However, in Appendix M, I find that none of the indicators of pandemic severity from Table 1 predict changes in electoral support for Governor Pritzker before and after the pandemic. Indeed, voter evaluations of Pritzker's pandemic management were around the median among U.S. governors (see Appendix N), making Illinois an unlikely setting to observe the kind of anti-incumbent sentiment that could have impacted voting behaviour.

Yet, coincidentally, Arizona also held a referendum on a progressive tax proposal in 2020 and their governor took a vocal stance on the issue. In contrast to Illinois, Arizona's governor had among the worst performance ratings in the country during the pandemic. In Appendix

O, I use the same empirical strategy as in Illinois to re-run my analysis on that state's voting returns. If referendum voting was driven primarily by dissatisfaction with the governor, we should observe a strong relationship between the Covid-19 burden and support for the tax scheme. However, a similar pattern emerges: there is no meaningful association between pandemic-related hardship and support for progressive tax reform in Arizona.

Discussion

Taken together, the results presented here do not suggest that Covid-19-related hardships were associated with increased support for progressive taxation. Where such an association exists, it is substantively very small. The lack of a relationship is all the more surprising because the pandemic's toll on Illinois was not insignificant. It saw one of the longest stay-at-home orders in the country and by the time of the referendum, the economy had contracted by 4.5 percent compared to the pre-pandemic period, which was the 8$^{\text{th}}$ largest decline of any state (see Appendix B).

Why then did this massive shock to voter welfare not coincide with a shift in support for higher taxes on the rich? It could be that voters viewed the pandemic as temporary or "exceptional," and thus irrelevant to longer-term redistribution policy (De Vries et al., 2023). Another explanation is that opinions on progressive taxation are highly politicized and resistant to updating. In the referendum data, the correlation between support for the tax proposal and 2018 Democratic gubernatorial vote share is 0.96. In the ANES, less than one-third of voters changed their opinion on a millionaires tax between 2016 and 2020. When policy positions are so deeply entrenched, or crises are seen as ephemeral, even major economic disruptions may be insufficient to alter voter preferences.

References

Adams-Prassl, A., Boneva, T., Golin, M., & Rauh, C. (2020). Inequality in the impact of the coronavirus shock: Evidence from real time surveys. *Journal of Public Economics*, *189*.

Alesina, A., & Angeletos, G.-M. (2005). Fairness and redistribution. *American Economic Review*, *95*(4), 960–980.

Alvarado, M. (2024). Compensation and Tax Fairness: Evidence From Four Countries. *British Journal of Political Science*, *54*(4), 1023–1042.

Alvarado, M., Querubin, P., Scheve, K., & Stasavage, D. (2025). Testing the Compensatory Theory: A Survey Experiment on Covid-19 and Redistributive Preferences in the UK. *The Journal of Politics*, 736111.

Ares, M., Bürgisser, R., & Häusermann, S. (2021). Attitudinal polarization towards the redistributive role of the state in the wake of the COVID-19 crisis. *Journal of Elections, Public Opinion and Parties*, *31*(sup1), 41–55.

Barr, A., Miller, L., & Ubeda, P. (2016). Moral consequences of becoming unemployed. *Proceedings of the National Academy of Sciences*, *113*(17), 4676–4681.

Bellani, L., Fazio, A., & Scervini, F. (2023). Collective negative shocks and preferences for redistribution: Evidence from the COVID-19 crisis in Germany. *The Journal of Economic Inequality*, *21*(2), 381–403.

Blumenau, J., Hicks, T., Jacobs, A., Matthews, S., & O'Grady, T. (2024). Testing negative: The non-consequences of covid-19 on mass ideology. *Journal of Politics*.

Bukowski, P., & Paczos, W. (2020, July). We need more progressive taxation, and a wealth tax, to pay for the COVID-19 rescue packages. https://blogs.lse.ac.uk/covid19/2020/07/07/we-need-progressive-taxation-and-a-wealth-tax-to-pay-for-the-covid-19-rescue-packages/

Cappelen, A. W., Falch, R., Sørensen, E. Ø., & Tungodden, B. (2021). Solidarity and fairness in times of crisis. *Journal of Economic Behavior & Organization*, *186*, 1–11.

Cavaille, C. (2023). *Fair enough? Support for redistribution in the age of inequality*. Cambridge University Press.

Chancel, L., Piketty, T., Saez, E., & Zucman, G. (2021). *World Inequality Report 2022* (tech. rep.). World Inequality Lab.

De Vries, R., Geiger, B. B., Scullion, L., Summers, K., Edmiston, D., Ingold, J., Robertshaw, D., & Young, D. (2023). Welfare attitudes in a crisis: How COVID exceptionalism undermined greater solidarity. *Journal of Social Policy*, 1–20.

Fisman, R., Jakiela, P., & Kariv, S. (2015). How did distributional preferences change during the great recession? *Journal of Public Economics*, *128*, 84–95.

Fong, C. (2001). Social preferences, self-interest, and the demand for redistribution. *Journal of Public Economics*, *82*(2), 225–246.

Gadarian, S. K., Goodman, S. W., & Pepinsky, T. B. (2021). Partisanship, health behavior, and policy attitudes in the early stages of the COVID-19 pandemic. *PLOS ONE*, *16*(4).

Hacker, J. S., Rehm, P., & Schlesinger, M. (2013). The insecure American: Economic experiences, financial worries, and policy attitudes. *Perspectives on Politics*, *11*(1), 23–49.

Hope, D., Limberg, J., & Weber, N. (2023). Why do (some) ordinary Americans support tax cuts for the rich? Evidence from a randomised survey experiment. *European Journal of Political Economy*, *78*, 102349.

Iversen, T., & Soskice, D. (2001). An asset theory of social policy preferences. *American Political Science Review*, *95*(4), 875–893.

Johnson, A. F., Pollock, W., & Rauhaus, B. (2020). Mass casualty event scenarios and political shifts: 2020 election outcomes and the U.S. COVID-19 pandemic. *Administrative Theory & Praxis*, *42*(2), 249–264.

Jurado, I., & Kuo, A. (2023). Economic Shocks and Fiscal Policy Preferences: Evidence From COVID-19 in Spain. *Political Research Quarterly*, *76*(4), 1573–1588.

Kessler, J. B., & Milkman, K. L. (2018). Identity in Charitable Giving. *Management Science*, *64*(2), 845–859.

Klemm, A., & Mauro, P. (2022). Pandemic and progressivity [Publisher: Springer]. *International tax and public finance*, *29*(2), 505–535.

Limberg, J. (2020). What's fair? Preferences for tax progressivity in the wake of the financial crisis. *Journal of public policy*, *40*(2), 171–193.

Margalit, Y. (2013). Explaining social policy preferences: Evidence from the Great Recession. *American Political Science Review*, *107*(1), 80–103.

Margalit, Y. (2019). Political Responses to Economic Shocks. *Annual Review of Political Science*, *22*(Volume 22, 2019), 277–295.

Meltzer, A. H., & Richard, S. F. (1981). A rational theory of the size of government. *Journal of political Economy*, *89*(5), 914–927.

Naumann, E., Buss, C., & Bähr, J. (2016). How unemployment experience affects support for the welfare state: A real panel approach. *European Sociological Review*, *32*(1), 81–92.

Owens, L. A., & Pedulla, D. S. (2014). Material Welfare and Changing Political Preferences: The Case of Support for Redistributive Social Policies. *Social Forces*, *92*(3), 1087–1113.

Petersen, M. B., Slothuus, R., Stubager, R., & Togeby, L. (2011). Deservingness versus values in public opinion on welfare: The automaticity of the deservingness heuristic: Deservingness versus values in public opinion on welfare. *European Journal of Political Research*, *50*(1), 24–52.

Piketty, T. (2013). *Capital in the Twenty-First Century*. Harvard University Press.

Rees-Jones, A., D'Attoma, J., Piolatto, A., & Salvadori, L. (2022). Experience of the COVID-19 Pandemic and Support for Safety-Net Expansion. *Journal of Economic Behavior and Organization*, *200*, 1090–1104.

Rehm, P. (2009). Risks and Redistribution: An Individual-Level Analysis. *Comparative Political Studies*, *42*(7), 855–881.

Saez, E., & Zucman, G. (2019). *The Triumph of Injustice: How the Rich Dodge Taxes and How to Make Them Pay*. W. W. Norton & Company.

Scheve, K., & Stasavage, D. (2010). The conscription of wealth: Mass warfare and the demand for progressive taxation. *International Organization*, *64*(4), 529–561.

Scheve, K., & Stasavage, D. (2016). *Taxing the Rich: A History of Fiscal Fairness in the United States and Europe*. Princeton University Press.

Stantcheva, S. (2020, August). Understanding Tax Policy: How Do People Reason? https://www.nber.org/papers/w27699

Appendix

Contents

A Full details of proposed tax rates

At the time of the referendum, all Illinoisans paid an income tax rate of 4.95%. In anticipation of the referendum succeeding, state lawmakers passed a revised schedule in Senate Bill 687 that would implement the proposed progressive tax system. The exact marginal tax rates in that bill were as follows:

1. Single-filers:
    - \$0−\$10,000: 4.75%
    - \$10,001−\$100,000: 4.90%
    - \$100,001−\$250,000: 4.95%
    - \$250,001−\$350,000: 7.75%
    - \$350,001−\$750,000: 7.85%
    - \$750,001 and above: 7.95% on net income
2. Joint-filers:
    - \$0−\$10,000: 4.75%
    - \$10,001−\$100,000: 4.90%
    - \$100,001−\$250,000: 4.95%
    - \$250,001−\$500,000: 7.75%
    - \$500,001−\$1,000,000: 7.85%
    - \$1,000,001 and above: 7.95% on net income

B Illinois case context

Within the broader context of American states, Illinois is a case where a priori we would expect to find a relationship between the Covid-19 pandemic and support for progressive taxation. For one, the pandemic hit the state especially hard and the state government responded forcefully. Illinois, along with New Jersey, was the second state in the country to enact a stay-at-home order and one of the last states to lift it. The top panel of Figure A1 shows that Illinois saw more Covid-19 cases and deaths per 1,000 residents than most other states before the 2020 election; it ranked 16$^{\text{th}}$ and 9$^{\text{th}}$ worst in the country on these metrics,

respectively. In terms of total cases (unadjusted for population), Illinois saw the 4th worst case burden in the United States.

