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# The Evolution of US State Economic Freedom during the Pandemic's Second Year

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## Abstract

This article updates a measure of lockdown regulatory freedom for 2021 and adjusts the economic freedom scores of US states—as measured in the Economic Freedom of North America index—to account for how lockdown regulations affected economic freedom. We also use the measure to assess how overall economic freedom evolved from the onset of the COVID-19 pandemic through 2021. When scores are not adjusted for lockdown regulations, average economic freedom across the fifty states appears essentially unchanged from 2019 through 2021. In contrast, our lockdown-adjusted freedom scores reveal that average economic freedom plunged in 2020 and while freedom increased in 2021, the increase was insufficient to offset the substantial decline experienced in 2020.

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*JEL Codes:* D70, I18, H10

*Keywords:* economic freedom, pandemic, COVID-19, lockdowns

## I. Introduction

In the wake of the COVID-19 pandemic, governments swiftly implemented an array of novel regulatory lockdown measures that varied significantly across jurisdictions at both the national and state levels (Miozzi and Powell 2023a, 2023b). These pandemic regulations decreased economic freedom by restricting the ability to engage in market transactions and the terms on which exchange could take place. However, these unprecedented regulations were not captured in existing measures of economic freedom precisely because they were unprecedented.

Miozzi and Powell (2023a) were the first to measure how various pandemic-related regulatory approaches affected global economic

freedom in 2020. While these regulations were scaled back in 2021, they continued to vary significantly around the world (Miozzi and Powell 2024). Following the same approach, Miozzi and Powell (2023b) more accurately measured state-level economic freedom across the US during 2020 by merging COVID-19 lockdown data with the Economic Freedom of North America (EFNA) index from Stansel et al. (2023).

We directly follow Miozzi and Powell's (2023b) methods to measure state-level lockdown regulations and adjust 2021 economic freedom scores to account for these regulations. We also analyze how state-level economic freedom evolved over the course of the pandemic and find that the gains in economic freedom we measure in 2021 were insufficient to counterbalance the substantial decline experienced in 2020.

Economic freedom is positively correlated with desirable developmental outcomes in both direction (Hall and Lawson 2014; Lawson 2022) and magnitude (Lawson, Miozzi, and Tuszynski 2024) from over 1,300 surveyed papers. State-level economic freedom is positively correlated with economic growth (Melton, Pearson, and Vernon 2021; Ihlenfeld, Hall, and Zhou 2022), growth in capital income (Murphy 2016), upward income mobility (Dean and Geloso 2021; Callais and Geloso 2023), health (Callais et al. 2024), and institutional quality and reform (Sobel 2008; Bolen 2019; Murphy 2020). Regardless of what one believes about the health merits of lockdown regulations, these regulations did decrease economic freedom, and the large body of literature on economic freedom indicates that such regulations entail a significant trade-off with a wide variety of developmental outcomes.

The pandemic has already inspired a large literature, and several symposia, such as those in the *Southern Economic Journal* (Boettke and Powell 2021) and *Public Choice* (Furton, Rizzo, and Harper 2023), analyzing the justification (Leeson and Rouanet 2021; Leeson and Thompson 2023), determinants (McCannon and Hall 2021; McCannon 2021; Hebert and Curry 2022; Koppl 2023; McCannon and Wilson 2023; Miozzi and Powell 2023c), and subsequent health (Abouk and Heydari 2021; Courtemanche et al. 2020; Fang, Wang, and Yang 2020; Hsiang et al. 2020; Nguyen et al. 2021) and economic (Bentkowska 2021; Cachanosky et al. 2021; Dingle and Nieman 2020; Fairlie 2020; Greenstone and Nigam 2020; Gupta et al. 2020; Murphy 2024; Redford and Dills 2021; Kolm 2024) effects of COVID-19 regulations.

We contribute to this literature by extending Miozzi and Powell's (2023b) methodology to 2021, which creates a comprehensive data set that consistently measures state-level economic freedom while accounting for COVID-19 regulations throughout the pandemic. This measure will provide data for future research measuring the trade-offs associated with pandemic regulations.

Section 2 describes our data and adjustment methods. Section 3 discusses the impact lockdown regulations had on the relative economic freedom ranking of US states in 2021 and how state-level economic freedom evolved throughout the pandemic. A final section concludes.

## II. Data and Adjustment Methods

Our data come from two primary sources: the EFNA index, by Stansel et al. (2023), and Our World in Data's COVID-19 Stringency Index, developed by Hale et al. (2021). The EFNA index assesses economic freedom across the Canadian provinces, Mexican states, and US states. It evaluates ten variables across three broad areas—Government Spending, Taxes, and Regulation—each carrying equal weight in determining a state's economic freedom score. We use the 2023 EFNA report, which contains data for economic freedom in 2021.

