

Pandemic Response Job Recovery Report

Focus on Alaska

February 11, 2022

State Summary

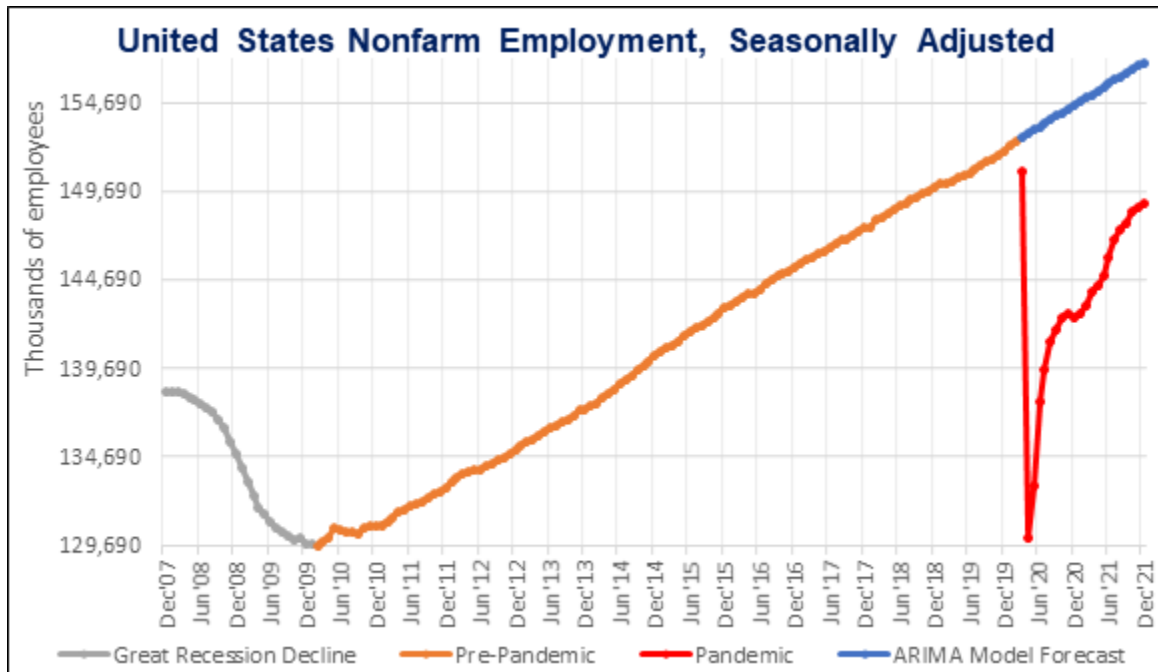
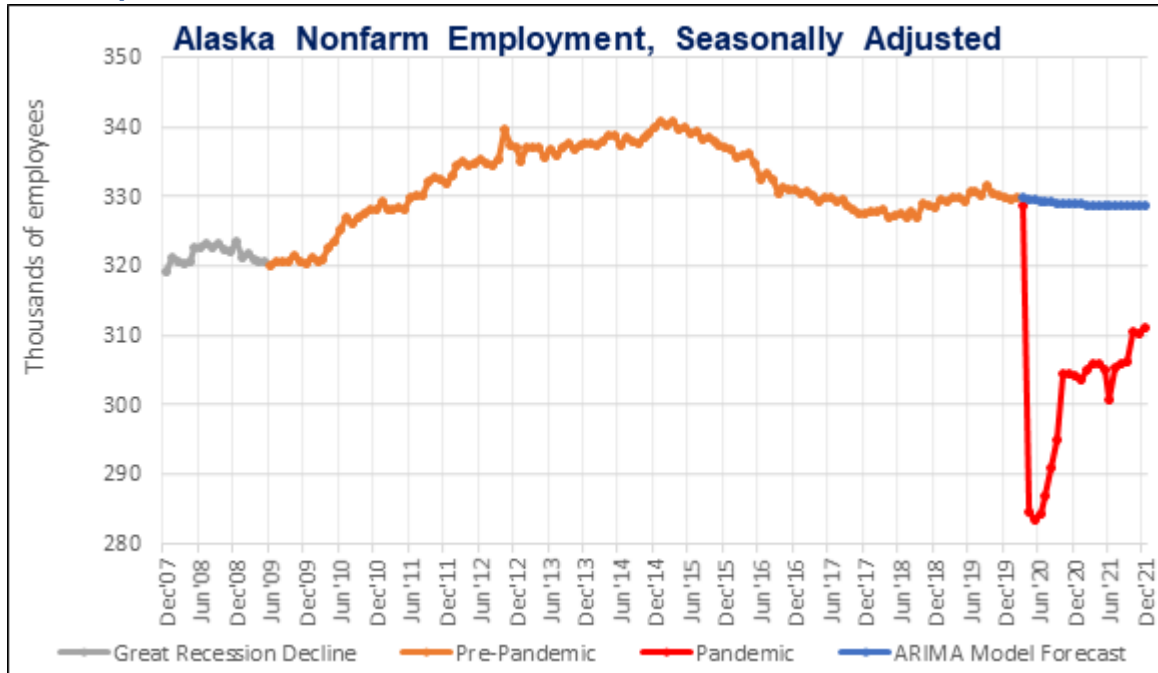
This is a state specific summary for Alaska of a project by the Georgia Center for Opportunity (GCO) to understand the impact of state responses to the pandemic on employment opportunities. The full report and related material can be found at <https://georgiaopportunity.org/state-pandemic-response-impact-on-work-opportunity>.

