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A FINAL REPORT CARD ON THE STATES' RESPONSE TO COVID-19

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ABSTRACT

Almost exactly two years ago COVID-19 spread to the United States. Following the federalism model, the 50 states and their governors and legislators made many of their own pandemic policy choices to mitigate the damage from the virus. States learned from one another over time about what policies worked most and least effectively in terms of containing the virus while minimizing the negative effects of lockdown strategies on businesses and children.

This study is an expanded and updated version of an October 2020 report card of how pandemic health, economy, and policy varied across the 50 states and the District of Columbia (Committee to Unleash Prosperity 2020). It examines three variables: health outcomes, economic performance throughout the pandemic, and impact on education.

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A data appendix is available at http://www.nber.org/data-appendix/w29928

Introduction

Modern economies like the United States spend considerable resources on health, ranging from hospitals to drugs, to device manufacturing to at-home care. With health very high among the American population's priorities, it is no surprise that government officials and most citizens were willing to sacrifice income and some of their daily routines and normal freedoms in order to significantly reduce the burden of this new disease.

The COVID-19 pandemic was distinct from other previous health pandemics in the degree to which we saw government interventions in the economy and suspension of individual freedoms – including policies such as lockdowns, curfews, mask and vaccine mandates, mandatory business closures, school shutdowns, and so on.

After the first several months of the pandemic, decisions about the most effective policies to balance health risks and allowing businesses to stay open and workers to go to work, as well as keeping schools, stores, churches and parks open and under what conditions were left to the 50 states. The purpose of this paper is to measure and compare the different economic and health trajectories across the 50 states and DC.

Our measures fall into three categories: the economy, education, and mortality. For economic performance we used two measures: unemployment and GDP by state. For education we used a single metric: the Burbio cumulative in-person instruction percentage for the complete 2020-2021 school year, with hybrid instruction weighted half. For mortality we used two measures: COVID-associated deaths reported to the CDC and all-cause excess mortality.

Of course, even without a pandemic, states populations are heterogeneous and their economies emphasize different industries. And because the pandemic had a much more negative effect on economic output in some industries (such as entertainment, energy production, mining, hotels and food), we adjust unemployment and GDP changes for industry composition. We adjust COVID mortality (through March 5, 2022) for age and "metabolic health," by which we mean the pre-pandemic prevalence of obesity and diabetes – as these are highly correlated with higher death rates from the virus.

Economy and schooling are positively correlated (correlation coefficient = 0.43), which suggests a relationship between the willingness of the population (or its politicians) to resume normal activity in business and school. MT, SD, NE, and UT are the states highest on the economy score and also among only seven states to exceed 85 percent open schools. The correlation between health and economy scores is essentially zero, which suggests that states that withdrew the most from economic activity did not significantly improve health by doing so.

We should note that Hawaii, as an isolated island, stands out as a special case. It ranks last on the economic index and sixth from last on schooling. As of March 2022, it ranks first on health. Understood in the context of island nations such as Australia and New Zealand, the experience of HI suggests that island locations can, by sustaining significant economic losses, reduce mortality for a year or more. (Australia and New Zealand saw higher outbreaks in later stages of the virus spread.) Interestingly, Maine opened its schools at almost triple the rate as Hawaii did and was able to achieve a health score almost as high.

The economy and education components were likely influenced by decisions made by policymakers, but it is unclear if that is the case for the mortality component. One possible exception is nursing home policies, which may explain why several states, especially New York and New Jersey, performed poorly on mortality metrics. A recent comprehensive global review by Heneghan, et. al. (2021) concluded that COVID-19 disproportionately occurred in nursing homes. Because the states that were transferring COVID patients from hospitals to nursing homes also tended to systematically underreport nursing home deaths so this is a difficult question to examine quantitatively.

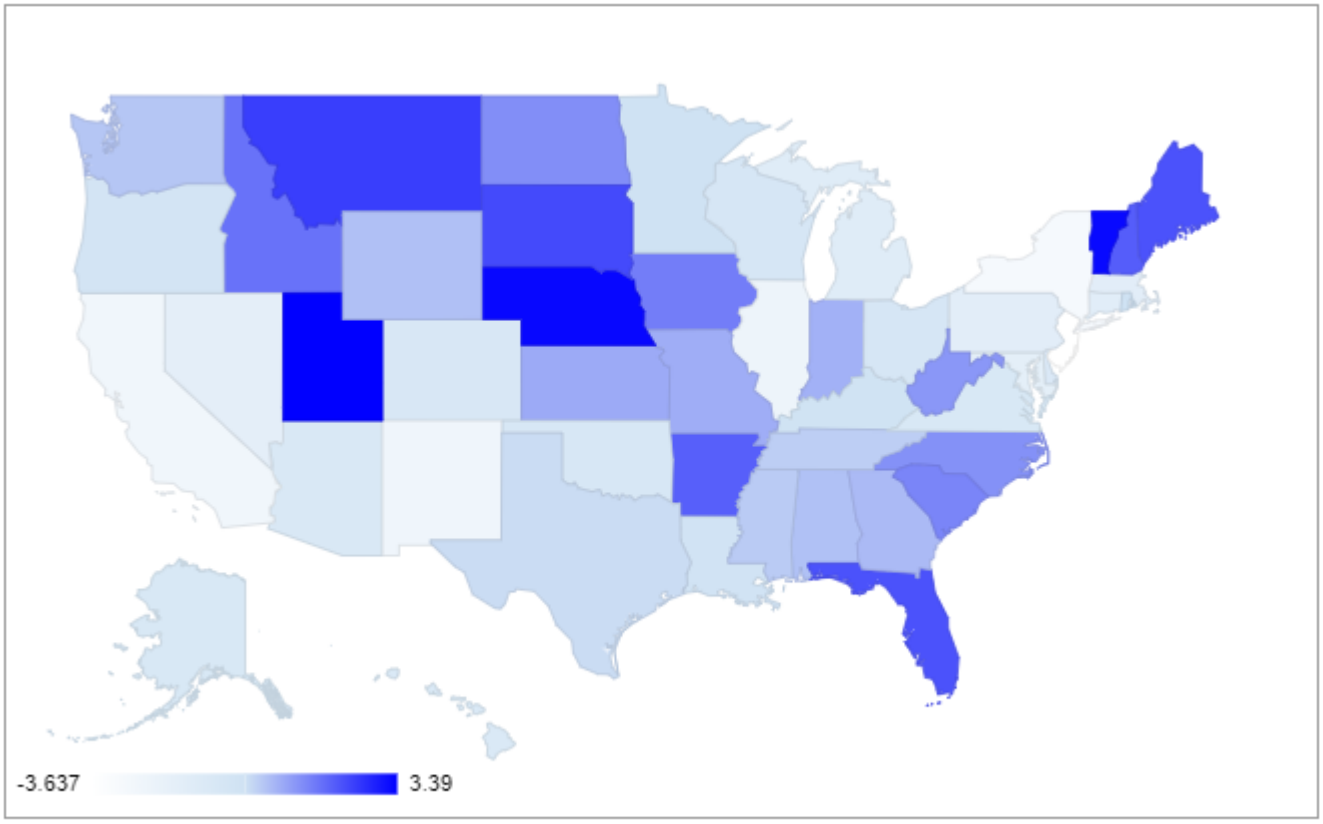
Using other methods, several studies have also found little health benefit of closing schools or businesses. Several studies find low COVID-19 transmission rates in schools. Herby, Jonung, and Hanke's (2022) metaanalysis finds that "lockdowns in Europe and the United States only reduced COVID-19 mortality by 0.2% on average." Mulligan (2021b) finds that in-person workplaces were often safer, in terms of COVID transmission per person per hour, than households were due to the additional prevention efforts made in workplaces. Several other studies have found that efforts to reduce COVID mortality had costly unintended consequences.

In addition to calculating category-specific indices, we also calculated a single combined score that equally weights the z-scores of the three components and then transforms to a 0-100 scale.

Results

This summary map shows combined scores. The table shows each state's combined score alongside its components. The outcomes in NJ, NY, and CA were among the worst in all three categories: mortality, economy, and schooling. UT, NE, and VT were leaders in all three categories. The scores have a clear spatial pattern, perhaps reflecting spatial correlations in demographic, economic, and political variables. However, IL, NM, CO, and CA are outliers among their geographic neighbors in the direction of low combined scores. FL, AR, WV, and UT are outliers in the other direction.