The COVID-19 Stringency Index provides daily scores reflecting the stringency of lockdown measures for each US state, beginning in 2020. It contains thirteen pandemic-response indicators of nonpharmaceutical interventions. However some of these indicators do not measure restrictions on economic freedom, so our study narrows the index's focus to eight indicators that align closely with economic freedom, as identified by Miozzi and Powell (2023a, 2023b).<sup>1</sup> These indicators are mandates on *school closings* and *workplace closures*, *cancellations of public events*, *restrictions on gatherings*, *stay-at-home orders*, *internal-movement restrictions*, *closing of public transit*, and mandatory

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<sup>1</sup> Omitted from our analysis are *vaccination policy*, *contact tracing*, *testing policy*, and *public information campaigns*, as these do not directly impose coercive restrictions on economic freedom. *Vaccination policy* was excluded because of its emphasis on vaccine availability rather than mandatory requirements. Similarly, *contact tracing* and *testing policy* primarily assess the extent and availability of these measures, rather than representing mandatory requirements. The indicator concerning *international travel restrictions* was also disregarded, as these restrictions were uniformly dictated at the federal rather than state level.

*facial coverings*. We average daily data for each of these measures to create a single measure for each state for the year.

Among the eight lockdown indicators, *facial coverings* arguably represents the least direct limitations on economic freedom. However, as discussed by Miozzi and Powell (2023a), the restrictions still constrain the terms of economic exchanges. For instance, airline travelers were mandated to wear masks throughout airports and flights, with noncompliance resulting in fines and other penalties (Transportation Security Administration 2021). Similarly, restaurants across various states faced threats of closure if they failed to enforce mask wearing by customers prior to seating and following meals (Ludlow 2020).

The eight selected lockdown indicators are weighted equally in calculating a state's *lockdown regulatory freedom* score. This score is then adjusted to align with the EFNA index, resulting in a standardized scale ranging from 0 to 10. A score of 10 signifies the absence of lockdown restrictions within a category throughout the measured period, whereas a score of 0 denotes the most stringent lockdown measures imposed by a state for each day measured.<sup>2</sup>

Table 1 reports each state's *lockdown regulatory freedom* score in 2021 in quintiles, ordered from most free (least locked down) to least free (most locked down). The average *lockdown regulatory freedom* score across the US improved from 5.75 to 8.15 from 2020 to 2021, an increase of 41.7 percent. Overall, policy variation marginally decreased from 2020 to 2021, but significant disparities persisted across the states.

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<sup>2</sup> For a comprehensive explanation of how the eight lockdown indicators are scored and mapped onto economic freedom, refer to Miozzi and Powell (2023a, 2023b).

**Table 1. Lockdown regulatory freedom, 2021**

Nebraska	9.38	West Virginia	8.45	Maryland	7.88
South Dakota	9.35	New Jersey	8.39	Texas	7.86
Utah	9.26	Florida	8.38	Delaware	7.79
Iowa	9.14	Wisconsin	8.35	Wyoming	7.78
North Dakota	9.03	Minnesota	8.35	Illinois	7.77
Alabama	9.01	Pennsylvania	8.34	Washington	7.76
South Carolina	8.96	Kentucky	8.31	Rhode Island	7.74
New Hampshire	8.88	Ohio	8.28	Oregon	7.67
Arkansas	8.87	Tennessee	8.25	New Mexico	7.53
Oklahoma	8.83	Nevada	8.25	Vermont	7.38
Idaho	8.79	Missouri	8.21	Massachusetts	7.34
Georgia	8.69	Michigan	7.99	Alaska	7.30
Montana	8.66	North Carolina	7.99	Louisiana	6.79
Mississippi	8.56	Virginia	7.99	New York	6.73
Kansas	8.50	Indiana	7.95	California	6.66
Arizona	8.49	Colorado	7.93	Hawaii	5.24
Maine	8.46	Connecticut	7.92		

In 2021, Nebraska topped the list with a *lockdown regulatory freedom* score of 9.38, followed by South Dakota (9.35), Utah (9.26), Iowa (9.14), and North Dakota (9.03). Hawaii ranked lowest with a score of 5.24, followed by California (6.66), New York (6.73), Louisiana (6.79), and Alaska (7.30).

Other states of interest include Florida (8.38), ranked twentieth, and Texas (7.86), ranked thirty-sixth. Florida's score fluctuated the most in 2021, particularly increasing after May. One common feature among the states in 2021 *lockdown regulatory freedom* was their change in lockdown policy during the summer months. Following May, the average score is 9 for the rest of the year, showing little variation. Florida's middle-of-the-pack ranking and Texas's relatively low ranking reflect the heterogeneity in local government responses in large states discussed in Miozzi and Powell (2023b).<sup>3</sup>

Across states, *facial coverings* (4.04), *restrictions on gatherings* (6.80), and *school closings* (7.73) were the lowest indicators, although *school closings* increased significantly after 2020 (2.20). *Facial coverings* showed

<sup>3</sup> The COVID-19 Stringency Index scores each state based on the lockdown restrictions in place in its most restricted jurisdiction. So, larger states that had more heterogeneous responses at the local government level have overall scores that are lower than what the average policy across the state would capture in this measure. Thus, scores for large states with many local jurisdictions are potentially biased downward.

the least variation across states and was the sole declining indicator from 2020. No state scored above a 5, and the lowest score was 2.38 (Massachusetts). *Restrictions on gatherings*—ranging from 0.41 (Hawaii) to 10 (Iowa, New Hampshire, and South Dakota)—and *school closings*—ranging from 3.33 (New York) to 10 (Nebraska and Wyoming)—exhibited the widest range of scores.