The pandemic also had a major negative impact on the economy. As the bottom panel in Figure A1 shows, Illinois's real GDP contracted by 4.5 percent between the last quarter of 2019 (before the pandemic began) and the third quarter of 2020 (before the election). This decline was 8th worst among all states. Illinois was also nearly in the 75th percentile among states in terms of year-over-year employment losses in the months leading up to the election (based on data in Appendix D). Overall, then, this is a context where the negative impacts of the pandemic would have been particularly salient to voters.

At the same time, Illinois is also a state with relatively low levels of partisan polarization, which could reduce frictions to voters updating their policy preferences. To illustrate this, I calculated affective polarization scores for each respondent in the 2020 ANES using feeling thermometers toward the Democratic and Republican parties that range from 0 to 100. I subtracted the out-party value from the in-party value for each respondent and excluded true Independents from the analysis. Figure A2 summarizes the average affective polarization score within each state in 2020. Although there is not a significant amount of variation across states on this measure, Illinois falls on the less-polarized end of the spectrum. Its score is 4 points below the national average, making it the 43rd most polarized state in the country. Holliday et al. (2024) report similar results for Illinois using a larger sample. Shor and McCarty (2022) also find that Illinois' state legislators are comparatively less polarized than those in other states, which means that elite messaging around the referendum might have been less partisan than it would have been elsewhere. Taken together, the combined impact of the pandemic in Illinois plus the low levels of baseline polarization suggest that this case is not an especially "hard test" for observing a relationship between pandemic-related hardships and support for progressive taxation.

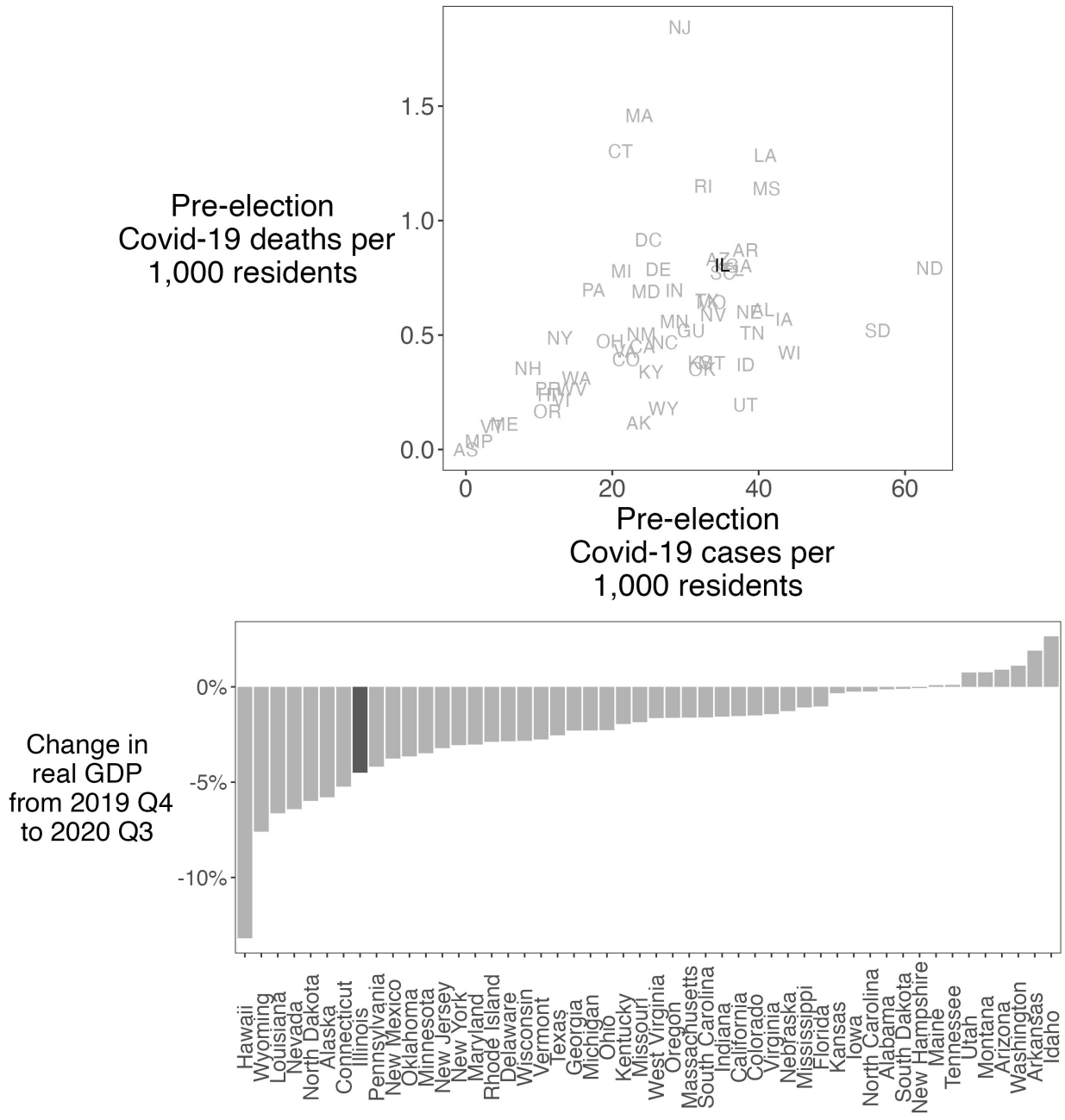

Figure A1: Illinois pandemic burden among American states

Upper panel presents the cumulative number of Covid-19 cases and deaths observed in each state as of November 4, 2020 (Source: CDC). Lower panel reports the percent change in real GDP (2017 dollars) for each state between 2019 Q4 and 2020 Q3 (Source: Bureau of Economic Analysis).

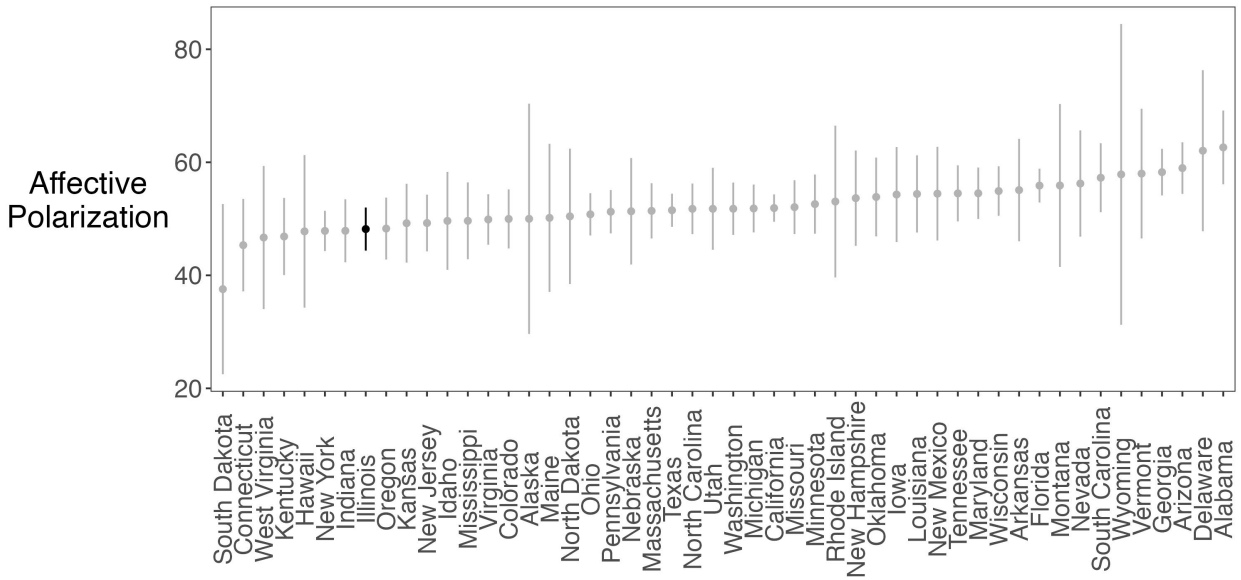

Figure A2: Illinois voter polarization among American states

Plot reports the mean and 95% confidence interval for the mean affective polarization score in each state in the 2020 ANES.

C Data on Covid-19 cases in Illinois

I pull data on the number of Covid-19 cases per zip code from the Illinois Department of Public Health. Because of the public health risks associated with in-person voting, the majority (59.5%) of voters cast their ballots before Election Day in 2020. To account for this, I only record cases that occurred before September 24, when early voting options were first made available to voters. If the IDPH reports no cases for a zip code before this date, I assign 2.5 cases, the midpoint between 0 and 5 (the minimum threshold at which cases are reported at the zip code-level).

Table A1 investigates sensitivity to the choice of cut-off date for counting Covid-19 cases. The first column reports the results from the main text, while the second column is based on cases reported before Election Day. The relationship is weaker when using the measure that includes cases occurring after mail-in-ballots were distributed to voters.

Table A1: Alternative Covid-19 case count dates

	% supporting progressive taxation (measured from 0 to 100)	
	(1)	(2)
Covid-19 cases before mail-in voting begins	0.025*	
	(0.012)	
Covid-19 cases before Election Day		0.012
		(0.008)
Observations	1,351	1,351
R^2	0.977	0.977
Controls	Yes	Yes
County FE	Yes	Yes

Robust standard errors in parentheses. Models includes the following covariates: log population, population density, 2018 Democrat gubernatorial vote share, median household income, Gini coefficient, and the share of the population that is: under 18, over 65, Black, Hispanic, living in poverty, holding a bachelor's degree, as well as the percent working in the following industries: education, healthcare and social assistance; leisure and hospitality; government. *p<0.05

D Data on economic loss

Data on economic changes come from the Census Bureau's County Business Patterns data files. These data correspond to prevailing conditions in all businesses within a zip code on the week of March 12 each year. In 2020, Illinois did not issue a stay-at-home order until March 21, so I treat the 2020 data as the pre-pandemic reference point and calculate percent changes in employment levels and payroll versus 2021. Ideally, I would compare economic changes between the onset of the pandemic and the referendum itself, but since this data is only available for March of each year, my analyses assume that the distribution of economic impacts in the first wave roughly correlates with those in the second wave, which peaked after Election Day.