As of December 2021, Alaska recovered 59.6% of its lost jobs because of the pandemic, ranking 47th in the nation. When the pre-pandemic job trajectory is captured, Alaska's rank improves to 35th. Its initial job loss impact from the pandemic was about average among the states, ranking Alaska 30th in the nation.

Relative to severity of governmental responses in shutting down the economies, such as closing down businesses or stay-at-home orders, Alaska ranked 42nd with the Government Severity Index created by GCO specifically for the project, but 19th with the Abridged Oxford Stringency Index. Alaska was one of few states where the severity metrics diverged, making it more difficult to interpret the results. Note that the indexes include local actions in addition to state actions

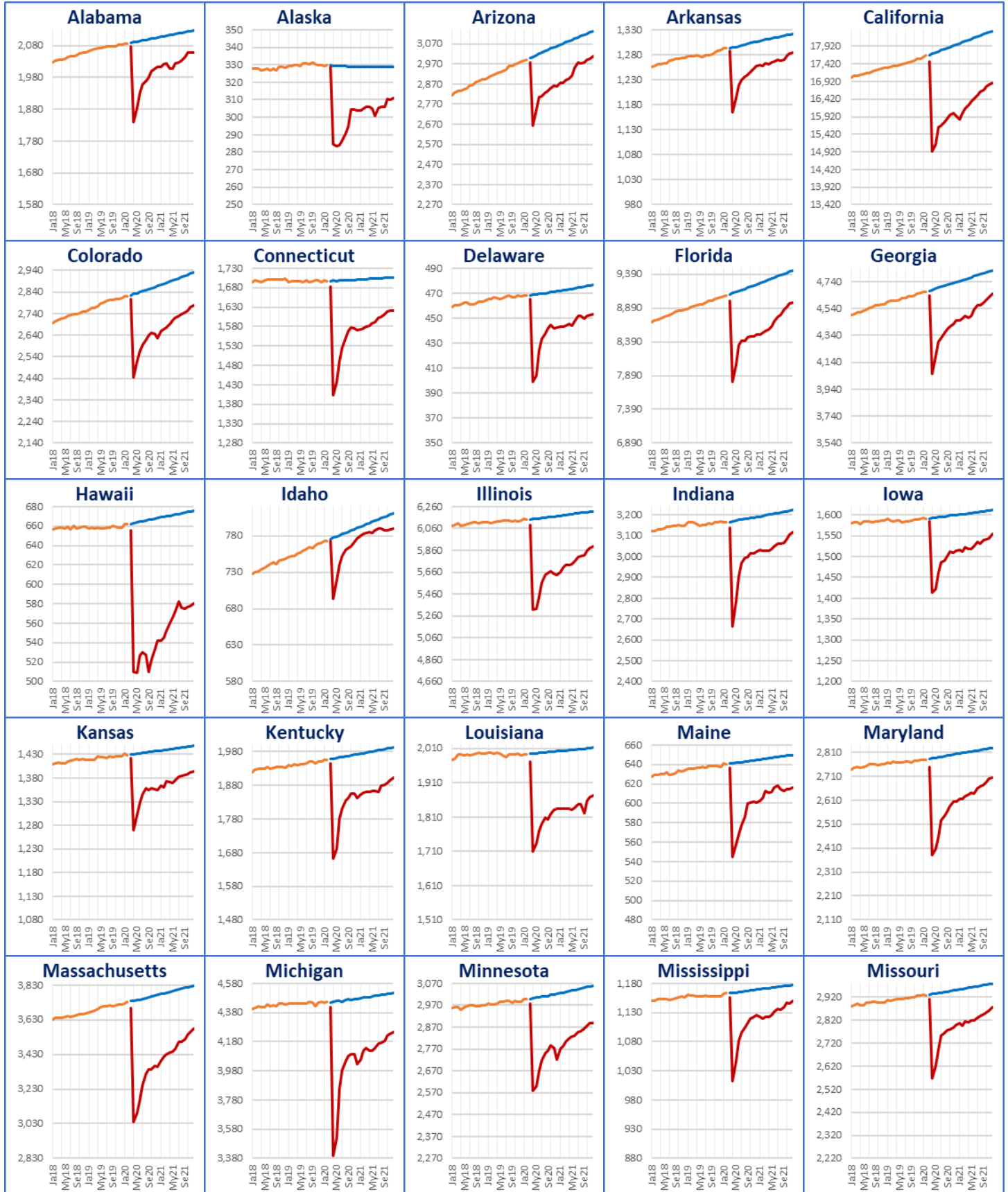
Interpretation: Alaska's job recovery is slower than most states. Because of the divergence in the severity indexes, it is difficult to interpret the restrictiveness of Alaska's pandemic policies. It is also difficult to analyze whether different pandemic policies would have resulted in better job growth. The general rule from the association of the regression analysis suggests that less restrictive policies would have resulted in better job growth. However, if a state was among those with the least restrictive policies—and because the analysis cannot be extended beyond the range used for the regression analysis—it cannot be concluded that even less restrictive policies would have produced better job recovery numbers.