Adjusting the EFNA index to accommodate pandemic restrictions requires us to consider the importance of these restrictions in comparison to other facets of economic freedom measured by the EFNA. We use two adjustment methods, each intuitively aligned with the EFNA index's construction and yielding plausible weights for pandemic restrictions. Nonetheless, we acknowledge the potential for alternative weighting schemes and provide our spreadsheets online for researchers who want to use a different weighting scheme in making their own adjustments to the index.<sup>4</sup> For a detailed exposition of these adjustment methods, refer to Miozzi and Powell (2023b).

Our first adjustment incorporates *lockdown regulatory freedom* as a fourth major area of economic freedom (Area 4), with each of the eight pandemic restriction measures equally weighted within this area. Consequently, pandemic restrictions affecting economic freedom constitute 25 percent of a state's adjusted EFNA score.

The second adjustment method modifies the existing Area 3 of the EFNA index, which evaluates labor market regulations based on three variables: *minimum wage*, *government employment*, and *union density*. We transform these indicators into a *labor regulation* component, equally weighting them to constitute half of a state's overall *regulation* score. We then insert the eight equally weighted pandemic restrictions into Area 3 as a *lockdown regulation* component, constituting the remaining half of a state's overall *regulation* score. This adjustment results in pandemic restrictions accounting for 17 percent of a state's total EFNA score when integrated into the index in this manner.

### III. Results

#### A. Comparing Unadjusted and Adjusted Economic Freedom Rankings in 2021

Table 2 compares the unadjusted and adjusted economic freedom scores. The first column reports the adjustment-1 EFNA score, and

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<sup>4</sup> The spreadsheets are available at <http://www.benjaminwpowell.com/Lockdownadjustedefw.html>.

the table is sorted by this measure from most to least free. The second and third columns report the adjustment-2 EFNA and unadjusted EFNA scores, respectively, with each state's rank in that measure in parentheses. Somewhat counterintuitively, average economic freedom in the states increases from 6.20 to 6.69 and 6.48 after adjustments 1 and 2, respectively, relative to the unadjusted index. This is because lockdown regulatory freedom was, on average, higher than scores for government spending, taxation, and labor market regulation. It would be inaccurate to interpret these adjusted scores to mean states actually have higher levels of economic freedom once we account for lockdown regulations. The adjusted measure simply more accurately measures relative economic freedom between states. This subsection focuses on how our understanding of states' relative economic freedom changes once we account for lockdowns. The next subsection addresses how to best measure changes in absolute levels of freedom over the course of the pandemic.

**Table 2. Unadjusted and lockdown-adjusted 2021 economic freedom**

State	Adjustment 1 EFNA '21	Adjustment 2 EFNA '21	Unadjusted EFNA '21
New Hampshire	8.19	8.15 (1)	7.96 (1)
South Dakota	8.03	7.91 (3)	7.59 (5)
Florida	7.95	8.00 (2)	7.80 (2)
Tennessee	7.86	7.74 (4)	7.73 (3)
Texas	7.70	7.55 (5)	7.64 (4)
Idaho	7.68	7.49 (6)	7.31 (6)
Georgia	7.66	7.40 (7)	7.31 (6)
North Dakota	7.61	7.37 (8)	7.14 (10)
Nebraska	7.48	7.24 (11)	6.85 (13)
North Carolina	7.48	7.28 (10)	7.31 (8)
Indiana	7.42	7.33 (9)	7.25 (9)
Oklahoma	7.41	7.22 (12)	6.94 (12)
Virginia	7.35	7.22 (12)	7.13 (11)
Utah	7.32	6.90 (17)	6.67 (16)
Kansas	7.22	7.07 (14)	6.79 (14)
South Carolina	7.21	6.78 (20)	6.62 (19)
Pennsylvania	7.09	6.81 (19)	6.67 (16)
Missouri	7.07	7.07 (14)	6.69 (15)
Montana	7.07	6.95 (16)	6.55 (22)
Alabama	7.05	6.74 (22)	6.40 (24)
Wisconsin	6.96	6.62 (23)	6.49 (23)
Colorado	6.93	6.84 (18)	6.60 (21)