State Pandemic Performance, Combined Score



Source: Committee to Unleash Prosperity

Grade	Rank	States/DC	Combined Score	Scaled (0-100) Combined Score	Unemployment (Industry-Adjusted)	Rank	GDP (Industry-Adjusted)	Rank	Economy Average (Z Scores)	Rank	In-Person School %	Rank	Age and Metabolic Health Adjusted COVID Deaths per 100K	Rank	All-Cause Excess Deaths	Rank	Mortality Average (Z Scores)	Rank
A+	1	Utah	3.46	100.0	1.5%	6	0.6%	2	1.42	4	87.3%	5	252.7	13	10.6%	7	0.84	8
A+	2	Nebraska	3.25	97.0	0.6%	2	-0.4%	7	1.47	3	87.0%	6	257.9	14	12.8%	12	0.58	11
A+	3	Vermont	3.24	96.9	1.7%	9	-3.3%	31	0.26	19	79.5%	11	155.5	2	5.3%	2	2.13	2
A	4	Montana	2.29	83.4	0.2%	1	0.5%	3	1.91	1	85.7%	7	344.6	41	19.5%	38	-0.75	40
A	5	South Dakota	2.08	80.4	0.7%	3	0.8%	1	1.77	2	89.3%	4	344.9	42	21.9%	47	-0.98	44
A	6	Florida	2.04	79.9	2.1%	15	-1.5%	14	0.57	13	96.2%	3	277.1	22	18.8%	34	-0.13	28
A	7	New Hampshire	1.99	79.2	2.3%	19	-2.0%	22	0.35	18	60.9%	28	192.5	5	7.7%	3	1.61	3
A	8	Maine	1.95	78.6	2.5%	24	-0.8%	9	0.63	11	58.1%	31	171.8	3	11.5%	9	1.41	4
A	9	Arkansas	1.88	77.7	2.0%	11	-1.3%	13	0.69	10	96.8%	2	287.9	26	21.0%	43	-0.43	37
B	10	Idaho	1.63	74.1	1.5%	5	-0.1%	6	1.23	5	70.6%	20	305.1	31	15.6%	20	-0.07	26
B	11	Iowa	1.43	71.2	2.4%	21	-1.6%	16	0.44	16	75.4%	16	267.6	17	14.9%	18	0.31	16
B	12	South Carolina	1.32	69.8	2.0%	14	-1.0%	11	0.73	8	77.6%	12	271.9	19	19.7%	41	-0.18	31
B	13	North Carolina	1.15	67.2	2.2%	17	-1.9%	19	0.42	17	50.8%	34	228.1	8	9.5%	5	1.14	7
B	14	North Dakota	1.08	66.2	4.0%	43	0.1%	5	0.25	20	82.2%	9	352.0	44	12.4%	11	-0.15	30
B	15	West Virginia	1.01	65.4	2.5%	25	-2.5%	28	0.15	26	62.7%	27	204.4	7	15.8%	21	0.75	9
B	16	Missouri	0.70	61.0	1.7%	10	-2.4%	27	0.47	15	68.6%	22	299.2	29	17.0%	23	-0.14	29
B	17	Kansas	0.70	61.0	2.4%	22	-2.4%	25	0.21	22	69.9%	21	272.8	20	17.2%	26	0.05	19
B	18	Indiana	0.66	60.3	2.6%	29	-2.0%	20	0.23	21	75.6%	15	302.4	30	18.0%	31	-0.26	33
C	19	Georgia	0.57	59.2	1.6%	8	-3.7%	35	0.18	23	76.7%	13	296.7	28	19.3%	36	-0.34	36
C	20	Alabama	0.42	57.0	2.0%	13	-3.6%	34	0.01	28	74.8%	17	291.1	27	18.7%	32	-0.24	32
C	21	Wyoming	0.42	57.0	2.6%	28	-4.2%	40	-0.36	37	100.0%	1	315.9	35	24.5%	48	-0.99	45
C	22	Washington	0.36	56.2	3.0%	36	0.3%	4	0.71	9	22.3%	47	203.4	6	9.7%	6	1.33	5
C	23	Mississippi	0.24	54.4	1.1%	4	-1.9%	18	0.86	7	76.2%	14	354.1	45	24.9%	49	-1.34	49
C	24	Tennessee	0.18	53.6	2.5%	27	-2.3%	24	0.17	24	71.7%	18	316.3	36	19.3%	37	-0.51	38
C	25	Texas	0.06	51.8	4.0%	42	-1.1%	12	-0.08	31	83.0%	8	332.6	39	21.9%	46	-0.88	43
C	26	Minnesota	-0.16	48.8	2.3%	18	-3.6%	32	-0.07	30	46.0%	37	261.2	15	13.0%	13	0.54	13
C	27	Rhode Island	-0.16	48.8	3.8%	39	-3.6%	33	-0.68	41	65.4%	24	318.4	37	10.7%	8	0.29	17
C	28	Kentucky	-0.19	48.4	1.6%	7	-2.4%	26	0.54	14	44.9%	39	286.4	25	17.1%	25	-0.06	25
C	29	Louisiana	-0.29	47.0	2.8%	32	-5.7%	49	-0.88	43	80.1%	10	263.9	16	21.8%	45	-0.30	34
C	30	Oregon	-0.37	45.8	2.9%	34	-2.1%	23	0.09	27	20.2%	49	178.5	4	12.1%	10	1.31	6
D	31	Wisconsin	-0.61	42.4	2.2%	16	-4.5%	44	-0.28	35	46.5%	36	277.3	23	14.4%	16	0.27	18
D	32	Ohio	-0.62	42.3	2.5%	26	-3.7%	36	-0.21	34	58.3%	30	310.3	33	17.9%	30	-0.33	35
D	33	Alaska	-0.63	42.1	2.8%	31	-4.5%	45	-0.53	39	58.8%	29	238.0	11	21.3%	44	-0.05	24
D	34	Oklahoma	-0.63	42.1	2.6%	30	-3.9%	39	-0.33	36	70.8%	19	352.0	43	19.1%	35	-0.78	41
D	35	Colorado	-0.68	41.5	3.8%	40	-1.7%	17	-0.16	32	63.3%	26	359.7	46	17.2%	27	-0.66	39
D	36	Virginia	-0.78	40.0	2.9%	35	-3.0%	30	-0.19	33	34.2%	44	234.5	10	15.2%	19	0.55	12
D	37	Arizona	-0.91	38.2	2.0%	12	-0.6%	8	0.87	6	64.9%	25	365.6	47	30.8%	51	-1.99	51
D	38	Delaware	-0.95	37.6	2.8%	33	-5.2%	48	-0.73	42	45.9%	38	229.3	9	17.2%	28	0.41	14
D	39	Hawaii	-1.01	36.8	5.3%	49	-6.3%	50	-2.04	51	22.5%	46	126.5	1	1.8%	1	2.70	1
D	40	Michigan	-1.27	33.1	4.1%	44	-4.3%	41	-1.02	44	55.4%	32	276.5	21	17.9%	29	-0.04	23
D	41	Massachusetts	-1.44	30.7	4.8%	48	-3.8%	37	-1.15	46	44.9%	39	329.0	38	8.6%	4	0.39	15
D	42	Pennsylvania	-1.45	30.6	3.9%	41	-4.8%	47	-1.05	45	50.7%	35	314.6	34	13.9%	15	0.01	21
D	43	Connecticut	-1.51	29.7	4.4%	45	-6.4%	51	-1.74	49	65.5%	23	308.7	32	14.7%	17	-0.01	22
D	44	Nevada	-1.57	28.8	2.4%	23	-1.0%	10	0.58	12	37.3%	42	391.4	51	19.5%	39	-1.14	48
D	45	Maryland	-1.64	27.9	3.2%	37	-3.8%	38	-0.51	38	20.4%	48	249.6	12	13.1%	14	0.63	10
F	46	Illinois	-2.28	18.8	4.7%	46	-4.4%	43	-1.29	47	37.1%	43	283.9	24	16.5%	22	0.02	20
F	47	California	-2.51	15.5	4.8%	47	-2.0%	21	-0.63	40	19.2%	50	270.4	18	18.8%	33	-0.07	27
F	48	New Mexico	-2.61	14.2	3.5%	38	-1.6%	15	0.00	29	34.0%	45	337.2	40	27.7%	50	-1.46	50
F-	49	New York	-2.94	9.6	5.6%	50	-4.4%	42	-1.63	48	55.1%	33	382.7	50	19.6%	40	-1.08	47
F-	50	District of Columbia	-3.30	4.3	2.3%	20	-2.6%	29	0.17	25	5.8%	51	371.2	48	20.5%	42	-1.07	46
F-	51	New Jersey	-3.61	0.0	5.8%	51	-4.7%	46	-1.81	50	37.7%	41	379.5	49	17.1%	24	-0.82	42

Economy

For our unemployment measure, we looked at the cumulative months of unemployment (total unemployed over the period divided by total labor force over the period) from April 2020 to December 2021 and for each state subtracted the period of the same measure from January 2019 to February 2020. That is the raw unemployment metric. Hawaii and Nevada came in last by far because of the overwhelming impact the global shutdown of tourism had on them, and energy-heavy states similarly had disproportionate unemployment rises with the collapse of global demand. Because we considered these industry factors independent of state performance, we adjusted for industry composition.

We used a regression model to perform the adjustment. Let y_s denote a health or economic outcome in state *s* during the pandemic, such as excess mortality or the number of points that the pandemic-average unemployment rate exceeded the pre-pandemic average. Let x_s denote a vector of industry composition (or health status) variables for state *s*, expressed as a deviation from the national average. In our baseline economic specification, the vector has two elements: the share of state employment mining (which includes energy) and the share in leisure and hospitality.

To adjust a pandemic outcome from the industry composition of its economy, we use the following multivariate linear regression equation.

$$y_s = \alpha + x_s\beta + e_s$$

where β is vector of coefficients, one coefficient for each of the share variables in x_s. Because the share variables and the regression residual have mean zero among the fifty states and DC, α is the national average outcome *y*. We interpret $x_s\beta$ as the part of the outcome explained by industry composition and $y_s - x_s\beta = \alpha + e_s$ as the outcome adjusted for industry (or health) composition. We estimate α and β using ordinary least squares in the pre-pandemic data for the fifty states and DC.