To validate this assumption, I use monthly employment data at the county level from

the US Bureau of Labor Statistics' Quarterly Census of Employment and Wages. I calculate the average year-over-year change in employment levels for each Illinois county separately for the periods between March and September 2020 (i.e. pre-election) and October 2020 and February 2021 (i.e. post-election). As Figure A3 shows, economic losses in these two periods are closely related. The correlation between these two variables is 0.72 and the association is roughly linear (even when excluding outlier counties with extreme losses). These results provide confidence that the full-year measure used at the zip code level is a sufficient proxy for the negative economic impacts in the period before the referendum.

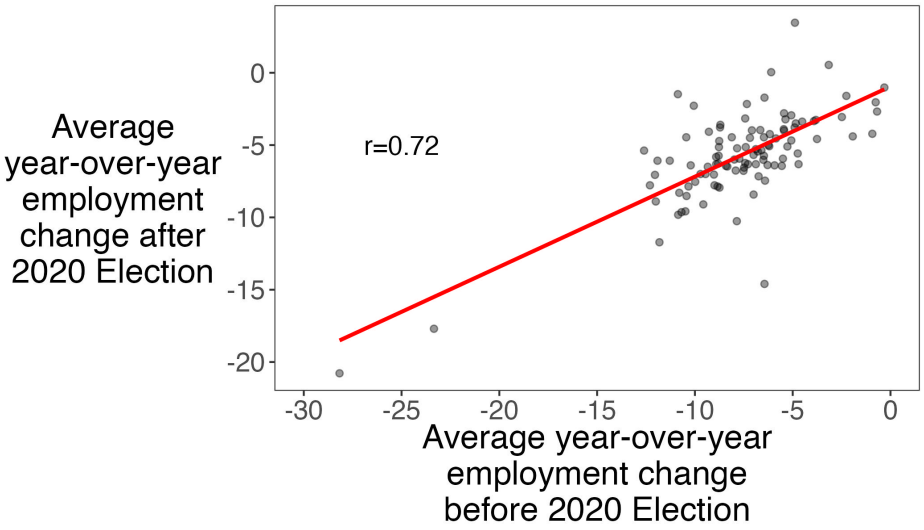

Figure A3: Average year-over-year employment changes by county during the pre-referendum pandemic period and the post-referendum period

Plot reports the average year-over-year change in employment levels for each county in Illinois during the periods between March and September 2020 (x-axis) and October 2020 and February 2021 (y-axis).

E Details on matching precinct-level election results to zip codes

To link precinct-level returns to the zip code-level data on Covid-19 burdens, I assign votes to each zip code using a geographic weighting scheme. The process is as follows:

1. Precinct boundaries are split along zip code boundary lines using the GIS "Union" function. For example, a precinct that is intersected by one zip code boundary would

be transformed into two precinct "pieces."

2. I calculate the spatially-weighted number of voters in each precinct piece that voted in favour of a particular candidate or referendum outcome. The specific formula for this is:

$$\left[\frac{\text{Area of precinct piece}}{\text{Area of total precinct}}\right] \times \left(\text{Number of votes cast in precinct}\right)$$

   For example, if the "Yes" option received 100 votes in a precinct, and that precinct was split perfectly equally in two by a zip code boundary line, then the weighted number of "Yes" votes in each precinct piece would be 50.

3. I calculate the total votes cast for a particular candidate or option in a zip code by summing over the spatially-weighted vote totals for each precinct piece within that zip code. For example, if zip code Z contained 50% of Precinct A and 25% of Precinct B, then the total votes cast would be 50% of the votes in A plus 25% of the votes in B.

F Lockdowns test

To test for the effect of public health restrictions on support for the tax proposal, I leverage Illinois' regional approach to reopening after the pandemic's first wave. While initially the entire state was placed under lockdown, Governor Pritzker's reopening plan specified conditions that would trigger mitigation efforts. If a public health region "(a) logged a test positivity rate of 8% or higher for three consecutive days or (b) a sustained a 7-day increase in hospital admissions for a COVID-like illness, or (c) a reduction in hospital capacity threatening surge capabilities (ICU capacity or medical/surgical beds under 20%)," that region would be placed under additional restrictions, including limiting or suspending indoor service at restaurants and bars and limiting gathering sizes.

Before mail-in voting began, two of the state's 11 regions (mostly defined along county lines) were put under these additional restrictions for 14 and 22 days, respectively. These

restrictions went into effect in late August. As Figure A4 shows, further restrictions were also imposed on other regions after mail-in voting began on September 24, but before Election Day. As in my main analysis (see Appendix C), I focus on exposure to pandemic-related hardship before mail-in balloting began because the majority of votes were cast by mail in 2021. That being said, the right panel of Figure A4 shows that the areas that were subjected to additional lockdowns before mail-in balloting began also saw relatively more restrictions compared to neighbouring regions before Election Day as well (52 vs. 0 and 13 days in the southern regions and 35 vs. 5, 6, 12 and 0 days in the northern regions).

To test for the effect of the additional lockdown periods in the two affected regions, I restrict the sample to zip codes falling within 2km of the border between regions that were locked down before mail-in balloting began and those that were not (see Figure A5). Focusing only on these zipcodes improves the similarity between "treated" (locked down) and "control" (not locked down) units. Table A2 reports averages of a number of covariates across each group and tests for significant differences using t-tests. The two groups are very similar on average, with a slightly lower proportion living in poverty in the treated zip codes. Importantly, this design virtually eliminates any average difference in exposure to actual Covid-19 cases across treated and control units, thus helping to isolate the specific effect of the additional lockdown period. If I were to look at all zip codes in public health regions on either side of the border, the number of Covid-19 cases per 1,000 would be 4.1 cases greater on average in treated regions ($p < 0.01$), a relatively large discrepancy given that the standard deviation of this variable is around 12.

The first two columns of Table A3 test whether the lockdowns did in fact result in economic hardship, measured as the percentage change in employment and earnings from March 2020 to March 2021 (see Appendix D). Zip codes that saw additional lockdown restrictions saw 4 and 3 percent lower employment and earnings levels relative to zip codes that look similar but that were not subjected to those restrictions. These estimates are not statistically significant, but the fact that the second time point in these measures is in March

2021 − after the pandemic's second wave and a multitude of other restrictions were enacted − likely increases the noise around the estimates of the first wave lockdowns.

The remaining columns in Table A3 report the effect of the additional lockdowns on the share of voters supporting the progressive tax proposal. The third column reports results without control variables, while the fourth introduces controls to improve statistical efficiency (see table notes). In each case, border segment fixed effects are included to ensure comparisons are made between treated and control units directly opposite each specific border between health regions. Across both specifications, the lockdown lowered support for the tax proposal by just over one p.p., although neither estimate is statistically significant. Finally, as Figure A5 shows, some zip codes straddle the border between health regions. In the final model, I remove these cases and re-run the analysis; the results are nearly identical.

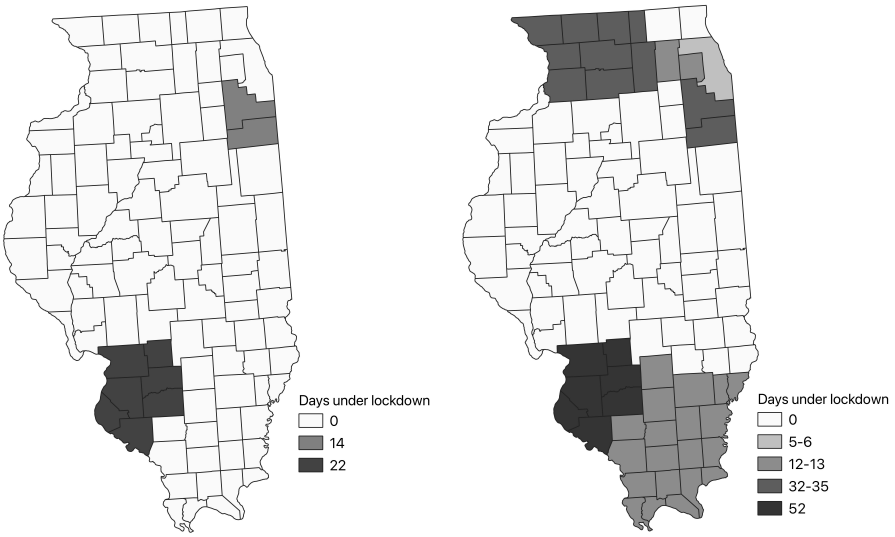

Figure A4: Lockdown restrictions before mail-in voting (left) and Election Day (right)

Plot reports the number of days each county was placed under restrictions (beyond the initial statewide lockdown) before mail-in ballots were distributed on September 24 (left) and Election Day (right).

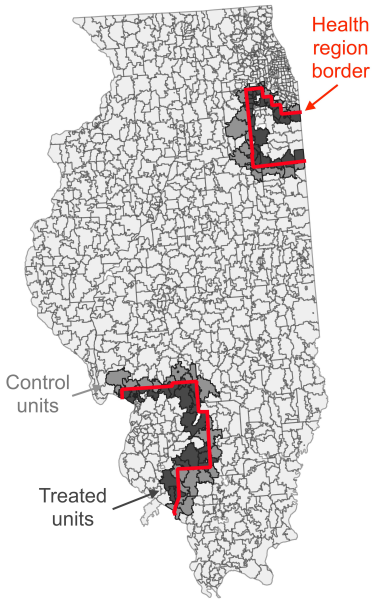

Figure A5: Lockdowns border design

Plot shows outlines (in red) of the two public health regions that came under additional restrictions before voting opened in Illinois. All zip codes within 2km of the border are included in the sample. Determination of treatment status based on whether a zipcode's centroid falls within a public health region that experienced additional lockdowns.