**Table 2. Unadjusted and lockdown-adjusted 2021 economic freedom**  
*(Continued)*

State	Adjustment 1 EFNA '21	Adjustment 2 EFNA '21	Unadjusted EFNA '21
Wyoming	6.92	6.75 (21)	6.63 (18)
Iowa	6.89	6.45 (29)	6.14 (27)
Arkansas	6.73	6.56 (25)	6.01 (29)
Nevada	6.70	6.53 (26)	6.18 (25)
Louisiana	6.66	6.47 (28)	6.61 (20)
Arizona	6.61	6.44 (30)	5.99 (32)
Connecticut	6.61	6.49 (27)	6.18 (25)
Michigan	6.50	6.38 (31)	6.00 (31)
Ohio	6.49	6.20 (33)	5.89 (33)
Kentucky	6.48	6.08 (34)	5.87 (34)
Washington	6.45	6.57 (24)	6.01 (29)
Massachusetts	6.43	6.28 (32)	6.12 (28)
Mississippi	6.41	6.06 (35)	5.70 (35)
Illinois	6.21	6.00 (36)	5.70 (35)
New Jersey	6.19	5.90 (38)	5.46 (38)
Maryland	6.18	5.88 (39)	5.61 (37)
West Virginia	6.12	5.88 (39)	5.34 (40)
Maine	6.11	5.94 (37)	5.32 (41)
Minnesota	6.06	5.70 (42)	5.29 (43)
Rhode Island	5.92	5.70 (42)	5.31 (42)
Alaska	5.89	5.81 (41)	5.42 (39)
Delaware	5.74	5.24 (45)	5.06 (44)
New Mexico	5.62	5.47 (44)	4.98 (45)
Oregon	5.34	5.13 (46)	4.56 (47)
Vermont	5.05	4.65 (48)	4.27 (48)
California	4.87	4.48 (49)	4.27 (48)

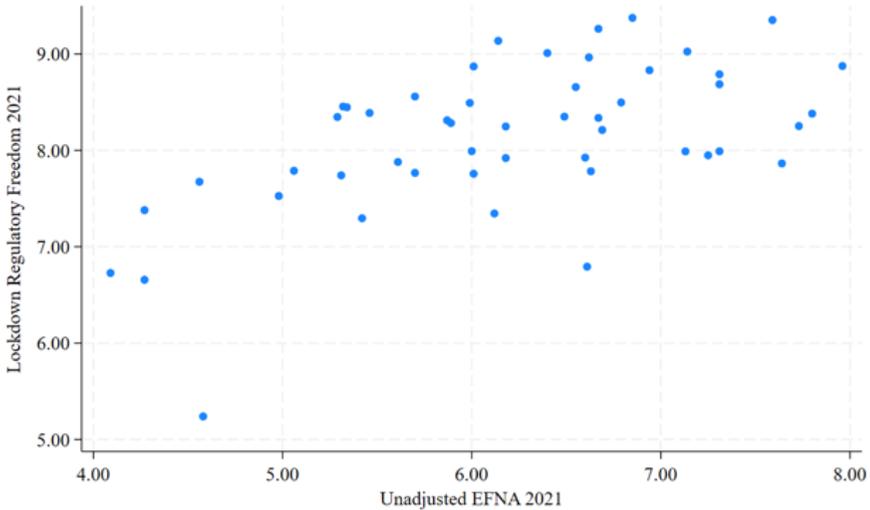
After the first adjustment, only eight states retained their original positions, while twenty-one states experienced an increase and another twenty-one states saw a decrease in their ranking. Following the second adjustment, fifteen states preserved their ranks, while twenty states *ascended and another fifteen descended in the rankings*. Among the states that shifted in the rankings, 38 percent experienced a movement exceeding one standard deviation after the first adjustment, while 26 percent did so after the second adjustment.

Alabama, Arizona, Arkansas, Montana, and Nebraska exhibited the largest increases after the first adjustment, with each state

advancing four spots. Nebraska's advancement placed it within the top ten in economic freedom. Montana and Arkansas were also among the most-improving states after adjustment 2, gaining six and four spots, respectively. In contrast, Louisiana, Massachusetts, Wyoming, Alaska, and Washington experienced the largest declines in rank following the first adjustment. Louisiana dropped seven spots while Massachusetts dropped six spots. These states experienced the largest decreases after the second adjustment as well, with Louisiana plummeting eight spots and Massachusetts four spots.

The top five states remain identical across the unadjusted index and both adjusted indexes, with variations only in their rank among themselves. Similarly, the top ten states are the same in the unadjusted index and the adjustment-2 index, differing only in their rankings among themselves. In the first adjustment, nine out of the top ten states are the same as in the other indexes, with Nebraska being the only new addition and Indiana being the sole departure. New Hampshire is the most economically free state across all indexes. This is consistent with the findings of Miozzi and Powell (2023c), who find that prepandemic economic freedoms in the areas of taxation, government spending, and labor market regulation predict the severity of subsequent infringements on economic freedoms through lockdown regulations. Indeed, previously economically free states were less likely to implement more stringent lockdowns. Figure 1 illustrates the data with a simple scatter plot between 2021 lockdown regulatory freedom and unadjusted EFNA scores. So, given past findings, and given that 2021 unadjusted economic freedom is highly correlated with prior levels of economic freedom, our results here are not surprising.

**Figure 1. Scatter plot between 2021 lockdown regulatory freedom and unadjusted EFNA scores**



Our adjustments to the EFNA index allow us to more precisely measure economic freedom during the pandemic for 2021. The preceding analysis indicates that although the behavior of certain economic freedoms correlates with the behavior of others, there were notable shifts in economic freedom in 2021—both in direction and magnitude—that were not fully captured by the existing measure. Next we turn to analyzing how economic freedom evolved over the course of the pandemic.