	Cumulative Unemployed-Months (April 2020 to December 2021)	Cumulative Labor-Force-Months (April 2020 to December 2021)	%	Rank	Cumulative Unemployed-Months (Jan 2019 to Feb 2020)	Cumulative Labor-Force-Months (Jan 2019 to Feb 2020)	%	Unemployment Increase	Rank	Adjusted Rank
51-state/DC avg								2.8%		
Montana	519,349	11,334,786	4.6%	6	279,895	7,527,550	3.7%	0.9%	3	1
Nebraska	684,708	21,565,597	3.2%	1	438,828	14,568,139	3.0%	0.2%	1	2
South Dakota	371,212	9,830,736	3.8%	3	196,166	6,477,568	3.0%	0.7%	2	3
Mississippi	1,835,668	26,512,368	6.9%	33	990,364	17,912,646	5.5%	1.4%	6	4
Idaho	813,371	18,915,121	4.3%	4	347,296	12,328,543	2.8%	1.5%	8	5
Utah	1,270,917	34,697,052	3.7%	2	577,231	22,581,818	2.6%	1.1%	4	6
Kentucky	2,343,329	41,914,571	5.6%	22	1,212,260	28,985,144	4.2%	1.4%	7	7
Georgia	5,564,863	107,207,198	5.2%	18	2,549,643	72,228,222	3.5%	1.7%	11	8
Vermont	296,549	6,731,875	4.4%	5	114,967	4,819,482	2.4%	2.0%	20	9
Missouri	3,289,818	64,197,135	5.1%	14	1,451,324	43,117,532	3.4%	1.8%	12	10
Arkansas	1,460,931	28,465,665	5.1%	15	689,265	19,110,983	3.6%	1.5%	9	11
Arizona	5,274,686	75,653,308	7.0%	34	2,401,553	49,648,985	4.8%	2.1%	21	12
Alabama	2,246,616	46,752,547	4.8%	9	946,744	31,309,443	3.0%	1.8%	14	13
South Carolina	2,721,430	50,251,348	5.4%	20	925,253	33,140,289	2.8%	2.6%	29	14
Florida	14,104,973	215,662,399	6.5%	26	4,744,373	144,922,002	3.3%	3.3%	38	15
Wisconsin	3,342,508	64,797,812	5.2%	17	1,430,581	43,259,906	3.3%	1.9%	18	16
North Carolina	6,463,168	104,611,466	6.2%	25	2,661,861	71,114,585	3.7%	2.4%	27	17
Minnesota	3,239,061	64,103,315	5.1%	13	1,404,516	43,334,868	3.2%	1.8%	16	18
New Hampshire	792,261	15,801,211	5.0%	12	288,053	10,829,487	2.7%	2.4%	24	19
District of Columbia	646,986	8,559,591	7.6%	39	308,738	5,826,814	5.3%	2.3%	23	20
Iowa	1,643,939	34,718,354	4.7%	8	693,383	24,272,058	2.9%	1.9%	19	21
Kansas	1,581,816	31,563,967	5.0%	11	664,839	20,922,600	3.2%	1.8%	17	22
Nevada	3,462,486	32,123,960	10.8%	51	853,380	22,003,346	3.9%	6.9%	50	23
Maine	761,937	14,172,318	5.4%	19	274,591	9,736,142	2.8%	2.6%	28	24
West Virginia	1,098,989	16,593,952	6.6%	28	563,110	11,184,292	5.0%	1.6%	10	25
Ohio	8,013,047	119,636,144	6.7%	30	3,516,166	81,836,637	4.3%	2.4%	25	26
Tennessee	4,280,242	69,334,335	6.2%	24	1,608,950	46,626,273	3.5%	2.7%	30	27
Wyoming	319,269	6,201,353	5.1%	16	160,919	4,148,976	3.9%	1.3%	5	28
Indiana	3,960,938	69,705,898	5.7%	23	1,546,954	47,315,290	3.3%	2.4%	26	29
Oklahoma	1,905,931	38,990,851	4.9%	10	805,433	25,846,665	3.1%	1.8%	13	30
Alaska	526,102	7,329,009	7.2%	37	266,820	4,945,890	5.4%	1.8%	15	31
Louisiana	3,206,051	43,267,999	7.4%	38	1,384,069	29,709,536	4.7%	2.8%	31	32
Delaware	703,988	10,215,894	6.9%	32	258,929	6,844,284	3.8%	3.1%	37	33
Oregon	2,982,265	44,915,297	6.6%	29	1,088,235	29,480,861	3.7%	2.9%	34	34
Virginia	4,941,467	89,844,440	5.5%	21	1,659,070	62,027,385	2.7%	2.8%	33	35
Washington	5,762,541	82,181,492	7.0%	35	2,303,713	54,854,093	4.2%	2.8%	32	36
Maryland	4,326,448	65,744,052	6.6%	27	1,600,648	45,817,553	3.5%	3.1%	36	37
New Mexico	1,598,991	19,865,163	8.0%	45	678,758	13,451,936	5.0%	3.0%	35	38
Rhode Island	904,548	11,351,772	8.0%	43	290,486	7,828,770	3.7%	4.3%	44	39
Colorado	4,538,910	66,411,807	6.8%	31	1,177,819	43,821,374	2.7%	4.1%	43	40
Pennsylvania	10,555,671	132,382,256	8.0%	44	4,134,996	90,995,406	4.5%	3.4%	39	41
Texas	21,110,486	295,627,511	7.1%	36	6,975,220	196,874,365	3.5%	3.6%	40	42
North Dakota	392,512	8,507,565	4.6%	7	137,596	5,721,861	2.4%	2.2%	22	43
Michigan	7,954,939	100,166,556	7.9%	42	2,809,991	69,222,941	4.1%	3.9%	41	44
Connecticut	2,948,906	38,243,558	7.7%	40	984,200	26,837,122	3.7%	4.0%	42	45
Illinois	11,182,770	130,613,869	8.6%	46	3,579,551	90,044,506	4.0%	4.6%	45	46
California	36,847,232	395,641,233	9.3%	49	11,356,271	271,197,610	4.2%	5.1%	47	47
Massachusetts	6,026,738	77,262,383	7.8%	41	1,617,409	52,898,679	3.1%	4.7%	46	48
Hawaii	1,426,810	13,549,518	10.5%	50	222,649	9,383,376	2.4%	8.2%	51	49
New York	17,976,927	194,395,130	9.2%	48	5,155,489	133,139,590	3.9%	5.4%	48	50
New Jersey	8,366,481	93,341,507	9.0%	47	2,227,198	63,430,519	3.5%	5.5%	49	51

In the unemployment rate change regression, the share of the state's employment in mining has a negative coefficient while the share in leisure and hospitality has a positive coefficient. The magnitude of the two coefficients were approximately equal.

The adjusted values answer the question "What if the state had the national-average industry composition, but everything else the same as it actually did?" just like a seasonal-adjustment answers the question "What if the month has the annual-average season but everything else the same as it actually did?" NV and HI have large negative

adjustments because their intensity in leisure and hospitality alone significantly elevated their pandemic unemployment rates. ND and WY have significant adjustments in the opposite direction.

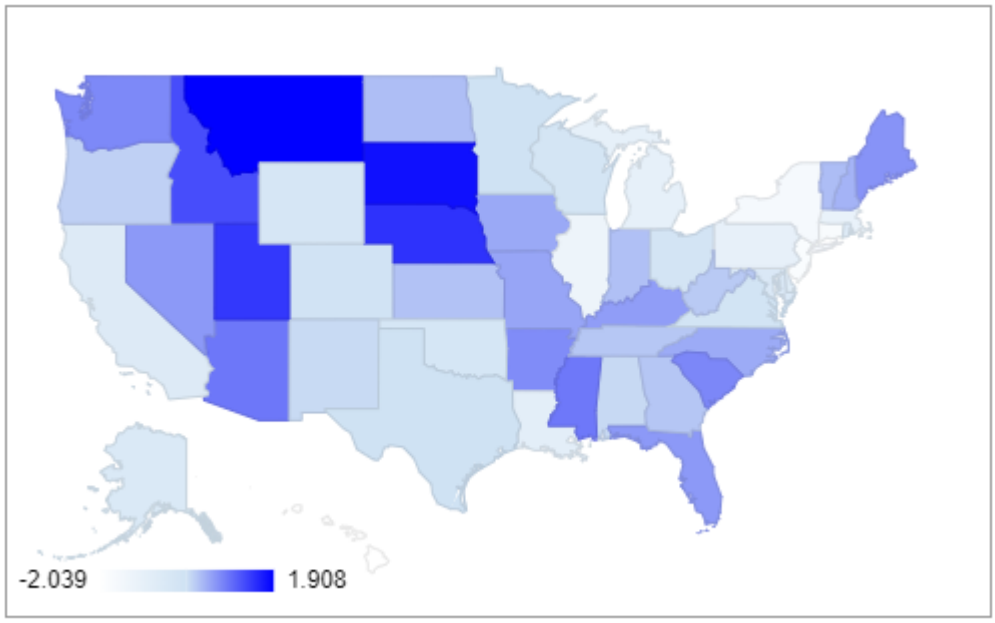
For our GDP by state component, we used the same regression method with the vector elements Mining, Oil and Gas, Accommodations and Food, and Arts and Entertainment. The estimated coefficients on all three shares were negative, especially for Accommodations and Food. NV and HI have large positive adjustments because their intensity in leisure and hospitality alone significantly reduced their real GDP.