Table A2: Lockdown design balance test

	Additional lockdown?		
	No ("Control")	Yes ("Treated")	t-test p-value
Observations	50	47	
Covid-19 cases per 1,000	16.20	16.75	0.72
Democratic share (2018)	0.42	0.41	0.72
Median HH income	$65,210	$71,793	0.16
Gini coefficient	0.41	0.39	0.20
% Latino	4.88	6.49	0.22
% Black	8.47	8.42	0.99
% in poverty	12.29	9.16	0.04
% working health & education	23.05	23.06	0.99
% working in hospitality	7.29	7.32	0.97
% working in public admin.	4.81	4.53	0.68
% with Bachelor's	13.61	15.79	0.27
% under 18	21.65	23.21	0.15
% over 65	17.49	17.21	0.83
Population density	864.3	643.5	0.36
Population	11,674	11,696	0.99

Table presents the average value of each covariate in the treated and control zip codes. Right-most column reports p-values from t-tests.

Table A3: Lockdowns, economic loss and support for progressive taxation

	Economic losses		% supporting progressive taxation		
	Employment	Earnings	(measured from 0 to 100)		
	(1)	(2)	(3)	(4)	(5)
Stricter lockdown	4.310	3.225	−1.151	−1.008	−1.172
	(5.785)	(3.547)	(2.718)	(0.650)	(0.638)
Observations	95	95	97	97	82
R^2	0.174	0.100	0.265	0.970	0.972
Border segment FE	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	No	Yes	Yes

Robust standard errors in parentheses. Models 1, 2, 4 and 5 include the following covariates: log population, population density, 2018 Democrat gubernatorial vote share, median household income, Gini coefficient, and the share of the population that is: under 18, over 65, Black, Hispanic, living in poverty, holding a bachelor's degree, as well as the percent working in the following industries: education, healthcare and social assistance; leisure and hospitality; government. *p<0.05

G Heterogeneous responses by partisanship

I use interaction models to investigate whether responses to the pandemic differed by prior partisanship. Figure A6 reports the marginal effects of each indicator of Covid-19 exposure across values of the 2018 Democratic gubernatorial vote share at the zip code level (using both a binning and linear estimator; Hainmueller et al., 2018). Overall, the estimates reveal little heterogeneity. In the most generous interpretation, it appears that the relationship between Covid-19 case counts and support for the tax is indeed stronger in areas with a larger share of Democratic voters. According to the binning estimator, each additional case per 1,000 in highly Democratic areas (i.e. > 40 percent Democratic) correlates with an 0.06 p.p. greater vote share for the tax proposal. While this association is around three times larger than the average association in the main text, it is still substantively small and is again insufficient to change whether the proposal would have passed. The estimates from the other two indicators of economic losses are also small in magnitude across all values of

prior partisanship. That being said, across all models, we lack a sufficient number of cases in extremely Democratic areas (i.e. above 75 percent vote share) to make reliable inferences about the nature of the relationship in such contexts.

Figure A7 reports a similar analysis, focusing on the relationship between indicators of pandemic exposure in the ANES and support for the progressive tax proposal by partisanship. These estimates are calculated based on three separate OLS models interacting partisanship (measured in 2016) with each of the variables in the columns, based on the first difference models reported in the main text. Again, there are no detectable differences in the relationship across partisan groups.

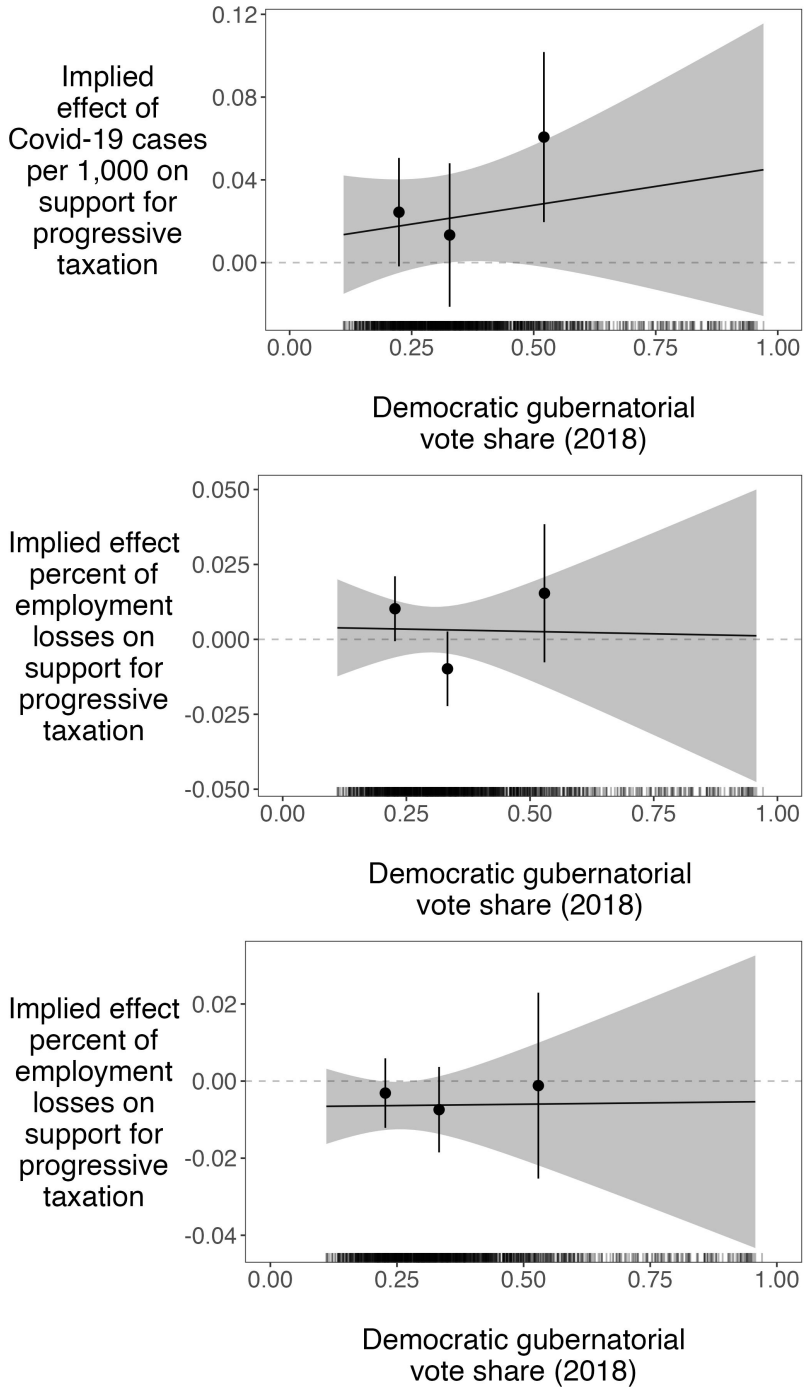

Figure A6: Association between Covid-19 burden and support for the progressive tax proposal by Democratic vote share in previous gubernatorial election

Plot summarizes point estimates and 95% confidence intervals from two OLS models interacting each measure of Covid-19 burden with 2018 Democratic gubernatorial vote share, measured linearly and by binning into terciles. The models also adjust for county fixed effects and the covariates listed in the notes to Table 1, plus their interactions with the moderator. ($n = 1,351$).

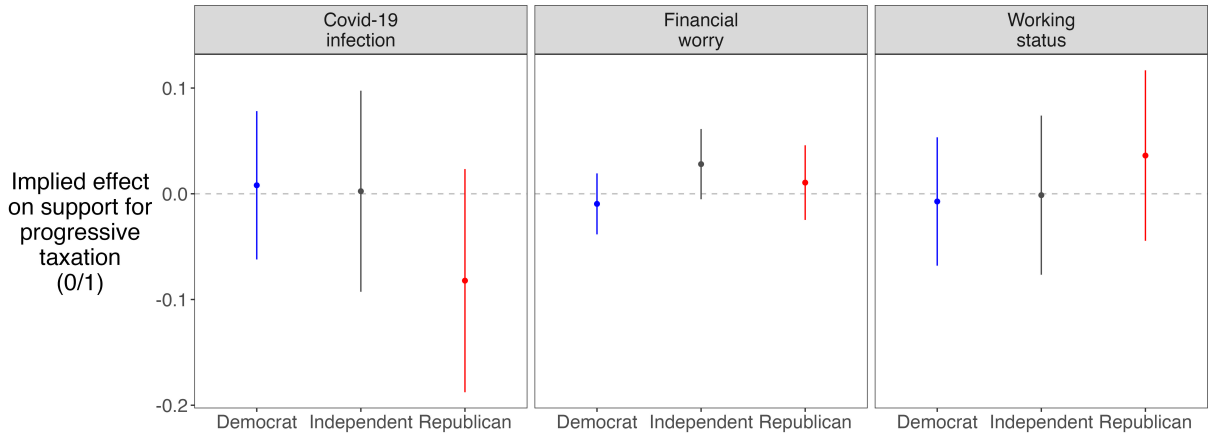

Figure A7: CATE estimates by partisanship in the ANES

Plot summarizes implied conditional average treatment effects of each variable in the columns according to partisanship in the ANES data. Results based on first-differences interaction models specified separately for each column in the plot. (n =2,613, 2,621, 2,620).

H Robustness to covariate exclusion

The main analysis relies on a number of covariates to address observable sources of confounding. To test whether the null result is sensitive to the choice of covariates, I re-run the main model iteratively, dropping one covariate at a time. As Figure A8 shows, across all specifications, the coefficient estimates on each of the indicators of Covid-19 burden are relatively stable, suggesting the estimated relationship is not an artifact of the choice of control variables.