### *B. The Evolution of Economic Freedom throughout the Pandemic*

To an unprecedented degree, state and local governments infringed on the freedom of people to engage in market exchange in response to the onset of the pandemic. The existing state-level economic freedom index (EFNA) did not contain any measures for these infringements precisely because of their unprecedented nature. Prior to 2020, no state had mandatory school closures, restrictions on gathering sizes, or any of the other interventions captured in our measure of lockdown regulatory freedom. Essentially, every state's lockdown-regulatory-freedom score would have been a 10 in 2019 and all prior years. Thus, our adjustment, which includes the actual lockdown regulatory freedom in 2020 and 2021, cannot be directly compared to the unadjusted index over time. We need to reweight the 2019 EFNA index to match the weights of the two

adjustments in 2020 and 2021 and insert scores of 10 for lockdown regulatory freedom in each of these adjustments in 2019. Essentially, we need to inflate the 2019 score to account for the absence of lockdowns, and then we can consistently measure how economic freedom changed over the course of the pandemic.

Table 3 presents the unadjusted and adjusted EFNA scores for 2019 through 2021 using both adjustment methods. Each state's ranking is provided next to each score in parentheses. Adjustments 1 and 2 for 2019 indicate where a score of 10 out of 10 was recorded for all lockdown indicators using the adjustment methods described above. The adjusted scores for 2021 match those in table 2. The unadjusted scores for 2019, 2020, and 2021 are the scores published in the EFNA index using its typical weighting scheme.

**Table 3. Unadjusted and adjusted economic freedom throughout the pandemic**

State	2019		
	Unadjusted EFNA '19	Adjustment 1 EFNA '19	Adjustment 2 EFNA '19
Alabama	6.33 (27)	7.25 (27)	6.98 (23)
Alaska	5.23 (40)	6.42 (40)	6.12 (39)
Arizona	5.68 (35)	6.76 (35)	6.53 (34)
Arkansas	6.04 (31)	7.03 (31)	6.75 (30)
California	4.41 (49)	5.81 (49)	5.22 (49)
Colorado	6.52 (19)	7.39 (19)	7.23 (17)
Connecticut	6.37 (25)	7.28 (25)	6.99 (22)
Delaware	5.18 (41)	6.38 (41)	5.78 (43)
Florida	7.90 (1)	8.43 (1)	8.35 (1)
Georgia	7.48 (6)	8.11 (6)	7.85 (6)
Hawaii	4.81 (46)	6.11 (46)	5.78 (43)
Idaho	7.16 (8)	7.87 (8)	7.64 (8)
Illinois	5.99 (32)	6.99 (32)	6.63 (33)
Indiana	6.88 (13)	7.66 (13)	7.38 (13)
Iowa	6.16 (29)	7.12 (29)	6.66 (32)
Kansas	6.92 (11)	7.69 (11)	7.47 (10)
Kentucky	5.62 (36)	6.72 (36)	6.21 (36)
Louisiana	6.50 (21)	7.37 (21)	6.96 (24)
Maine	5.10 (42)	6.33 (42)	6.07 (40)
Maryland	6.25 (28)	7.19 (28)	6.92 (26)
Massachusetts	6.56 (18)	7.42 (18)	7.19 (19)
Michigan	5.87 (33)	6.90 (33)	6.68 (31)

State	2019 <i>(Continued)</i>		
	Unadjusted EFNA '19	Adjustment 1 EFNA '19	Adjustment 2 EFNA '19
Minnesota	5.45 (37)	6.58 (37)	6.15 (37)
Mississippi	5.24 (39)	6.43 (39)	5.97 (41)
Missouri	6.61 (17)	7.46 (17)	7.37 (14)
Montana	6.41 (23)	7.31 (23)	7.10 (20)
Nebraska	6.64 (16)	7.48 (16)	7.25 (16)
Nevada	6.68 (15)	7.51 (15)	7.32 (15)
New Hampshire	7.74 (4)	8.31 (4)	8.13 (3)
New Jersey	5.41 (38)	6.56 (38)	6.13 (38)
New Mexico	4.62 (48)	5.96 (48)	5.49 (48)
New York	4.19 (50)	5.65 (50)	5.11 (50)
North Carolina	7.03 (10)	7.78 (10)	7.42 (12)
North Dakota	7.12 (9)	7.84 (9)	7.53 (9)
Ohio	5.74 (34)	6.81 (34)	6.42 (35)
Oklahoma	6.90 (12)	7.68 (12)	7.45 (11)
Oregon	5.00 (43)	6.25 (43)	5.90 (42)
Pennsylvania	6.52 (19)	7.39 (19)	6.96 (24)
Rhode Island	4.94 (44)	6.21 (44)	5.78 (43)
South Carolina	6.46 (22)	7.35 (22)	6.89 (27)
South Dakota	7.41 (7)	8.06 (7)	7.96 (5)
Tennessee	7.82 (2)	8.36 (2)	8.19 (2)
Texas	7.78 (3)	8.34 (3)	8.11 (4)
Utah	6.37 (25)	7.28 (25)	6.80 (29)
Vermont	4.91 (45)	6.18 (45)	5.70 (46)
Virginia	7.52 (5)	8.14 (5)	7.82 (7)
Washington	6.06 (30)	7.05 (30)	7.10 (20)
West Virginia	4.68 (47)	6.01 (47)	5.57 (47)
Wisconsin	6.39 (24)	7.29 (24)	6.85 (28)
Wyoming	6.71 (14)	7.53 (14)	7.21 (18)
<i>Average</i>	<b>6.19</b>	<b>7.14</b>	<b>6.82</b>