				2019 GDP Share				2019 GDP Share, dev from avg		
	Pandemic GDP, relative to 2019-Q4	Rank	Adjusted Rank	Mining, Oil, Gas	Accommodations and Food	Arts and Entertainment	Ind-adj growth	Mining, Oil, Gas	Accommodations and Food	Arts and Entertainment
United States	-2.36%			2.6%	2.8%	1.1%				
51-state/DC avg	-2.6%			3.5%	3.1%	0.9%		0.0%	0.0%	0.0%
Alabama	-2.83%	30	34	1.3%	2.5%	0.4%	-3.6%	-2.2%	-0.6%	-0.6%
Alaska	-7.05%	50	45	23.6%	2.4%	0.6%	-4.5%	20.1%	-0.8%	-0.4%
Arizona	-0.38%	7	8	1.6%	3.3%	1.0%	-0.6%	-1.9%	0.1%	0.0%
Arkansas	-0.58%	9	13	1.0%	2.7%	0.5%	-1.3%	-2.5%	-0.4%	-0.5%
California	-1.34%	15	21	0.7%	2.7%	1.4%	-2.0%	-2.8%	-0.4%	0.5%
Colorado	-2.18%	25	17	6.8%	3.1%	1.4%	-1.7%	3.3%	0.0%	0.5%
Connecticut	-5.42%	45	51	0.1%	2.3%	0.9%	-6.4%	-3.4%	-0.8%	-0.1%
Delaware	-4.02%	41	48	0.0%	2.2%	0.6%	-5.2%	-3.5%	-1.0%	-0.4%
District of Columbia	-2.28%	27	29	0.0%	3.4%	0.9%	-2.6%	-3.5%	0.3%	0.0%
Florida	-1.62%	17	14	0.2%	4.1%	1.6%	-1.5%	-3.3%	1.0%	0.7%
Georgia	-2.74%	29	35	0.3%	2.5%	0.6%	-3.7%	-3.2%	-0.7%	-0.4%
Hawaii	-9.80%	51	50	0.1%	9.8%	1.3%	-6.3%	-3.4%	6.6%	0.4%
Idaho	0.55%	5	6	0.7%	2.9%	0.8%	-0.1%	-2.8%	-0.3%	-0.2%
Illinois	-3.62%	38	43	0.3%	2.6%	1.2%	-4.4%	-3.2%	-0.5%	0.2%
Indiana	-0.95%	12	20	0.4%	2.2%	1.0%	-2.0%	-3.1%	-0.9%	0.1%
Iowa	-0.47%	8	16	0.3%	2.1%	0.6%	-1.6%	-3.2%	-1.1%	-0.3%
Kansas	-1.34%	14	25	1.2%	2.1%	0.5%	-2.4%	-2.3%	-1.1%	-0.5%
Kentucky	-1.80%	20	26	1.2%	2.8%	0.5%	-2.4%	-2.3%	-0.3%	-0.4%
Louisiana	-5.92%	46	49	6.4%	2.8%	0.9%	-5.7%	2.9%	-0.4%	0.0%
Maine	-0.84%	10	9	0.1%	4.1%	1.0%	-0.8%	-3.4%	1.0%	0.1%
Maryland	-3.04%	32	38	0.1%	2.7%	0.9%	-3.8%	-3.4%	-0.4%	0.0%
Massachusetts	-3.05%	33	37	0.1%	2.8%	1.2%	-3.8%	-3.4%	-0.4%	0.2%
Michigan	-3.44%	35	41	0.4%	2.6%	0.8%	-4.3%	-3.1%	-0.6%	-0.2%
Minnesota	-2.57%	28	32	0.7%	2.2%	0.9%	-3.6%	-2.8%	-1.0%	-0.1%
Mississippi	-1.89%	21	18	1.5%	3.8%	0.5%	-1.9%	-2.0%	0.6%	-0.5%
Missouri	-1.71%	18	27	0.4%	2.8%	1.1%	-2.4%	-3.1%	-0.4%	0.2%
Montana	0.07%	6	3	4.8%	3.5%	1.2%	0.5%	1.3%	0.4%	0.3%
Nebraska	0.82%	4	7	0.2%	2.0%	0.5%	-0.4%	-3.3%	-1.2%	-0.4%
Nevada	-6.47%	48	10	2.8%	12.1%	3.1%	-1.0%	-0.7%	8.9%	2.2%
New Hampshire	-1.75%	19	22	0.2%	3.4%	1.7%	-2.0%	-3.3%	0.3%	0.7%
New Jersey	-3.63%	39	46	0.1%	2.2%	1.0%	-4.7%	-3.4%	-0.9%	0.0%
New Mexico	-3.08%	34	15	13.2%	3.2%	0.7%	-1.6%	9.7%	0.1%	-0.2%
New York	-3.68%	40	42	0.1%	2.7%	1.7%	-4.4%	-3.4%	-0.4%	0.8%
North Carolina	-1.15%	13	19	0.2%	2.7%	0.8%	-1.9%	-3.3%	-0.4%	-0.1%
North Dakota	-2.11%	22	5	22.4%	2.1%	0.3%	0.1%	18.9%	-1.0%	-0.6%
Ohio	-2.86%	31	36	1.3%	2.3%	1.0%	-3.7%	-2.1%	-0.8%	0.1%
Oklahoma	-6.33%	47	39	22.5%	2.3%	0.6%	-3.9%	19.0%	-0.8%	-0.4%
Oregon	-1.57%	16	23	0.1%	3.1%	0.9%	-2.1%	-3.4%	0.0%	0.0%
Pennsylvania	-4.03%	43	47	2.2%	2.2%	1.1%	-4.8%	-1.3%	-0.9%	0.2%
Rhode Island	-3.53%	37	33	0.0%	3.9%	1.0%	-3.6%	-3.5%	0.8%	0.0%
South Carolina	-0.86%	11	11	0.3%	3.7%	0.7%	-1.0%	-3.2%	0.6%	-0.3%
South Dakota	1.49%	1	1	0.3%	2.8%	0.6%	0.8%	-3.2%	-0.3%	-0.3%
Tennessee	-2.13%	23	24	0.3%	3.5%	2.0%	-2.3%	-3.2%	0.4%	1.1%
Texas	-2.25%	26	12	14.7%	2.3%	0.7%	-1.1%	11.2%	-0.8%	-0.3%
Utah	1.15%	3	2	2.7%	2.5%	0.9%	0.6%	-0.8%	-0.7%	-0.1%
Vermont	-4.02%	42	31	0.4%	5.1%	1.1%	-3.3%	-3.1%	2.0%	0.1%
Virginia	-2.14%	24	30	0.4%	2.5%	0.7%	-3.0%	-3.1%	-0.6%	-0.2%
Washington	1.20%	2	4	0.1%	2.5%	0.8%	0.3%	-3.4%	-0.6%	-0.2%
West Virginia	-4.29%	44	28	16.7%	2.9%	0.5%	-2.5%	13.2%	-0.3%	-0.4%
Wisconsin	-3.47%	36	44	0.3%	2.3%	0.8%	-4.5%	-3.2%	-0.8%	-0.1%
Wyoming	-6.93%	49	40	22.7%	2.9%	0.6%	-4.2%	19.2%	-0.3%	-0.3%

This table and map show the combined economic performance scores of the states in the pandemic period.

States/DC	Unemployment (Industry-Adjusted)	Rank	Z Score (inverted)	GDP (Industry-Adjusted)	Rank	Z Score	Economy Average (Z Scores)	Rank
Montana	0.2%	1	2.09	0.5%	3	1.72	1.91	1
South Dakota	0.7%	3	1.66	0.8%	1	1.87	1.77	2
Nebraska	0.6%	2	1.74	-0.4%	7	1.21	1.47	3
Utah	1.5%	6	1.05	0.6%	2	1.78	1.42	4
Idaho	1.5%	5	1.06	-0.1%	6	1.41	1.23	5
Arizona	2.0%	12	0.63	-0.6%	8	1.11	0.87	6
Mississippi	1.1%	4	1.32	-1.9%	18	0.40	0.86	7
South Carolina	2.0%	14	0.58	-1.0%	11	0.87	0.73	8
Washington	3.0%	36	-0.18	0.3%	4	1.60	0.71	9
Arkansas	2.0%	11	0.64	-1.3%	13	0.74	0.69	10
Maine	2.5%	24	0.25	-0.8%	9	1.01	0.63	11
Nevada	2.4%	23	0.28	-1.0%	10	0.87	0.58	12
Florida	2.1%	15	0.54	-1.5%	14	0.61	0.57	13
Kentucky	1.6%	7	0.96	-2.4%	26	0.12	0.54	14
Missouri	1.7%	10	0.83	-2.4%	27	0.11	0.47	15
Iowa	2.4%	21	0.33	-1.6%	16	0.54	0.44	16
North Carolina	2.2%	17	0.46	-1.9%	19	0.38	0.42	17
New Hampshire	2.3%	19	0.38	-2.0%	22	0.31	0.35	18
Vermont	1.7%	9	0.90	-3.3%	31	-0.39	0.26	19
North Dakota	4.0%	43	-1.00	0.1%	5	1.49	0.25	20
Indiana	2.6%	29	0.11	-2.0%	20	0.35	0.23	21
Kansas	2.4%	22	0.31	-2.4%	25	0.12	0.21	22
Georgia	1.6%	8	0.96	-3.7%	35	-0.60	0.18	23
Tennessee	2.5%	27	0.19	-2.3%	24	0.16	0.17	24
District of Columbia	2.3%	20	0.37	-2.6%	29	-0.03	0.17	25
West Virginia	2.5%	25	0.23	-2.5%	28	0.06	0.15	26
Oregon	2.9%	34	-0.09	-2.1%	23	0.27	0.09	27
Alabama	2.0%	13	0.58	-3.6%	34	-0.56	0.01	28
New Mexico	3.5%	38	-0.56	-1.6%	15	0.57	0.00	29
Minnesota	2.3%	18	0.41	-3.6%	32	-0.56	-0.07	30
Texas	4.0%	42	-0.99	-1.1%	12	0.84	-0.08	31
Colorado	3.8%	40	-0.83	-1.7%	17	0.52	-0.16	32
Virginia	2.9%	35	-0.14	-3.0%	30	-0.23	-0.19	33
Ohio	2.5%	26	0.19	-3.7%	36	-0.62	-0.21	34
Wisconsin	2.2%	16	0.48	-4.5%	44	-1.04	-0.28	35
Oklahoma	2.6%	30	0.10	-3.9%	39	-0.76	-0.33	36
Wyoming	2.6%	28	0.17	-4.2%	40	-0.89	-0.36	37
Maryland	3.2%	37	-0.32	-3.8%	38	-0.69	-0.51	38
Alaska	2.8%	31	0.00	-4.5%	45	-1.06	-0.53	39
California	4.8%	47	-1.60	-2.0%	21	0.34	-0.63	40
Rhode Island	3.8%	39	-0.81	-3.6%	33	-0.56	-0.68	41
Delaware	2.8%	33	-0.03	-5.2%	48	-1.44	-0.73	42
Louisiana	2.8%	32	-0.02	-5.7%	49	-1.73	-0.88	43
Michigan	4.1%	44	-1.10	-4.3%	41	-0.94	-1.02	44
Pennsylvania	3.9%	41	-0.88	-4.8%	47	-1.22	-1.05	45
Massachusetts	4.8%	48	-1.64	-3.8%	37	-0.67	-1.15	46
Illinois	4.7%	46	-1.56	-4.4%	43	-1.01	-1.29	47
New York	5.6%	50	-2.27	-4.4%	42	-1.00	-1.63	48
Connecticut	4.4%	45	-1.33	-6.4%	51	-2.15	-1.74	49
New Jersey	5.8%	51	-2.44	-4.7%	46	-1.17	-1.81	50
Hawaii	5.3%	49	-2.02	-6.3%	50	-2.06	-2.04	51