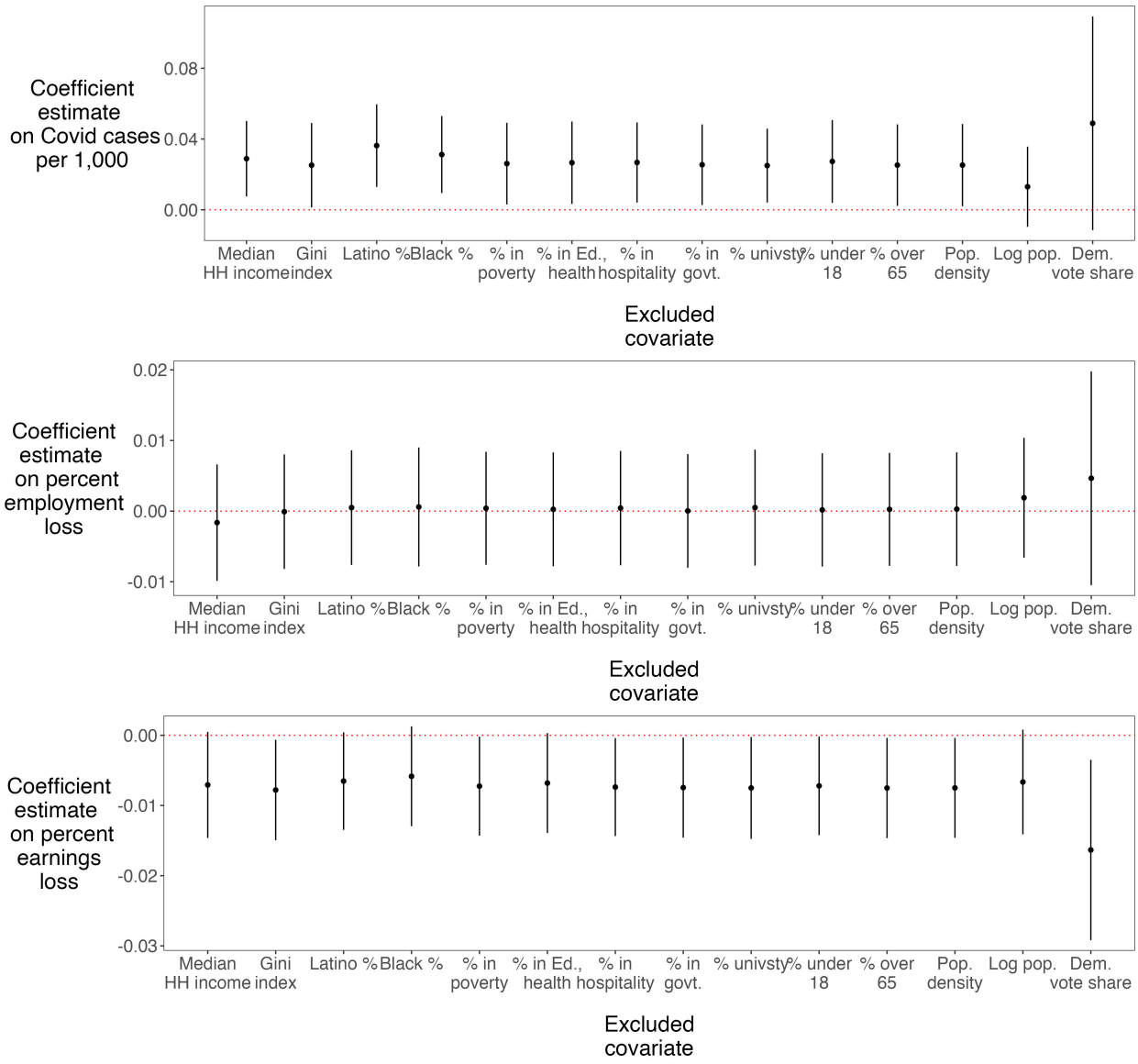

Figure A8: Robustness to covariate exclusion

Plot reports the coefficient estimates for each variable listed on the y-axis from models including all covariates listed on the x-axis *except* the one below the point estimate.

I Robustness to county exclusion

To ensure that the main results are not driven by any one region of the state, I re-run my main models iteratively, dropping one county at a time from the sample. As Figure A9 shows, across all specifications, the coefficient estimates on the indicators of Covid-19 burnde are stable, suggesting the estimated relationships are not driven by any one county.

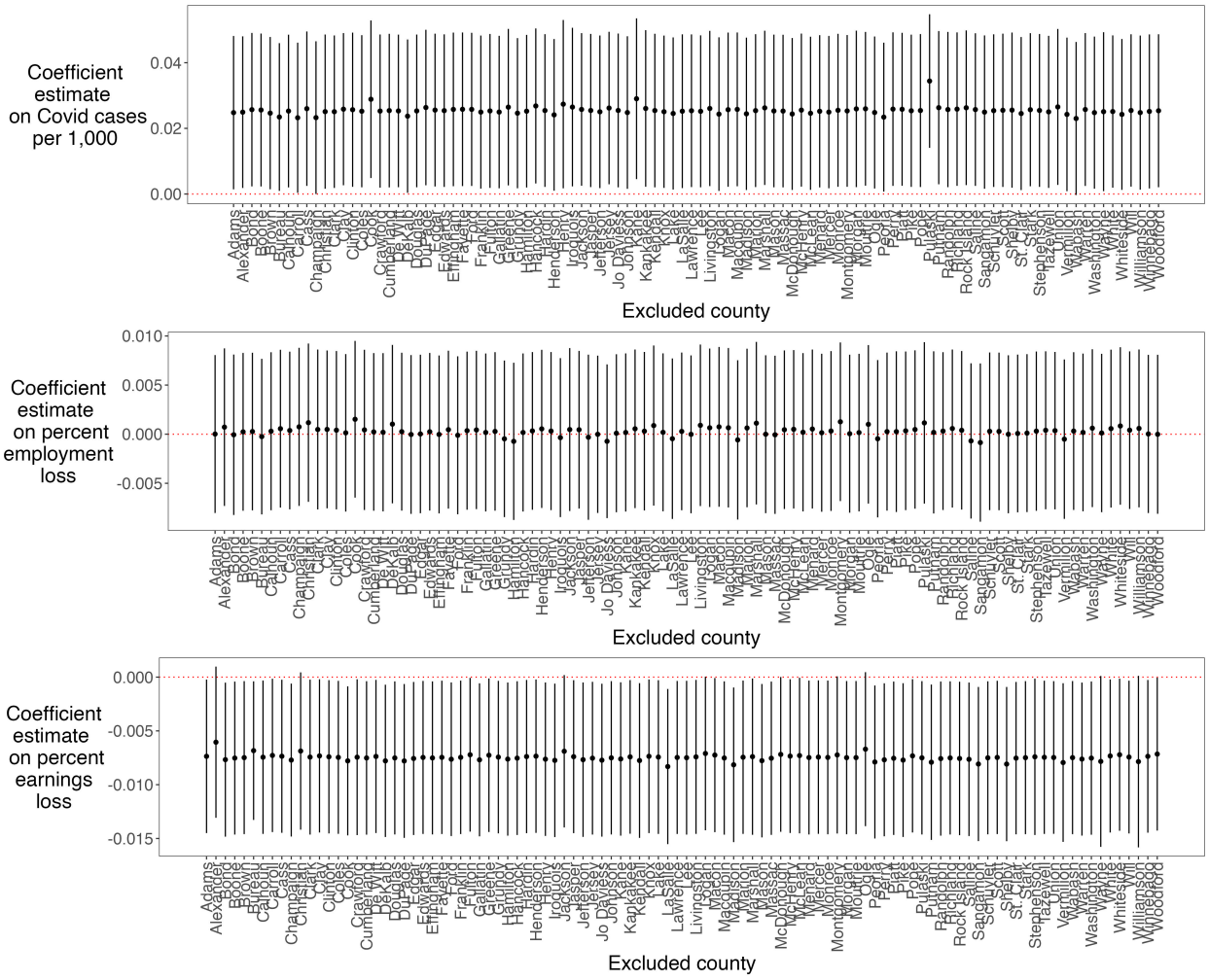

Figure A9: Robustness to county exclusion

Plot reports the coefficient estimates for each variable listed on the y-axis from models including all counties listed on the x-axis *except* the one below the point estimate.

J County-level results

Table A4 replicates the main results at the county-level. The coefficients here are significantly less precise given the smaller sample size, but the point estimates do not support the hypothesis that the pandemic was associated with increased support for progressive taxation. In the first two models, Covid-19 cases and deaths are, on average, actually negatively associated with support for the tax proposal. But these relationships are not particularly strong: a one standard deviation increase in each variable correlates with 0.6 and 0.1 p.p. decreases in the progressive tax vote share, respectively.

The third column uses employment data to test for the relationship between referendum voting and the pandemic's economic impacts. The independent variable here is measured as the average year-over-year percentage change in employment for the months between March and September 2020. The coefficient in Table A4 suggests that an average employment loss of 7% (the median across counties) would correlate with an increase of just 0.2 p.p. in support for the tax proposal relative to no change in employment.

Table A4: Covid-19 and support for progressive taxation at the county-level

	% supporting progressive taxation (measured from 0 to 100)		
	(1)	(2)	(3)
Covid-19 cases per 1,000	−0.107*		
	(0.052)		
Covid-19 deaths per 1,000		−0.450	
		(0.936)	
△ Employment rate			−2.255
			(7.130)
Observations	102	102	102
R^2	0.962	0.959	0.959
Controls	Yes	Yes	Yes

Robust standard errors in parentheses. Models includes the following covariates: region (north, central, south) FE, log population, population density, 2018 Democrat gubernatorial vote share, median household income, Gini coefficient, and the share of the population that is: under 18, over 65, Black, Hispanic, living in poverty, holding a bachelor's degree, as well as the percent working in the following industries: education, healthcare and social assistance; leisure and hospitality; government. *p<0.05

K Spatial analysis

The main analysis focuses on the relationship between support for progressive taxation and the pandemic burden within individual zip codes. This approach overlooks the possibility that voters may have been exposed to Covid-19 hardships through networks that extend beyond the immediate geographic environment of one's zip code. Indeed, the distribution of Covid-19 cases in the United States and other countries involved significant geographic clustering, with the disease concentrating in particular areas (Andrews et al., 2021).