State	2020		
	Unadjusted EFNA '20	Adjustment 1 EFNA '20	Adjustment 2 EFNA '20
Alabama	6.47 (22)	6.63 (17)	6.56 (19)
Alaska	5.25 (41)	5.29 (41)	5.37 (39)
Arizona	5.97 (32)	6.14 (29)	6.16 (29)
Arkansas	6.27 (27)	6.45 (23)	6.49 (21)
California	4.61 (49)	4.53 (48)	4.41 (49)
Colorado	6.57 (20)	6.42 (24)	6.52 (20)
Connecticut	6.22 (28)	5.95 (30)	6.08 (31)
Delaware	5.23 (42)	5.23 (42)	5.01 (44)
Florida	7.97 (1)	7.18 (5)	7.52 (3)
Georgia	7.33 (7)	6.92 (11)	6.96 (11)
Hawaii	4.66 (48)	4.44 (49)	4.59 (48)
Idaho	7.31 (9)	6.91 (12)	7.01 (9)
Illinois	5.85 (34)	5.60 (36)	5.64 (35)
Indiana	7.12 (11)	6.96 (10)	6.97 (10)
Iowa	6.16 (29)	6.48 (22)	6.21 (28)
Kansas	7.00 (14)	6.89 (14)	6.95 (12)
Kentucky	5.68 (36)	5.53 (39)	5.37 (39)
Louisiana	6.49 (21)	6.32 (26)	6.23 (25)
Maine	5.14 (45)	4.91 (44)	5.12 (43)
Maryland	6.07 (30)	5.69 (34)	5.81 (33)
Massachusetts	6.43 (26)	6.17 (28)	6.23 (25)
Michigan	5.94 (33)	5.85 (32)	5.97 (32)
Minnesota	5.43 (39)	5.57 (37)	5.47 (37)
Mississippi	5.58 (37)	5.88 (31)	5.70 (34)
Missouri	6.90 (15)	6.65 (16)	6.85 (16)
Montana	6.69 (18)	6.63 (18)	6.73 (17)
Nebraska	6.80 (16)	6.86 (15)	6.87 (14)
Nevada	6.46 (25)	6.35 (25)	6.43 (22)
New Hampshire	7.92 (2)	7.63 (2)	7.74 (2)
New Jersey	5.46 (38)	5.56 (38)	5.45 (38)
New Mexico	5.19 (43)	4.55 (47)	4.75 (47)
New York	4.26 (50)	4.21 (50)	4.16 (50)
North Carolina	7.31 (9)	6.90 (13)	6.93 (13)
North Dakota	7.33 (7)	7.55 (3)	7.40 (5)
Ohio	5.71 (35)	5.68 (35)	5.62 (36)
Oklahoma	7.07 (12)	7.13 (6)	7.12 (7)
Oregon	4.94 (47)	4.89 (45)	4.98 (45)
Pennsylvania	6.60 (19)	6.23 (27)	6.22 (27)

State	2020 (continued)		
	Unadjusted EFNA '20	Adjustment 1 EFNA '20	Adjustment 2 EFNA '20
Rhode Island	5.32 (40)	5.05 (43)	5.20 (42)
South Carolina	6.47 (22)	6.53 (20)	6.32 (24)
South Dakota	7.73 (4)	7.85 (1)	7.88 (1)
Tennessee	7.85 (3)	7.32 (4)	7.46 (4)
Texas	7.67 (5)	7.00 (8)	7.15 (6)
Utah	7.07 (12)	6.97 (9)	6.86 (15)
Vermont	5.03 (46)	4.88 (46)	4.86 (46)
Virginia	7.50 (6)	7.13 (6)	7.11 (8)
Washington	6.03 (31)	5.76 (33)	6.13 (30)
West Virginia	5.19 (43)	5.35 (40)	5.33 (41)
Wisconsin	6.47 (22)	6.49 (21)	6.33 (23)
Wyoming	6.75 (17)	6.60 (19)	6.61 (18)
<i>Average</i>	<i>6.29</i>	<i>6.15</i>	<i>6.18</i>