State Pandemic Economic Performance Index



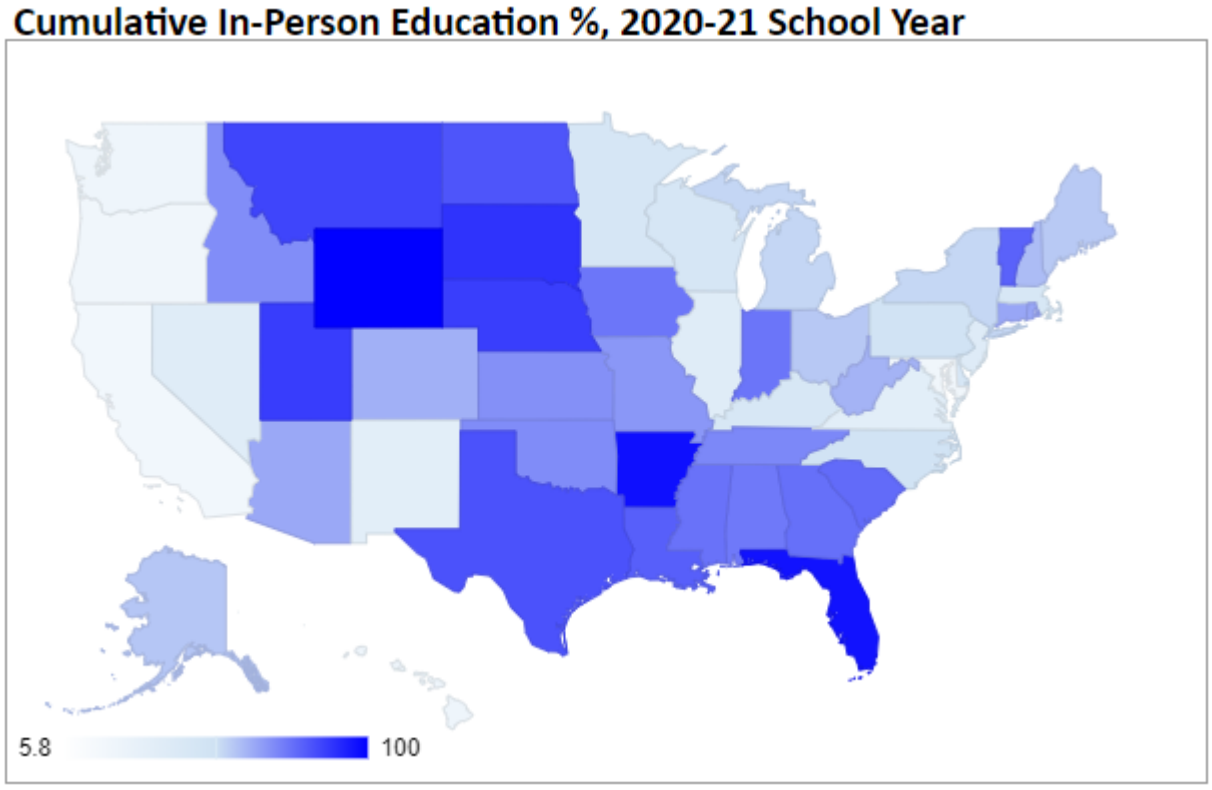
Source: Committee to Unleash Prosperity

Education

School closures may ultimately prove to be the most costly policy decision of the pandemic era in both economic and mortality terms. One study found that school closures at the end of the previous 2019-2020 school year are associated with 13.8 million years of life lost. An NIH analysis found that life expectancy for high school graduates is 4 to 6 years longer than high school dropouts. The OECD estimates that learning losses from pandemic era school closures could cause a 3% decline in lifetime earnings, and that a loss of just one third of a year of learning has a long-term economic impact of $14 trillion.

Unlike mortality or economic outcomes, closing public schools was entirely under the control of policymakers. Almost all private schools were open.

This ranking and map from the tracking company Burbio show the cumulative share of in-person instruction in each state, with part-time hybrid schedules counting at half weight.



Source: Burbio

Cumulative In-Person Education %

Rank	State	Average
1	Wyoming	100.0
2	Arkansas	96.8
3	Florida	96.2
4	South Dakota	89.3
5	Utah	87.3
6	Nebraska	87.0
7	Montana	85.7
8	Texas	83.0
9	North Dakota	82.2
10	Louisiana	80.1
11	Vermont	79.5
12	South Carolina	77.6
13	Georgia	76.7
14	Mississippi	76.2
15	Indiana	75.6
16	Iowa	75.4
17	Alabama	74.8
18	Tennessee	71.7
19	Oklahoma	70.8
20	Idaho	70.6
21	Kansas	69.9
22	Missouri	68.6
23	Connecticut	65.5
24	Rhode Island	65.4
25	Arizona	64.9
26	Colorado	63.3
27	West Virginia	62.7
28	New Hampshire	60.9
29	Alaska	58.8
30	Ohio	58.3
31	Maine	58.1
32	Michigan	55.4
33	New York	55.1
34	North Carolina	50.8
35	Pennsylvania	50.7
36	Wisconsin	46.5
37	Minnesota	46.0
38	Delaware	45.9
39	Kentucky	44.9
39	Massachusetts	44.9
41	New Jersey	37.7
42	Nevada	37.3
43	Illinois	37.1
44	Virginia	34.2
45	New Mexico	34.0
46	Hawaii	22.5
47	Washington	22.3
48	Maryland	20.4
49	Oregon	20.2
50	California	19.2
51	District of Columbia	5.8

Source: Burbio

Mortality

There is no clear pattern in which states had high and low mortality, although we note one major study from Rand Corporation researchers found that lockdowns *increased* all-cause mortality to a statistically significant extent.

Whether or not political leaders can be considered responsible for mortality outcomes is therefore unclear, although advocates of a "focused protection" strategy have suggested that sheltering the high-risk could reduce overall mortality – an approach adopted by Florida.

Because COVID infection mortality risk is extremely age-related -- 8700 times higher in age 85+ than in 5 to 17, according to the CDC – we applied an age-adjustment to the number of observed deaths in each age group to bring the numbers in line with a standard U.S. population. Because CDC suppresses totals of less than 10, we combined ages less than 35, but because there are few deaths in that age range it should not affect the accuracy of the adjustment.

States Ranked (Low to High), COVID-19-Associated Death Rates Reported to CDC, Age-Adjusted

Updated: March 9, 2022

Rank Raw	Rank Age-adjusted		Per 100K 0-34	Per 100K 35-44	Per 100K 45-54	Per 100K 55-64	Per 100K 65-74	Per 100K 75-84	Per 100K 85 +	Raw Total Per 100K	Age-adjusted COVID deaths/100K
1	**1**	Vermont	5.1	15.2	38.3	56.6	131.4	439.6	1,511.5	92.2	81.7
2	**2**	Hawaii	17.1	36.8	69.8	130.0	211.4	311.9	681.0	92.9	87.9
7	**3**	Maine	12.3	27.4	66.3	138.7	274.3	800.9	2,105.6	173.1	144.7
5	**4**	Oregon	14.6	32.3	84.6	180.6	303.6	771.4	2,146.8	157.4	156.2
8	**5**	New Hampshire	8.3	18.8	47.3	103.2	298.3	896.5	2,939.8	174.6	158.9
4	**6**	Washington	14.4	33.1	82.4	168.7	349.6	811.3	2,269.9	149.1	163.5
3	**7**	Utah	19.6	48.2	117.7	232.8	476.8	1,030.2	2,641.5	146.1	211.3
6	**8**	Alaska	26.5	59.1	133.0	231.6	480.1	1,103.4	2,384.5	160.2	216.3
10	**9**	Minnesota	13.8	29.6	82.5	186.8	417.4	1,202.0	3,627.8	218.3	218.7
9	**10**	Virginia	16.1	35.5	97.8	229.6	507.1	1,168.1	3,281.5	214.8	228.1
15	**11**	Wisconsin	16.3	37.5	105.0	202.8	486.6	1,272.4	3,622.0	244.3	235.9
18	**12**	Massachusetts	10.6	21.8	65.9	176.7	464.8	1,379.3	4,574.1	258.3	245.6
14	**13**	Nebraska	18.6	41.4	119.3	240.8	547.0	1,334.5	3,485.8	243.9	250.4
16	**14**	North Carolina	23.3	56.1	132.3	289.9	570.3	1,265.2	3,208.9	246.0	255.6
12	**15**	California	25.4	57.8	148.8	318.4	589.5	1,221.3	2,906.8	231.1	256.1
11	**16**	Colorado	18.7	39.8	121.7	248.0	519.4	1,360.6	3,797.8	218.7	256.4
17	**17**	Maryland	21.3	46.8	119.6	254.8	565.2	1,365.2	3,517.8	248.2	258.2
22	**18**	Delaware	18.9	39.7	127.8	254.7	528.4	1,361.7	3,780.8	282.3	258.7
28	**19**	Florida	35.7	78.4	173.6	338.3	596.5	1,191.2	2,756.5	309.4	265.1
26	**20**	Connecticut	14.7	33.6	84.6	219.8	526.2	1,418.7	4,622.7	296.9	265.8
20	**21**	Illinois	21.1	47.3	120.6	270.6	606.9	1,405.3	3,705.4	264.8	270.2
21	**22**	Wyoming	22.5	45.0	128.3	296.2	593.9	1,437.1	3,622.7	268.6	273.4
24	**23**	Iowa	16.5	41.0	112.4	258.6	555.7	1,496.1	4,238.4	293.2	275.0
19	**24**	Idaho	16.9	45.3	142.1	283.0	610.9	1,498.2	4,188.9	263.6	287.1
30	**25**	Montana	24.1	62.1	152.9	315.3	624.4	1,539.2	3,744.8	311.6	292.4
36	**26**	Rhode Island	13.1	30.0	88.7	227.9	626.3	1,600.0	5,249.1	331.6	297.8
29	**27**	Michigan	24.2	58.7	159.4	315.7	686.2	1,551.1	3,762.2	309.9	299.9
25	**28**	Kansas	22.4	57.5	155.7	310.6	652.1	1,595.8	3,935.1	295.5	300.2
41	**29**	West Virginia	26.5	67.1	186.0	345.6	723.3	1,552.0	3,393.7	346.0	305.4
42	**30**	Pennsylvania	19.6	47.2	133.9	296.6	679.0	1,637.5	4,581.0	350.4	310.9
13	**31**	District of Columbia	26.8	58.4	220.1	500.0	874.8	1,319.9	2,449.1	239.2	312.7
31	**32**	Missouri	25.4	61.9	160.9	347.1	713.2	1,610.8	3,999.2	322.2	315.5
34	**33**	South Dakota	21.6	48.9	154.7	286.6	681.6	1,721.9	4,809.2	329.6	322.4
33	**34**	South Carolina	32.4	79.2	185.7	375.3	750.5	1,590.8	3,741.5	328.0	325.0
35	**35**	North Dakota	21.2	54.8	164.6	328.1	712.1	1,842.2	4,755.0	331.0	337.4
23	**36**	Georgia	34.1	79.7	184.2	401.5	813.0	1,733.1	3,639.1	289.6	340.2
45	**37**	Ohio	23.3	57.1	145.9	339.3	773.7	1,883.1	4,658.3	355.6	344.0
43	**38**	New Jersey	25.0	56.1	149.7	351.0	763.9	1,816.1	4,780.8	353.0	344.7
47	**39**	New York	24.1	56.6	155.5	361.9	799.0	1,832.4	4,556.8	360.3	346.3
39	**40**	Kentucky	27.7	69.3	178.6	391.1	810.0	1,821.0	4,250.3	340.4	350.4
32	**40**	Louisiana	36.1	83.3	211.5	415.9	841.0	1,766.4	3,598.1	326.8	350.4
40	**42**	New Mexico	62.6	151.2	295.3	453.5	734.4	1,413.7	3,298.0	343.9	352.0
38	**43**	Indiana	21.9	52.9	149.5	352.3	779.4	1,915.7	4,917.3	337.3	352.3
46	**44**	Arizona	44.3	101.4	242.4	468.4	822.6	1,623.3	3,359.7	356.0	353.2
44	**45**	Arkansas	35.5	85.9	199.4	427.0	824.8	1,750.9	3,983.3	354.1	355.8
37	**46**	Nevada	37.3	87.2	239.5	443.2	873.4	1,793.5	3,743.0	335.2	365.9
48	**47**	Tennessee	37.6	89.9	229.5	450.8	898.9	1,861.5	3,942.0	362.6	376.1
49	**48**	Alabama	41.1	104.0	245.0	482.1	918.3	1,793.2	3,731.5	376.0	379.6
27	**49**	Texas	40.8	97.9	239.9	485.5	947.3	1,877.5	3,957.4	307.0	390.2
50	**50**	Oklahoma	36.1	90.3	245.1	473.1	955.2	1,992.7	4,467.4	377.4	402.9
51	**51**	Mississippi	50.7	125.4	276.6	551.4	1,067.7	2,176.1	4,567.2	425.9	450.2
		United States								**290.5**	**290.5**