In this section, I test whether these spatial dependencies might account for the null results reported in the main text. I begin by calculating, for each zip code in Illinois, a matrix of weights for every other zip code located within 25km, with the weight given to each nearby unit based on its inverse distance from the zip code in question. These weights allow me to calculate the spatially lagged number of cases per 1,000 residents as a weighted average of this variable among all other nearby zip codes. I also repeat this calculation for other indicators of the pandemic burden, including employment and earnings losses. My findings are not sensitive to the choice of distance threshold (alternative specifications not shown here) and the results that follow are not substantively different if I identify each zip code's neighbours as simply the units directly contiguous with its boundaries.

These distance-weighted measures of exposure to the pandemic allow me to calculate Moran's I, a statistic that quantifies the correlation in a given variable across space. It ranges from -1 to 1, corresponding to perfect negative positive spatial autocorrelation (dispersion) and perfect positive spatial autocorrelation (clustering), respectively; $I = 0$ indicates a case of randomness or the absence of any spatial pattern. In Table A5, I report this statistic for each of the three indicators of pandemic hardship. We really only observe evidence of clustering in the Covid-19 case count data, with $I = 0.2$, but less so for the economic indicators (p values are from a one-sided test against the expected I under random assignment; results are similar when using Monte Carlo simulation to calculate the p value).

In the remaining columns of Table A5, I report the estimates from an OLS model of the

following form:

$$\text{YesTax\%}_i = \text{PandemicExposure}_i\beta + \mathbf{W}\text{PandemicExposure}_{-i}\gamma + \mathbf{X}\theta + \mathbf{W}\mathbf{X}_{-i}\delta + \kappa_c + \varepsilon_i$$

where $\text{PandemicExposure}_i$ is zip code i's measure of exposure and $\mathbf{W}\text{PandemicExposure}_{-i}$ is the inverse-distance weighted average measure of exposure among zip codes nearby i.[4] The matrices $\mathbf{X}$ and $\mathbf{W}\mathbf{X}_{-i}$ are control variables and their spatial lags, as detailed in the notes to Table A5, and κ_c are county fixed effects.

The direct and indirect implied effects of an increase in pandemic exposure are given by β and γ. In the first row, the estimated direct association between Covid-19 cases and support for the progressive tax scheme is almost identical to the estimate from the non-spatial OLS in the main text. Each additional case per 1,000 residents is associated with 0.02 percentage points (p.p.) higher vote share for the tax proposal. The indirect implied effect is marginally larger, but estimated less precisely. Here, an additional one case per 1,000 residents in neighbouring units is associated with an increase of 0.04 p.p. in support for the tax proposal. The sum of these direct and indirect impacts (i.e. the total implied effect) is certainly larger than the direct implied effects reported in the main text. However, they are not so much larger as to meaningfully alter the conclusion that Covid-19 case counts were meaningfully associated with voting behaviour in the referendum. For example, a one standard deviation increase in cases under this model predicts only an 0.5 p.p. shift in favour of the tax proposal.

The remaining rows in Table A5 report the estimates from spatially lagged models using

[4]Note that I do not investigate spatial dependencies in Covid-19 deaths, because this data is only available for Chicago. Using the 25km threshold around each zip code would produce highly inaccurate data, since we are uncertain about deaths beyond the city's boundaries. I did test for spatial lags among contiguous neighbours, which should suffer less from this problem, but the results did not indicate a substantively meaningful total "effect": a 2.96 p.p. increase for each additional death per 1,000 residents (95% CI: -1.31, 7.25). As the confidence intervals suggest, this estimate is also fairly imprecise given the smaller number of zip codes in Chicago.

the economic indicators of pandemic burden, although the evidence for spatial autocorrelation based on Moran's I is significantly weaker for these variables. The findings here are similar: the coefficients on the spatially lagged variables (i.e. the indirect implied effect) are marginally larger and pointing in the same direction. Yet again the total impact of each variable is not significantly different from what we observe in the non-spatial models from the main text and, in the case of the earnings loss variable, suggests an even more negative association between the pandemic burden and support for progressive taxation.

Table A5: Spatial lag models of pandemic burden on support for progressive taxation

			Implied effect on support for progressive taxation (measured from 0 to 100)		
	n	Moran's I	Direct	Indirect	Total
Covid-19 cases per 1,000	1,351	0.193*	0.024*	0.043	0.067*
			(0.011)	(0.031)	(0.033)
Percent loss in employment	1,270	0.009	0.001	0.010	0.011
			(0.004)	(0.015)	(0.017)
Percent loss in earnings	1,270	−0.015	−0.010*	−0.038*	−0.048*
			(0.004)	(0.014)	(0.016)

Robust standard errors in parentheses. Models includes the following covariates and their spatial lags: log population, population density, 2018 Democrat gubernatorial vote share, median household income, Gini coefficient, and the share of the population that is: under 18, over 65, Black, Hispanic, living in poverty, holding a bachelor's degree, as well as the percent working in the following industries: education, healthcare and social assistance; leisure and hospitality; government. All models include county fixed effects. *p<0.05

L Referendum turnout

If the pandemic's health and economic burdens disproportionately depressed turnout in Democratic areas, the null estimates I find may simply be driven by Covid-19 cases demobilizing voters who would have otherwise supported the tax proposal. Table A6 reports the

association between turnout in the 2020 progressive taxation referendum and the various indicators of pandemic burden.[5] Across almost all specifications, the estimated relationship is negative, as expected, but substantively very small and statistically insignificant. For example, a full one standard deviation increase in case counts would move turnout by less than one p.p. These findings suggest that the main results are not driven by a systematic demobilization of pro-tax reform voters.

[5]Note that some precincts reported having 0 registered voters. I exclude these precincts from all turnout calculations, but for 4% of zipcodes, no non-missing turnout data is available. The results in Table A6 also exclude those zip codes.

Table A6: Zip code-level relationships between the Covid-19 burden and turnout in the tax referendum

	Voter turnout in tax referendum (measured from 0 to 100)				
	(1)	(2)	(3)	(4)	(5)
Covid-19 cases per 1,000	−0.018				
	(0.014)				
Covid-19 deaths per 1,000		−0.526			
		(0.906)			
Percent loss in employment			−0.004		
			(0.007)		
Percent loss in earnings				0.005	
				(0.006)	
Stricter lockdown					−0.127
					(0.969)
Sample	All of Illinois	City of Chicago	All of Illinois	All of Illinois	Lockdown Borders
Observations	1,297	58	1,221	1,221	94
R^2	0.759	0.950	0.771	0.771	0.658
Controls	Yes	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes	No

Robust standard errors in parentheses. Models include the following covariates: log population, population density, 2018 Democrat gubernatorial vote share, median household income, Gini coefficient, and the share of the population that is: under 18, over 65, Black, Hispanic, living in poverty, holding a bachelor's degree, as well as the percent working in the following industries: education, healthcare and social assistance; leisure and hospitality; government. County FE are not reported in models 2 and 5 because (a) Chicago exists within a single county and (b) lockdown restrictions are constant within counties. Model 5 contains border segment fixed effects. *p<0.05

M Anti-Incumbent Voting

One potential explanation for the null results in Illinois is that voters in areas especially hard hit by the pandemic disapproved of their governor's management of the crisis and their anger towards him caused them to vote against the progressive taxation scheme he championed in the referendum. In Appendix N, I show that Illinois is an unlikely setting for this kind of anti-incumbent anger to be a major determinant of voting on the ballot proposal because voters in the state did not view their governor's pandemic management especially negatively.

Nonetheless, one way to investigate the role of anti-incumbent bias is to examine the associations between support for the tax proposal in 2020, shifts in support for Illinois Governor Pritzker between 2018 and 2022, and the local Covid-19 burden. Table A7 reports the results of several OLS models that parallel those in the main text, except that the dependent variable is the zip code-level change in vote share for Governor Pritzker between 2018 and 2022.

The first model reveals that support for the tax proposal is indeed positively correlated with changes in the governor's support. Each additional percentage point (p.p.) increase in support for progressive taxation is associated with approximately 0.4 p.p. greater support for Pritzker in 2022 compared to 2018. One interpretation of this result is that areas that were hard hit by the pandemic expressed their anger against the governor by voting against his tax proposal in 2020 and against him personally in 2022.

However, the remaining columns in Table A7 show that across multiple indicators, there is essentially no relationship between the local pandemic severity and changes in Pritzker's vote share. Areas with more Covid-19 cases and deaths, or where there were greater losses in employment and earnings, or stricter lockdowns were no more or less likely to shift their support against the governor during his re-election campaign in 2022. These results cast doubt on the explanation that the pandemic led to anti-incumbent anger, which then manifested as opposition to the incumbent's tax plan. For that story to be true, we would have expected to observe some association between the pandemic burden and shifts in support

for the governor from the pre- to post-pandemic elections.

So why then do I identify a strong association in Model 1 between support for the 2020 tax proposal and shifts toward Pritzker in 2022? The simplest explanation is that the same areas that became more Democratic between 2018 and 2020 for reasons unrelated to Covid-19 are the same areas that also became more progressive or Democratic between 2018 and 2022, and therefore also supported Pritzker more strongly in 2022 compared to 2018. For example, these areas may have seen an in-migration of Democrats or a trend toward more liberal attitudes that began before the pandemic. These patterns are not directly observable, but are likely being captured by the 2020 referendum measure, which offers a more accurate indicator of the prevailing local partisanship than the vote share measure from two years prior. In support of this interpretation, I find that in Model 1, the coefficient on Pritzker's 2018 vote share shrinks by more than half when the "% supporting progressive taxation" is added to the model (results not shown here).

N Governor Approval Ratings

Figure A10 summarizes governor approval scores during the early period of the pandemic. The upper panel shows that in the period before the November 2020 referenda, Illinois' Governor Pritzker's handling of the pandemic was seen as neither particularly better nor particularly worse than that of other governors across the country. This contrasts sharply with Arizona, where Governor Ducey's management of the pandemic was evaluated among the worst in the country. The bottom panel presents similar results: Pritzker's general approval rating after the pandemic is around the median score, although he saw one of the larger jumps in approval from his pre-pandemic score. Ducey, by contrast, saw almost no improvement in his rating after the pandemic began, and was evaluated most harshly of any governor in the country.