State	2021		
	Unadjusted EFNA '21	Adjustment 1 EFNA '21	Adjustment 2 EFNA '21
Alabama	6.40 (24)	7.05 (20)	6.74 (22)
Alaska	5.42 (39)	5.89 (43)	5.81 (41)
Arizona	5.99 (32)	6.61 (28)	6.44 (30)
Arkansas	6.01 (29)	6.73 (25)	6.56 (25)
California	4.27 (48)	4.87 (48)	4.48 (49)
Colorado	6.60 (21)	6.93 (22)	6.84 (18)
Connecticut	6.18 (25)	6.61 (28)	6.49 (27)
Delaware	5.06 (44)	5.74 (44)	5.24 (45)
Florida	7.80 (2)	7.95 (3)	8.00 (2)
Georgia	7.31 (6)	7.66 (7)	7.40 (7)
Hawaii	4.58 (46)	4.75 (49)	4.68 (47)
Idaho	7.31 (6)	7.68 (6)	7.49 (6)
Illinois	5.70 (35)	6.21 (36)	6.00 (36)
Indiana	7.25 (9)	7.42 (11)	7.33 (9)
Iowa	6.14 (27)	6.89 (24)	6.45 (29)
Kansas	6.79 (14)	7.22 (15)	7.07 (14)
Kentucky	5.87 (34)	6.48 (32)	6.08 (34)
Louisiana	6.61 (20)	6.66 (27)	6.47 (28)
Maine	5.32 (41)	6.11 (40)	5.94 (37)
Maryland	5.61 (37)	6.18 (38)	5.88 (39)

State	2021 (continued)		
	Unadjusted EFNA '21	Adjustment 1 EFNA '21	Adjustment 2 EFNA '21
Massachusetts	6.12 (28)	6.43 (34)	6.28 (32)
Michigan	6.00 (31)	6.50 (30)	6.38 (31)
Minnesota	5.29 (43)	6.06 (41)	5.70 (42)
Mississippi	5.70 (35)	6.41 (35)	6.06 (35)
Missouri	6.69 (15)	7.07 (18)	7.07 (14)
Montana	6.55 (22)	7.07 (18)	6.95 (16)
Nebraska	6.85 (13)	7.48 (9)	7.24 (11)
Nevada	6.18 (25)	6.70 (26)	6.53 (26)
New Hampshire	7.96 (1)	8.19 (1)	8.15 (1)
New Jersey	5.46 (38)	6.19 (37)	5.90 (38)
New Mexico	4.98 (45)	5.62 (45)	5.47 (44)
New York	4.09 (50)	4.75 (49)	4.45 (50)
North Carolina	7.31 (6)	7.48 (9)	7.28 (10)
North Dakota	7.14 (10)	7.61 (8)	7.37 (8)
Ohio	5.89 (33)	6.49 (31)	6.20 (33)
Oklahoma	6.94 (12)	7.41 (12)	7.22 (12)
Oregon	4.56 (47)	5.34 (46)	5.13 (46)
Pennsylvania	6.67 (16)	7.09 (17)	6.81 (19)
Rhode Island	5.31 (42)	5.92 (42)	5.70 (42)
South Carolina	6.62 (19)	7.21 (16)	6.78 (20)
South Dakota	7.59 (5)	8.03 (2)	7.91 (3)
Tennessee	7.73 (3)	7.86 (4)	7.74 (4)
Texas	7.64 (4)	7.70 (5)	7.55 (5)
Utah	6.67 (16)	7.32 (14)	6.90 (17)
Vermont	4.27 (48)	5.05 (47)	4.65 (48)
Virginia	7.13 (11)	7.35 (13)	7.22 (12)
Washington	6.01 (29)	6.45 (33)	6.57 (24)
West Virginia	5.34 (40)	6.12 (39)	5.88 (39)
Wisconsin	6.49 (23)	6.96 (21)	6.62 (23)
Wyoming	6.63 (18)	6.92 (23)	6.75 (21)
<i>Average</i>	<b>6.20</b>	<b>6.69</b>	<b>6.48</b>

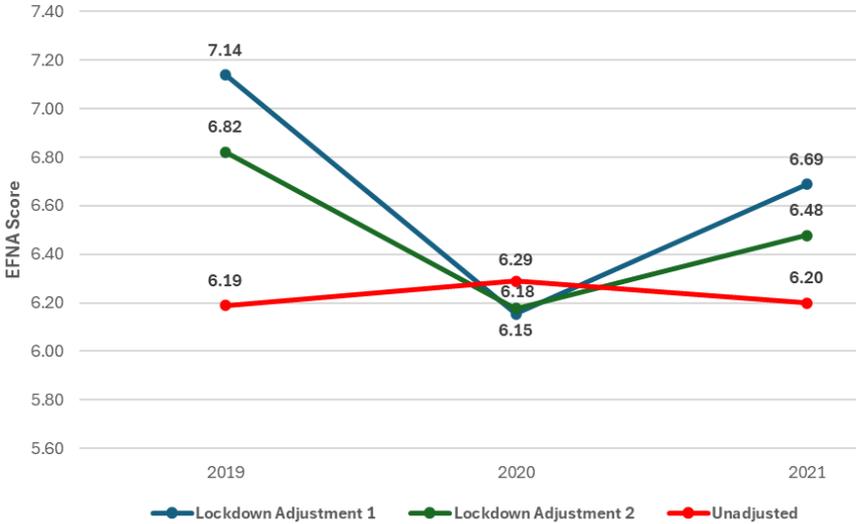
Examining the evolution of economic freedom scores across states between the unadjusted and lockdown-adjusted indexes reveals significant differences. For instance, Utah exhibited the largest increases in economic freedom from 2019 to 2021 in both the unadjusted and adjusted indexes. However, while Utah rose by nine spots in the unadjusted index, its ascent increased to eleven and