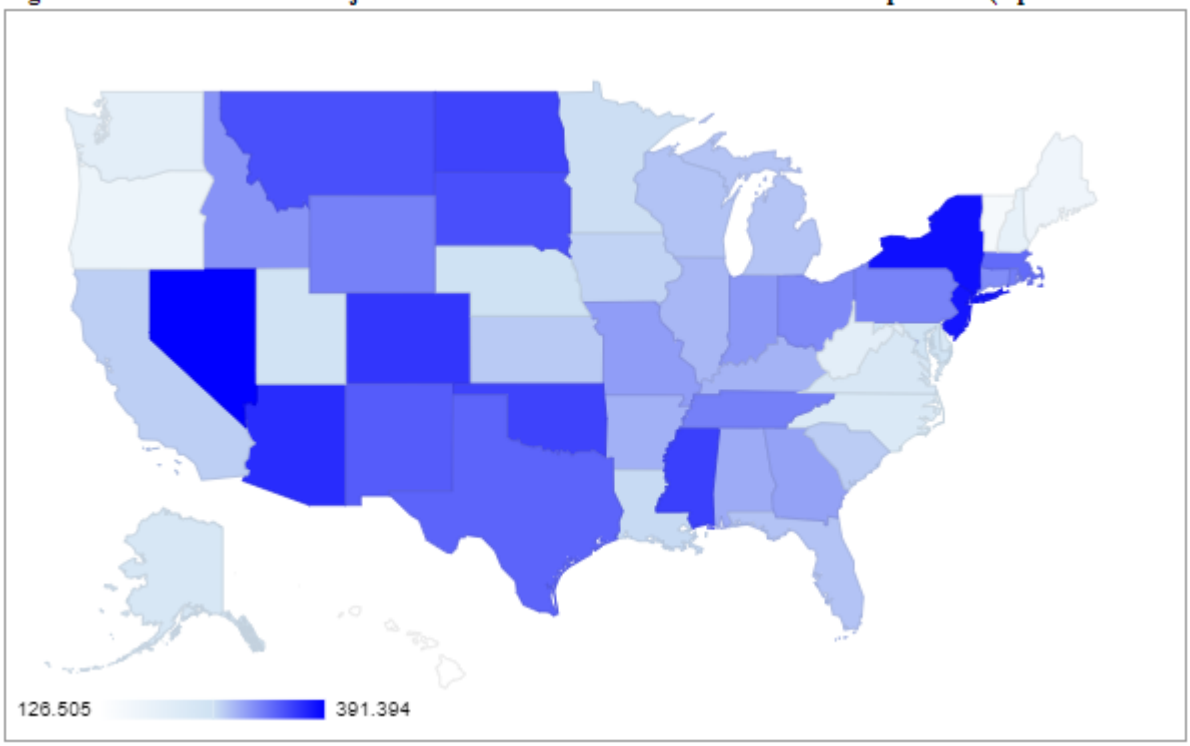
Note: North Carolina appears to report deaths substantially more slowly than other states, and can therefore be expected to move down these rankings as data becomes more complete.

To further adjust these numbers for substantial differences in metabolic health across states, we applied the same regression methodology we used in the economic section to the age-standardized rates above using CDC-reported prevalence of obesity and diabetes, the conditions most strongly correlated with COVID-associated deaths.

The adjusted values answer the question "What if every state had the national-average prevalence of diabetes and obesity?" The estimated coefficients on obesity and diabetes prevalence were both positive, although the diabetes coefficient was almost triple the obesity coefficient. The adjustments were negative in WV and most of the southern states.

NV, NY, NJ, and DC were the four states with the highest metabolic-adjusted mortality, even though none is in the top four without the adjustment. The six states with lowest mortality – HI, VT, ME, OR, NH, and WA – are the same regardless of metabolic adjustment.

Age and Metabolic Health Adjusted COVID-Associated Deaths Per 100K Population (Updated March 9)