Table A7: Zip code-level determinants of changes in Illinois governor support, 2018 to 2022

	Change in Governor Pritzker vote share, 2018−2022 (measured from -100 to 100)					
	(1)	(2)	(3)	(4)	(5)	(6)
% supporting progressive taxation (2020)	0.444*					
	(0.043)					
Covid-19 cases per 1,000		−0.008				
		(0.011)				
Covid-19 deaths per 1,000			0.532			
			(0.561)			
Percent loss in employment				0.006		
				(0.006)		
Percent loss in earnings					−0.002	
					(0.005)	
Stricter lockdown						1.453
						(0.774)
Sample	All of Illinois	All of Illinois	City of Chicago	All of Illinois	All of Illinois	Lockdown Borders
Observations	1,351	1,351	58	1,270	1,270	97
R^2	0.836	0.810	0.923	0.816	0.815	0.829
Controls	Yes	Yes	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes	Yes	No

Robust standard errors in parentheses. Models include the following covariates: log population, population density, 2018 Democrat gubernatorial vote share, median household income, Gini coefficient, and the share of the population that is: under 18, over 65, Black, Hispanic, living in poverty, holding a bachelor's degree, as well as the percent working in the following industries: education, healthcare and social assistance; leisure and hospitality; government. County FE are not reported in models 3 and 6 because (a) Chicago exists within a single county and (b) lockdown restrictions are constant within counties. Model 6 contains border segment fixed effects. *p<0.05

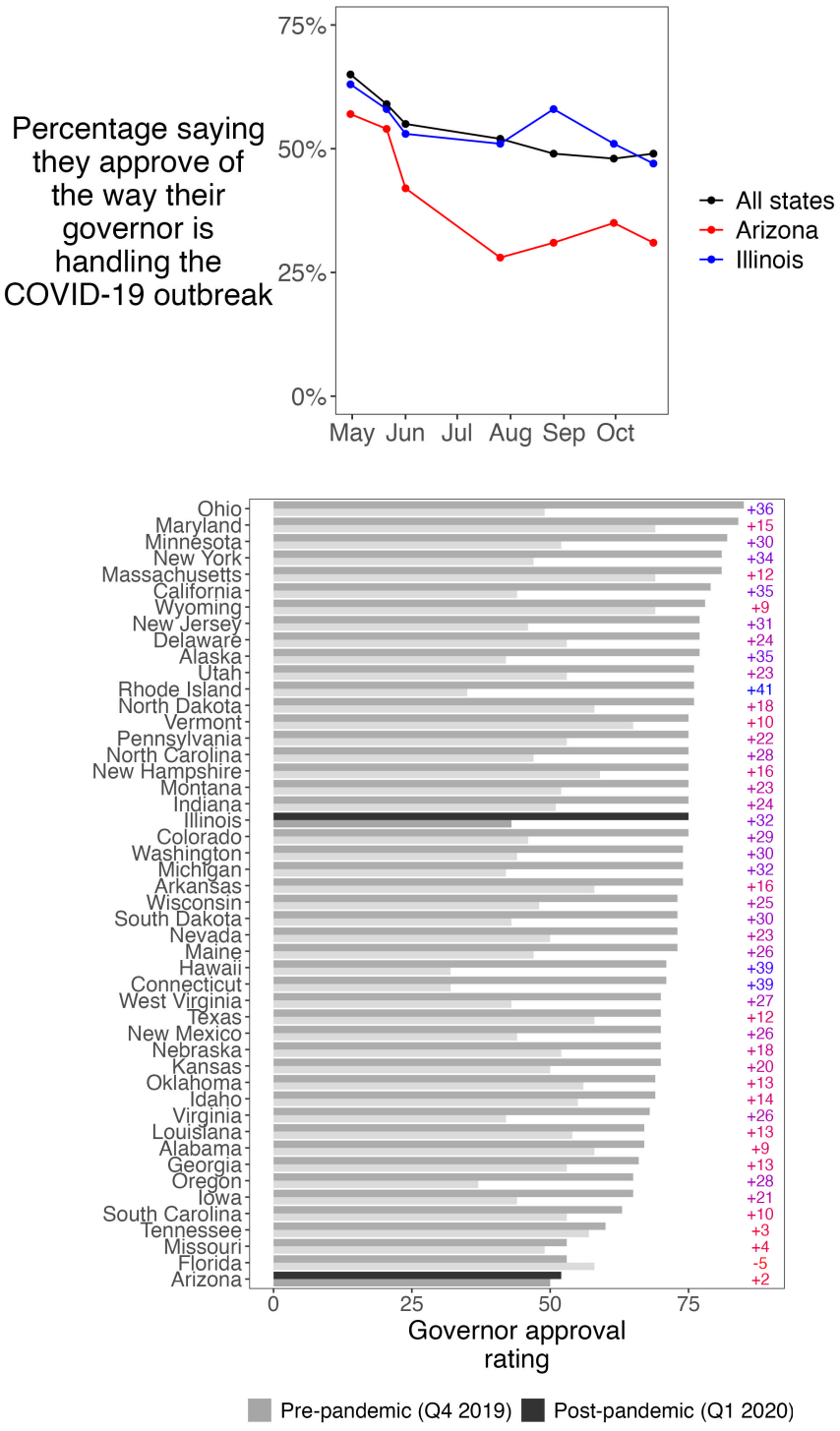

Figure A10: Governor approval ratings during the Covid-19 pandemic

The upper panel summarizes survey data from the Covid States Project (2020) in terms of the percentage of respondents that either approve or strongly approve "of the way your governor is handling the COVID-19 outbreak." The bottom panel summarizes data from Morning Consult (2020) on the average rating given to governors in each state by whether respondents were surveyed before or after the onset of the pandemic.

O Arizona's progressive tax referendum

Are the results from Illinois sensitive to some peculiarity of that state's political context? Like Illinois, Arizona held a referendum on progressive taxation in November 2020. Voters in that state were asked to approve a nearly identical taxation scheme, in which income over $250,000 ($500,000 for joint-filers) would be assessed a 3.5% surcharge on top of the existing 4.5% marginal tax rate. At the time of the referendum, Arizona already had a graduated income tax system, with four tax brackets; the ballot proposal would have effectively created a fifth bracket. Instead of being deposited in a general fund, the revenue for the new tax was to be specifically spent on teacher and classroom support staff salaries, teacher mentoring and retention programs, career and technical education programs, and the Arizona Teachers Academy. Unlike in Illinois, the initiative was opposed by Republican Governor Doug Ducey. The ballot measure was introduced by the Invest in Education Coalition, who collected signatures and sponsored the petition. Voters approved the proposal by a margin of 52 to 48%, but the reform was overturned in the courts as unconstitutional after a lengthy legal battle.

I assemble zip code-level Covid-19 case data from the Arizona Department of Health (ADH) for the period up to October 7, 2020, when mail-in ballots were sent to voters. Because the ADH suppresses data on tribal reservations, the 7.8% of zip codes containing these geographies are excluded from the analyses. Referendum results are then matched to zip codes using the same spatial-weighting procedure as in Illinois (see Appendix E for details). Indicators for pandemic-era employment and earnings changes are from the same Census Bureau data used in Illinois.

I re-run my main analysis on referendum returns in Arizona and present the results in Table A8. There are only about 25% as many zip codes in Arizona as in Illinois, and the coefficient estimates are accordingly much noisier, but a similar pattern is apparent: Covid-19 cases and economic losses are not meaningfully associated with support for the progressive tax proposal. None of estimates are positive nor significantly different from zero. The fact

that the results from this case are similar to those in the main text provides some indication that the findings from Illinois are likely to apply more broadly.

Table A8: Zip code-level relationships between the Covid-19 burden and support for progressive taxation in Arizona

	% supporting progressive taxation (measured from 0 to 100)		
	(1)	(2)	(3)
Covid-19 cases per 1,000	−0.002		
	(0.017)		
Percent loss in employment		0.003	
		(0.008)	
Percent loss in earnings			0.008
			(0.008)
Observations	338	335	335
R^2	0.960	0.965	0.965
Controls	Yes	Yes	Yes
County FE	Yes	Yes	Yes

Robust standard errors in parentheses. Models include the following covariates: log population, population density, 2018 Democrat gubernatorial vote share, median household income, Gini coefficient, and the share of the population that is: under 18, over 65, Black, Hispanic, living in poverty, holding a bachelor's degree, as well as the percent working in the following industries: education, healthcare and social assistance; leisure and hospitality; government. $^{*}p<0.05$

P ANES analysis

The ANES analysis is based on a web-based sample of respondents who completed both the 2016 and 2020 waves of the survey. Overall, 78% of respondents completed the second survey in 2020. Those who supported progressive taxation, were working, and were less worried about their financial situation were all more likely to be re-surveyed.

The main analysis relies on several variables, detailed below. Table A9 provides descriptive statistics for these variables in each wave of the survey.

1. **Support for progressive taxation**: "Do you favor, oppose, or neither favor nor oppose increasing income taxes on people making over one million dollars per year?"

    - In the main text, this variable is dichotomized into a support vs. oppose or neither favour nor oppose dummy variable. Results are nearly identical when treating this variable as a three-point scale (see Table A10)

2. **Covid-19 infection**: "Yes" to either "Has anyone in your household tested positive for the coronavirus disease, COVID-19, or has no one tested positive?" or "Has anyone in your household been suspected of having COVID-19 based on their symptoms, or not?"

    - In supplementary analyses, Covid-19 infection was found to be positively associated with working status and financial worry, but not partisanship or support for progressive taxation.

3. **Financial worry**: "So far as you and your family are concerned, how worried are you about your current financial situation?"

    - Measured on a five-point scale from "not at all worried" to "extremely worried". This variable is standardized to have mean zero and s.d. of 1 before taking first differences.

4. **Working status**: Measured slightly differently in each year, but this item is the basis for all work-related questions in each survey:

    - 2016: We'd like to know if you are working now, temporarily laid off, or are you unemployed, retired, permanently disabled, a homemaker, a student, or what?
    - 2020: Last week, did you work for pay at a job or business?