twelve spots in the adjustment-1 and adjustment-2 indexes, respectively. Alabama and Arizona each improved by four spots in the unadjusted index but seven spots in the adjustment-1 index. Likewise, Nebraska improved three spots in the unadjusted index, but this increased to seven spots in the adjustment-1 index. Massachusetts and Nevada both dropped by ten spots in the unadjusted index rankings, but their declines deepened to sixteen and eleven spots, respectively, in the adjusted indexes. Similarly, Maryland fell by nine spots in the unadjusted measures from 2019 to 2021. However, in the lockdown-adjusted indexes, Maryland plummeted by ten and thirteen spots in the adjustment-1 and adjustment-2 indexes, respectively.

Among the states that jumped or dropped most in the rankings, several appear in all three indexes. For example, Utah and West Virginia are the top two jumpers from 2019 to 2021 across all three indexes. Likewise, Massachusetts, Nevada, and Maryland are among the top three states dropping most in rank across all indexes. However, as discussed above, even the states moving in the same direction in rank across the indexes experienced larger movements in the adjusted measures.

The magnitude of movement was more pronounced following the first adjustment method. Thirty-nine states shifted in the same direction in the rankings from 2019 to 2021 across both the unadjusted and lockdown-adjusted indexes. Of these, 18 percent moved by more than one standard deviation. Similarly, thirty-seven states moved in the same direction following adjustment 2, but only 8 percent moved by more than a standard deviation.

Figure 2 compares the average economic freedom across US states from 2019 through 2021 in the unadjusted and lockdown-adjusted indexes. The red line tracks economic freedom as measured by the unadjusted index. The blue and green lines track lockdown-adjusted economic freedom using the adjustment-1 and adjustment-2 indexes, respectively.

**Figure 2. Average economic freedom throughout the pandemic**

The importance of adjusting economic freedom scores for lockdown regulations is immediately apparent in figure 2. The unadjusted scores report an increase in economic freedom from 2019 to 2020 by 1.62 percent and then a slight drop-off in economic freedom in 2021 that returns to essentially 2019 levels. No one who lived through 2020 could possibly believe that economic freedom increased in 2020. Similarly, it is hard to believe that state-level economic freedom decreased from 2020 to 2021 as pandemic restrictions were rolled back. The unadjusted EFNA index, which only measures government spending, taxation, and labor market regulation, simply misses the margins on which all the action occurred in 2020 and 2021.

Once we account for lockdown regulations, average economic freedom across US states plunged by 13.8 percent from 2019 to 2020 when measured using adjustment 1 and 9.5 percent using adjustment 2. Our measures also show that overall economic freedom improved from 2020 to 2021 as lockdown regulations were scaled back but that this improvement was not large enough to offset the large losses in economic freedom experienced in 2020. Figure 2 shows that average economic freedom levels in 2021 remained about 6.3 percent lower than prepandemic levels when measured with adjustment 1 and 5 percent lower when measured with adjustment 2.

#### IV. Conclusion

Our analysis demonstrates a significant impact of COVID-19 lockdown regulations on economic freedom across the United States throughout the pandemic. Despite an overall increase in lockdown regulatory freedom by 41.7 percent from 2020 to 2021, there remained substantial variation in specific policies among states, particularly regarding school closings and restrictions on gatherings.

By adjusting the EFNA index to incorporate lockdown regulatory freedom, we provided a more accurate measure of economic freedom during the pandemic. Our findings reveal notable shifts in both the direction and magnitude of economic freedom that were not fully captured by the existing 2021 EFNA scores. Following our first adjustment method, forty-two states experienced changes in rank, with sixteen moving by more than one standard deviation.

Although the unadjusted indexes suggest a return to prepandemic levels of economic freedom in 2021, our adjusted measures indicate that the increases in economic freedom from 2020 to 2021 were insufficient to offset the significant declines experienced across states in 2020. After accounting for lockdown regulations, our adjusted scores indicate that state-level economic freedom remains 5 to 6 percent below prepandemic levels.

Our findings underscore the substantial and enduring impact of lockdown regulations on economic freedom. Furthermore, our study contributes a comprehensive data set that consistently evaluates the interplay between COVID-19 regulations and economic freedom throughout the pandemic, providing valuable data for future research. Future research should also examine alternative weighting schemes of both how to include *lockdown regulatory freedom* in the EFNA index and how to scale the data used to construct that measure. This paper maintained the weighting and scales that were constructed in Miozzi and Powell (2023a, 2023b, 2024) for consistency. Those schemes were originally constructed for the Economic Freedom of the World index rather than EFNA. Since EFNA is a much narrower measure than Economic Freedom of the World, it is plausible that significantly greater weight and scaling of *lockdown regulatory freedom* are justified.

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