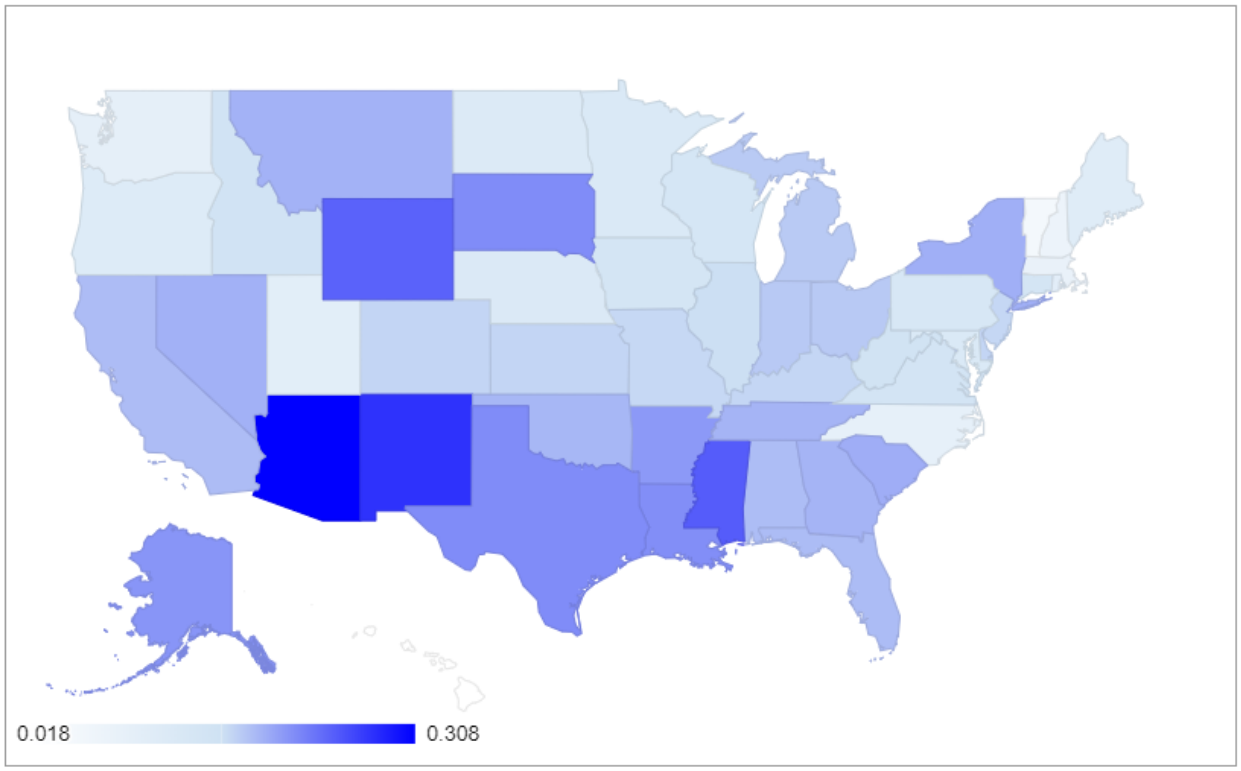
Source: Committee to Unleash Prosperity

State	Age-adjusted COVID deaths/100K	Obesity prev	Diabetes	Obesity Deviation from Mean	Diabetes Deviation from Mean	Age and Metabolic-health adjusted deaths/100K	Rank
Hawaii	87.9	24.5	10.3	-7.6	0.4	126.5	1
Vermont	81.7	26.3	7.6	-5.8	-2.3	155.5	2
Maine	144.7	31	8.7	-1.1	-1.2	171.8	3
Oregon	156.2	28.1	10	-4.0	0.1	178.5	4
New Hampshire	158.9	29.9	8.7	-2.2	-1.2	192.5	5
Washington	163.5	28	9	-4.1	-0.9	203.4	6
West Virginia	305.4	39.1	13.4	7.0	3.5	204.4	7
North Carolina	255.6	33.6	11	1.5	1.1	228.1	8
Delaware	258.7	36.5	10.1	4.4	0.2	229.3	9
Virginia	228.1	32.2	9.5	0.1	-0.4	234.5	10
Alaska	216.3	31.9	8.7	-0.2	-1.2	238.0	11
Maryland	258.2	31	10.8	-1.1	0.9	249.6	12
Utah	211.3	28.6	8.7	-3.5	-1.2	252.7	13
Nebraska	250.4	34	8.8	1.9	-1.1	257.9	14
Minnesota	218.7	30.7	7.9	-1.4	-2.0	261.2	15
Louisiana	350.4	38.1	12.9	6.0	3.0	263.9	16
Iowa	275	36.5	8.8	4.4	-1.1	267.6	17
California	256.1	30.3	9.7	-1.8	-0.2	270.4	18
South Carolina	325	36.2	11.6	4.1	1.7	271.9	19
Kansas	300.2	35.3	10.4	3.2	0.5	272.8	20
Michigan	299.9	35.2	10.2	3.1	0.3	276.5	21
Florida	265.1	28.4	10.5	-3.7	0.6	277.1	22
Wisconsin	235.9	32.3	7.4	0.2	-2.5	277.3	23
Illinois	270.2	32.4	9	0.3	-0.9	283.9	24
Kentucky	350.4	36.6	12.1	4.5	2.2	286.4	25
Arkansas	355.8	36.4	12.4	4.3	2.5	287.9	26
Alabama	379.6	39	12.7	6.9	2.8	291.1	27
Georgia	340.2	34.3	11.7	2.2	1.8	296.7	28
Missouri	315.5	34	10.2	1.9	0.3	299.2	29
Indiana	352.3	36.8	11.2	4.7	1.3	302.4	30
Idaho	287.1	31.1	9.2	-1.0	-0.7	305.1	31
Connecticut	265.8	29.2	8.4	-2.9	-1.5	308.7	32
Ohio	344	35.5	10.7	3.4	0.8	310.3	33
Pennsylvania	310.9	31.5	9.9	-0.6	0.0	314.6	34
Wyoming	273.4	30.7	7.9	-1.4	-2.0	315.9	35
Tennessee	376.1	35.6	12.2	3.5	2.3	316.3	36
Rhode Island	297.8	30.1	9.4	-2.0	-0.5	318.4	37
Massachusetts	245.6	24.4	7.7	-7.7	-2.2	329.0	38
Texas	390.2	35.8	12	3.7	2.1	332.6	39
New Mexico	352	30.9	11.2	-1.2	1.3	337.2	40
Montana	292.4	28.5	8.1	-3.6	-1.8	344.6	41
South Dakota	322.4	33.2	8.2	1.1	-1.7	344.9	42
Oklahoma	402.9	36.4	11.4	4.3	1.5	352.0	43
North Dakota	337.4	33.1	8.7	1.0	-1.2	352.0	44
Mississippi	450.2	39.7	12.9	7.6	3.0	354.1	45
Colorado	256.4	24.2	6.6	-7.9	-3.3	359.7	46
Arizona	353.2	30.9	9.6	-1.2	-0.3	365.6	47
District of Columbia	312.7	24.3	9.2	-7.8	-0.7	371.2	48
New Jersey	344.7	27.7	9.4	-4.4	-0.5	379.5	49
New York	346.3	26.3	9.8	-5.8	-0.1	382.7	50
Nevada	365.9	28.7	9.6	-3.4	-0.3	391.4	51
AVG	286.2	32.1	9.9	0.0	0.0	286.2	

Our second mortality metric is all-cause excess death expressed as a percentage of expected death, which is widely considered the most accurate measure of pandemic impact because it is not subject to ascertainment bias. It also captures the near-term mortality effects of lockdown policies, such as higher drug and alcohol deaths, and differences in underlying health by being measured relative to the baseline.

We used figures provided by USMortality.com, which has full details publicly available. Its estimates are based on CDC data. To reduce the effect of differential reporting lag, we removed the most recent four weeks of incomplete data.

Age-Adjusted Excess All-Cause Mortality as % of Baseline
(Weeks ending 3/11/2020 to 1/29/2022, as of 3/9/2022)

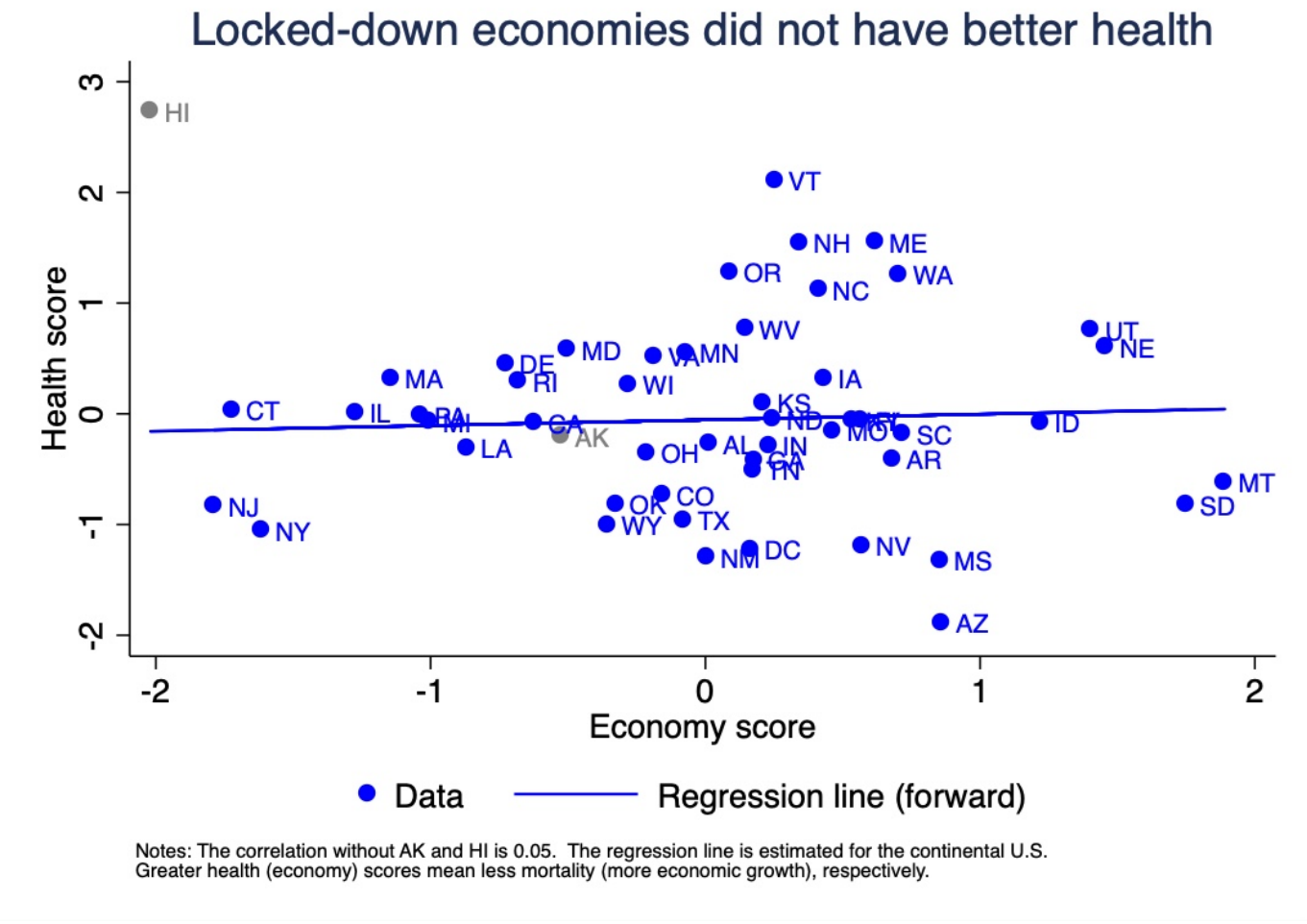


Source: USMortality.com

State	Baseline	Excess	%	Rank
Hawaii	1,048	19.4	1.8%	1
Vermont	1,193	63.8	5.3%	2
New Hampshire	1,270	97.3	7.7%	3
Massachusetts	1,302	112.5	8.6%	4
North Carolina	1,508	143.5	9.5%	5
Washington	1,303	126.5	9.7%	6
Utah	1,386	146.2	10.6%	7
Rhode Island	1,302	138.7	10.7%	8
Maine	1,371	158.4	11.5%	9
Oregon	1,362	164.6	12.1%	10
North Dakota	1,352	167.5	12.4%	11
Nebraska	1,361	174.6	12.8%	12
Minnesota	1,250	163.0	13.0%	13
Maryland	1,360	177.9	13.1%	14
Pennsylvania	1,483	206.6	13.9%	15
Wisconsin	1,384	199.8	14.4%	16
Connecticut	1,228	180.5	14.7%	17
Iowa	1,375	204.8	14.9%	18
Virginia	1,352	205.6	15.2%	19
Idaho	1,341	209.8	15.6%	20
West Virginia	1,731	272.6	15.8%	21
Illinois	1,338	221.3	16.5%	22
Missouri	1,623	275.2	17.0%	23
New Jersey	1,254	213.9	17.1%	24
Kentucky	1,762	302.1	17.1%	25
Kansas	1,418	243.6	17.2%	26
Colorado	1,287	221.2	17.2%	27
Delaware	1,320	227.2	17.2%	28
Michigan	1,482	265.3	17.9%	29
Ohio	1,607	288.0	17.9%	30
Indiana	1,615	289.9	18.0%	31
Alabama	1,723	322.4	18.7%	32
California	1,184	222.1	18.8%	33
Florida	1,294	243.5	18.8%	34
Oklahoma	1,668	318.9	19.1%	35
Georgia	1,527	294.8	19.3%	36
Tennessee	1,797	347.2	19.3%	37
Montana	1,336	259.9	19.5%	38
Nevada	1,486	289.3	19.5%	39
New York	1,192	234.1	19.6%	40
South Carolina	1,553	306.6	19.7%	41
District of Columbia	1,550	317.3	20.5%	42
Arkansas	1,666	350.4	21.0%	43
Alaska	1,176	250.8	21.3%	44
Louisiana	1,679	365.2	21.8%	45
Texas	1,429	312.8	21.9%	46
South Dakota	1,301	284.8	21.9%	47
Wyoming	1,153	283.0	24.5%	48
Mississippi	1,780	443.5	24.9%	49
New Mexico	1,371	379.2	27.7%	50
Arizona	1,303	402.0	30.8%	51