    In each case, the variable is coded 1 if the respondent indicates they are working now and 0 otherwise. Despite the different wording, nearly identical proportions of respondents indicated they were working in each survey year.

5. **Partisanship**: Generally speaking, do you usually think of yourself as a Democrat, a Republican, an independent, or what?

    - In the analysis by partisanship (see Figure A7), I use the 2016 measure of this variable only. 75% of respondents indicated gave the same answer to this question in both years.

6. **Egalitarianism**: Average agreement with the following statements:

    (a) Our society should do whatever is necessary to make sure that everyone has an equal opportunity to succeed.

(b) This country would be better off if we worried less about how equal people are. (reversed)

(c) It is not really that big a problem if some people have more of a chance in life than others. (reversed)

(d) If people were treated more equally in this country we would have many fewer problems.

This scale offers an alternative dependent variable which measures attitudes toward inequality in society and could act as an intermediary outcome between personal pandemic burden and support for progressive tax proposals (Feldman, 1988). In Table A11, I re-run the main analyses with the dependent variable set as the change in respondents' egalitarianism before and after the pandemic onset (scaled in terms of standard deviation changes).

Overall, the results indicate that personal hardships during the pandemic are not strongly associated with changes in views toward equality. The coefficients on Covid-19 infection, changes in financial worry, and changes in employment status are almost all statistically insignficant and substantively small. In the most generous interpretation, if we look at the upper bounds of the confidence intervals around these estimates, Covid-19 infection and losing employment are each independently associated with just over an 0.16 s.d. increase in egalitarian views. While this is not a negligible shift, it is also not so large or precisely estimated to offer convincing evidence that the pandemic affected intermediary attitudes but not taxation preferences.

Table A9: Descriptive statistics for ANES panel

			Sample Mean	
	Min.	Max.	2016	2020
Support for Millionaires tax (dichotomous)	0	1	0.68	0.64
Support for Millionaires tax (3-point scale)	-1	1	0.54	0.47
Covid infection	0	1	0.00	0.14
Worried about finances	1	5	2.67	2.19
Currently working	0	1	0.61	0.59
Party ID: Democrat	0	1	0.35	0.35
Party ID: Independent	0	1	0.36	0.32
Party ID: Republican	0	1	0.29	0.32

Table A10: First differences in the ANES using 3-point outcome scale

	△ Support Millionaires Tax (3-point scale)			
Covid infection (0/1)	0.008			0.007
	(0.044)			(0.044)
△ Worried about finances (z-score)		0.013		0.011
		(0.016)		(0.016)
△ Currently working (0/1)			0.010	0.015
			(0.035)	(0.035)
Observations	2,625	2,632	2,633	2,616
R^2	<0.001	<0.001	<0.001	<0.001

Robust standard errors in parentheses. *p<0.05

Table A11: First differences in egalitarianism in the ANES

	△ Egalitarianism (z-score)			
Covid-19 infection (0/1)	0.049			0.057
	(0.053)			(0.053)
△ Worried about finances (z-score)		0.022		0.018
		(0.019)		(0.019)
△ Currently working (0/1)			−0.086*	−0.082
			(0.042)	(0.042)
Observations	2,636	2,641	2,644	2,625
R^2	0.0003	0.001	0.002	0.002

Robust standard errors in parentheses. Outcome represents the change in expressed egalitarianism between 2016 and 2020, scaled in terms of 2016 standard deviations. *p<0.05

P.1 Alternative assessment of personal impact in the ANES

The main analysis of the association between personal exposure to Covid-19 and support for progressive taxation is based on whether respondents self-report an infection in their household. It is plausible that some of those who were exposed to the virus experienced more or less adverse consequences of this exposure based on their economic vulnerability and health conditions. Those who contracted Covid-19, but also lost their job in the pandemic or who had especially severe symptoms may have adjusted their attitudes toward progressive taxation more than those with mild cases and no change in economic well-being.

To test for this possibility, I run two interaction models, summarized in Table A12. In the first column, I interact Covid-19 exposure with whether a respondent reported having a job in 2020. The model indicates that infection was associated with a decrease in support for the tax proposal of 0.6 percentage points among those who were not working, compared to a decrease of 2 percentage points among those with a job. This difference in coefficients, while not significant, runs contrary to the expectation that the two compounded burdens would increase support for the tax proposal. In the second column, Covid-19 exposure is interacted with the 5-point self-reported health score of respondents in 2020, which ranges from "Poor" (0) to "Excellent" (4). The estimate indicates that those who report poor health in 2020 and were exposed to the virus became on average 3.7 percentage points more likely to support progressive taxation relative to those who were not exposed to Covid-19. The interaction term is negative, implying that exposure had less of a positive association with support for the millionaires tax among those in better health, although neither estimate from the model is statistically significant. Figure A11 presents these results graphically, along with the point estimates from a separate model in which self-reported health status is specified categorically. In both models, the largest positive association is among those with poor health in 2020, although there is a high degree of imprecision in the estimates at that point in the scale.

In sum, the results from the interaction models offer uncertain evidence that personal exposure to Covid-19 was more strongly associated with increased support for progressive

taxation among those facing especially negative health condition and those who were simultaneously experiencing economic precarity.[6] Ultimately, it is difficult to arrive at a definitive conclusion about these differential reactions due to issues with statistical power. There are only a small number of individuals that fall into certain categories of the interaction terms. Only 110 respondents were both exposed to Covid-19 and unemployed in 2020, while just 15 reported exposure and "poor" health status. For this reason, we cannot confidently rule out a substantively large, positive impact on support for a millionaires tax among those experiencing precarity or especially negative health impacts from exposure to the virus. For example, the upper bound on the implied effect of Covid-19 exposure among the unemployed in 2020 is almost +10 percentage points, which would be a significant finding if it were estimated precisely. Conversely, the lower bound on the association between Covid-19 exposure and support for progressive taxation among those with "poor" health is also large and negative ($\sim$10 p.p.), which would run counter to the expectation of a stronger positive relationship among those most adversely impacted by the virus.

[6]In supplementary checks (not reported here), I also investigated interactions between Covid-19 exposure and (i) changes in employment status; (ii) changes in financial worry; and (iii) changes in health conditions between the 2016 and 2020 survey waves, but the results similarly do not suggest that exposure to Covid-19 was more strongly associated with tax preferences when respondents also experienced increases in economic precarity or worsening health conditions between waves.

Table A12: First differences in support for progressive taxation by Covid-19 infection and indicators of health and economic vulnerability

	△ Support Millionaires Tax (0/1)	
Covid-19 infection (0/1)	−0.006	0.037
	(0.053)	(0.077)
Covid-19 infection × Currently working in 2020 (0/1)	−0.014	
	(0.063)	
Covid-19 infection × Health score in 2020 (0 to 4)		−0.023
		(0.030)
Observations	2,623	2,621
R^2	0.0001	0.003

Robust standard errors in parentheses. *p<0.05

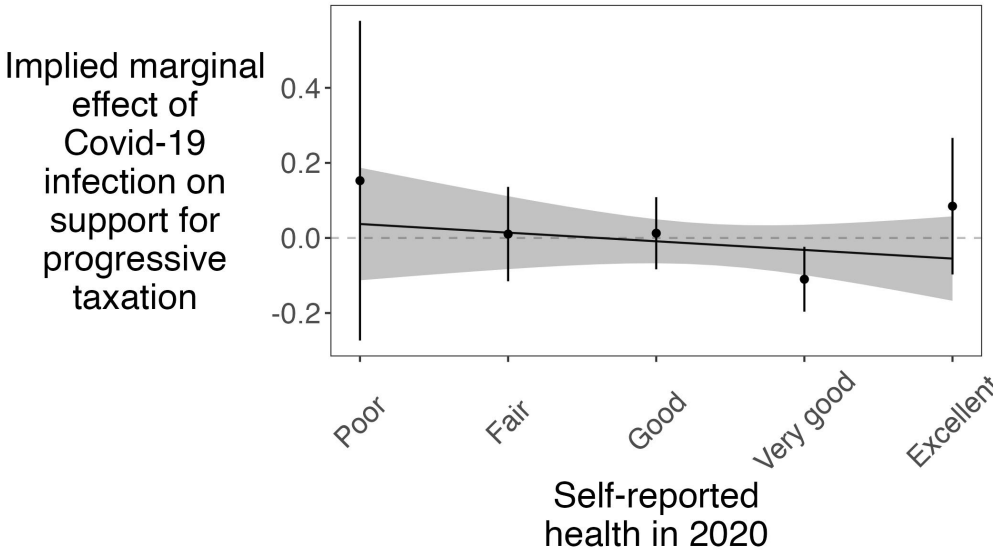

Figure A11: Heterogeneous implied effects of Covid-19 by self-reported health score in 2020

Plot summarizes two OLS first-differences models interacting Covid-19 infection with the self-reported health score in 2020, specified either linearly or as a categorical, 5-point moderator. (n =2,621).

Appendix References

Andrews, M. R., Tamura, K., Best, J. N., Ceasar, J. N., Batey, K. G., Kearse Jr, T. A., Allen III, L. V., Baumer, Y., Collins, B. S., & Mitchell, V. M. (2021). Spatial clustering of county-level COVID-19 rates in the US. *International journal of environmental research and public health*, *18*(22), 12170.

Feldman, S. (1988). Structure and consistency in public opinion: The role of core beliefs and values. *American Journal of political science*, 416–440.

Hainmueller, J., Mummolo, J., & Xu, Y. (2018). How much should we trust estimates from multiplicative interaction models? Simple tools to improve empirical practice. *Political Analysis*, (Forthcoming). https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=2739221

Holliday, D. E., Lelkes, Y., & Westwood, S. J. (2024). Affective polarization is uniformly distributed across American States. *PNAS Nexus*, *3*(10), pgae310. https://doi.org/10.1093/pnasnexus/pgae310

Shor, B., & McCarty, N. (2022). Two Decades of Polarization in American State Legislatures. *Journal of Political Institutions and Political Economy*, *3*(3–4), 343–370. https://doi.org/10.1561/113.00000063