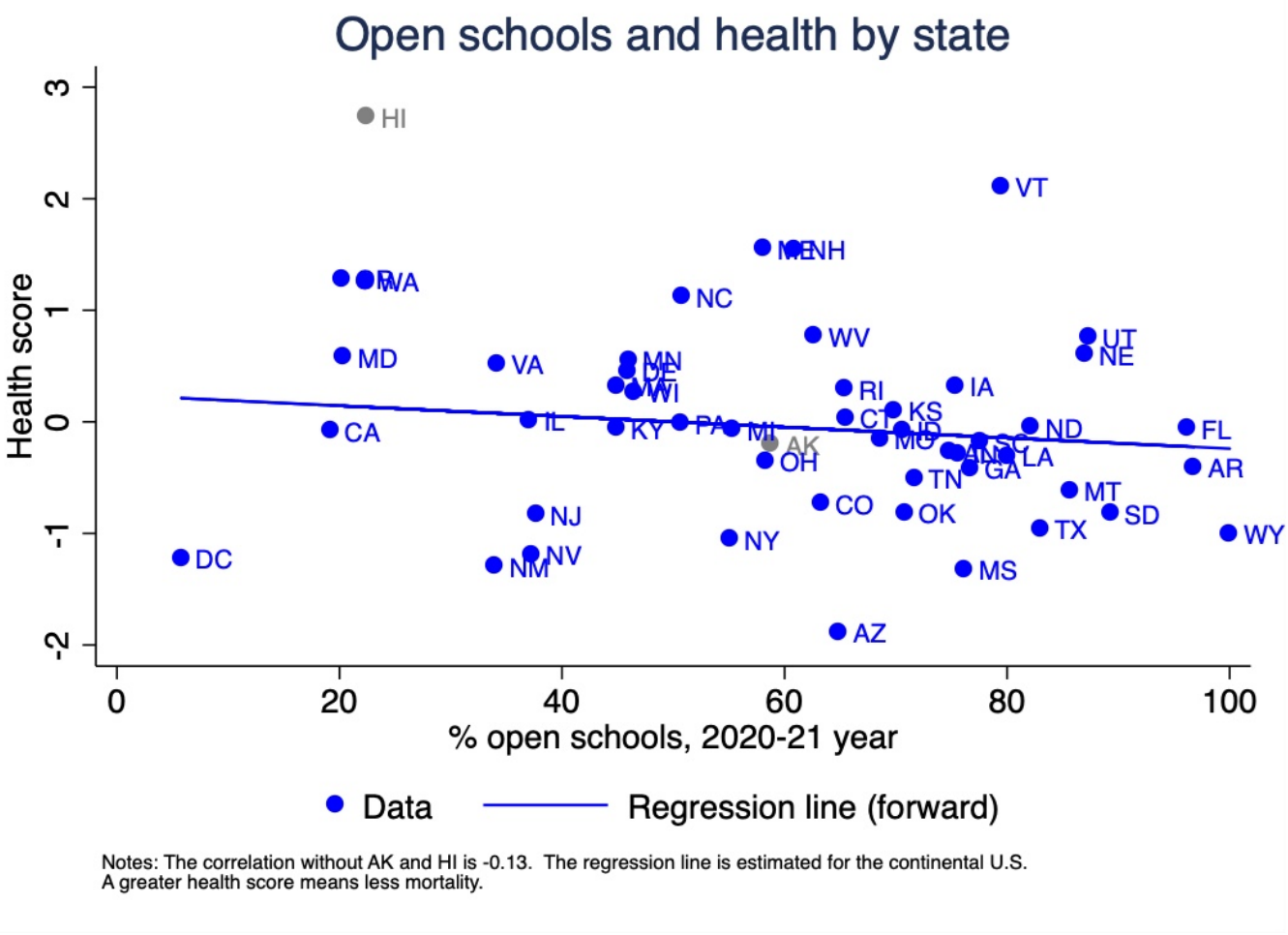
The Relationship Between Mortality, Education, and Economy Scores

Excluding the geographically unusual cases of Hawaii and Alaska to focus on the continental U.S., there is no apparent relationship between reduced economic activity during the pandemic and our composite mortality measure.



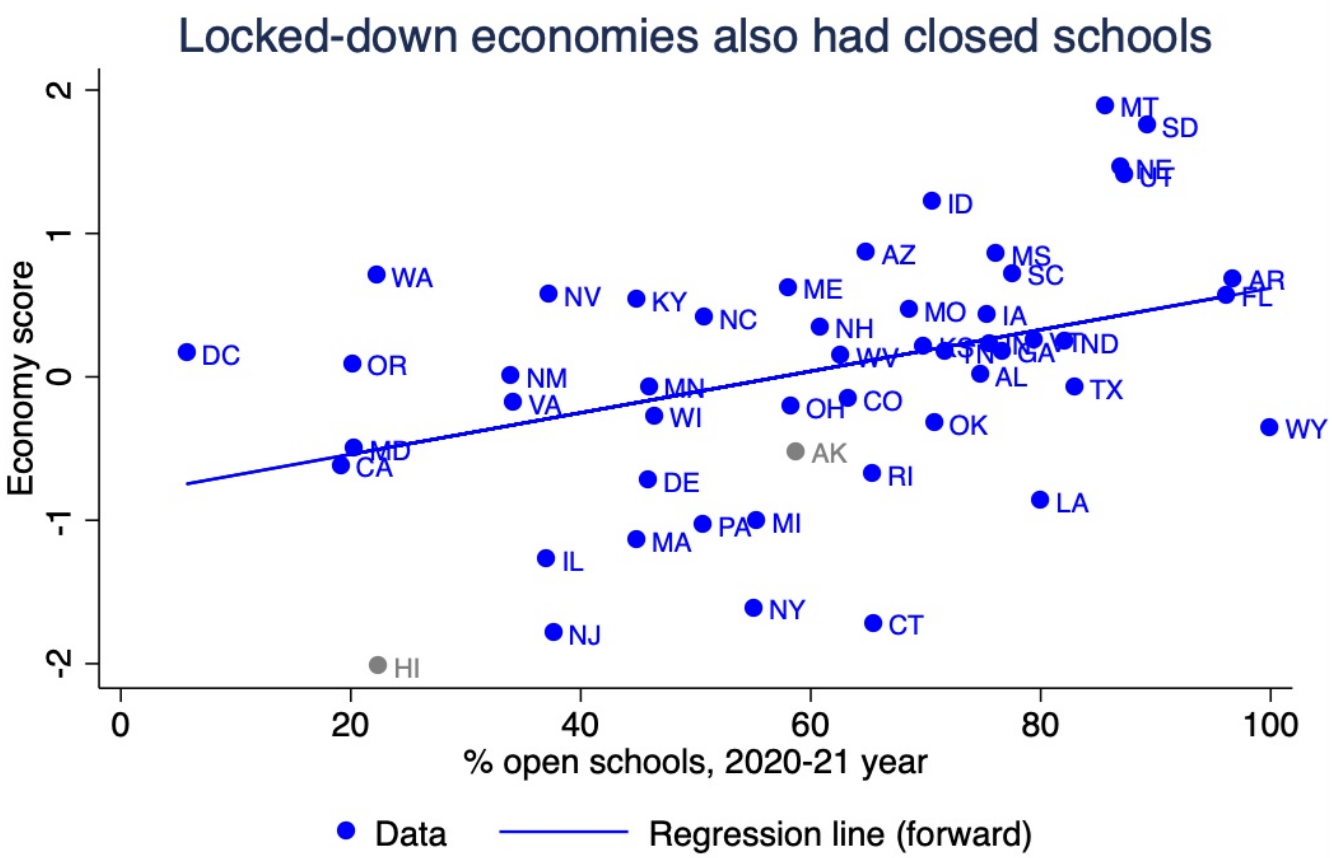
Notes: The correlation without AK and HI is 0.05. The regression line is estimated for the continental U.S. Greater health (economy) scores mean less mortality (more economic growth), respectively.

School closures did have a moderate correlation with our mortality measure, but based on the literature we do not believe this relationship was causal.



Notes: The correlation without AK and HI is -0.13. The regression line is estimated for the continental U.S.
A greater health score means less mortality.

Unsurprisingly, there was a strong relationship between the states that had poor economic performance and closed schools – the lockdown states.



Notes: The correlation without AK and HI is 0.39. The regression line is estimated for the continental U.S.
A greater economy score means more economic growth.

Conclusions

Pandemic mortality was greater in states where obesity, diabetes, and old age were more prevalent before the pandemic. Economic activity was less in states that had been intensive in, especially, accommodations and food. Still, much residual variation in both mortality and economic activity remains even after controlling for these factors because the 50 states and DC took very different approaches to confronting the Covid pandemic.

Three states stand out as having combined scores well above the others: Utah, Nebraska, and Vermont. They were substantially above average in all three categories. Six more states followed, including Montana and South Dakota almost two standard deviations above the average in terms of economy but 0.8 to 1.0 below in terms of mortality (i.e., higher death rates). New Hampshire and Maine were about 1.5 standard deviations above average on mortality while also somewhat above average economically. Although sometimes criticized as having policies that were "too open," Florida proved to have average mortality while maintaining a high level of economic activity and 96 percent open schools.[2]

While we combined the three categories using z-scores, future research could consider weights reflecting revealed preference. Philipson and Sun's (2020) international comparisons weight economy and mortality based on the value of a statistical life, which is founded on revealed preference studies. As detailed pandemic-era migration data become available, they could also help inform how the pandemic changed the quality of life by state. As a teaser, we

[2] The sixth state in the score group is Arkansas, with economy (health) somewhat above (below) average, respectively, but also 97 percent open schools.

note that the four states with the most negative per-capita rates of net migration from July 1, 2020 to July 1, 2021 – DC, NY, IL, and CA – were all in the bottom six in terms of our composite scores (U.S. Census Bureau 2021).

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