Job Impact from COVID-19 Pandemic



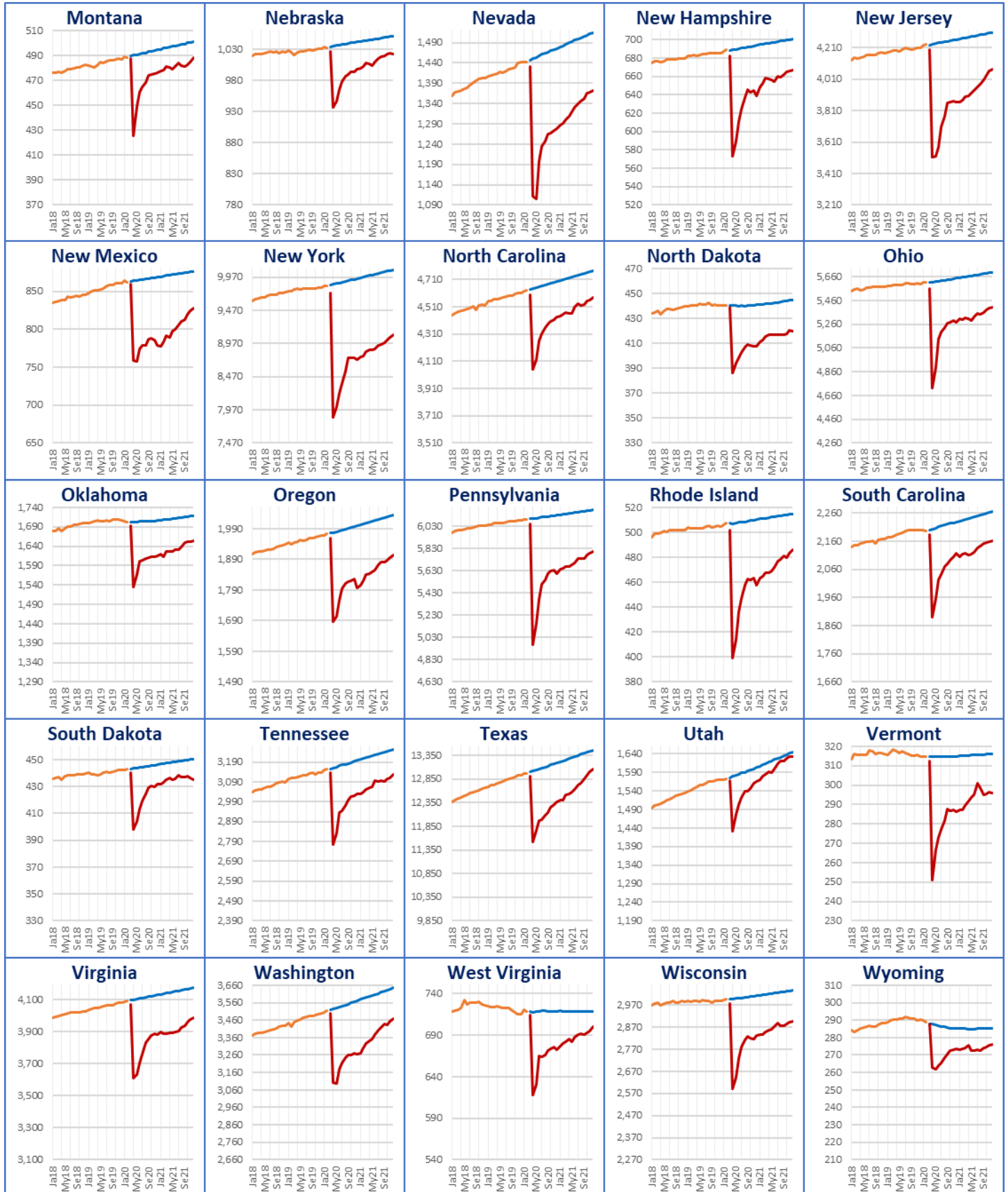


Job Growth Comparison. Thousands of Employees. Key: — Pre-Pandemic — ARIMA Model Forecast — Pandemic





Job Growth Comparison. Thousands of Employees. Key: — Pre-Pandemic — ARIMA Model Forecast — Pandemic

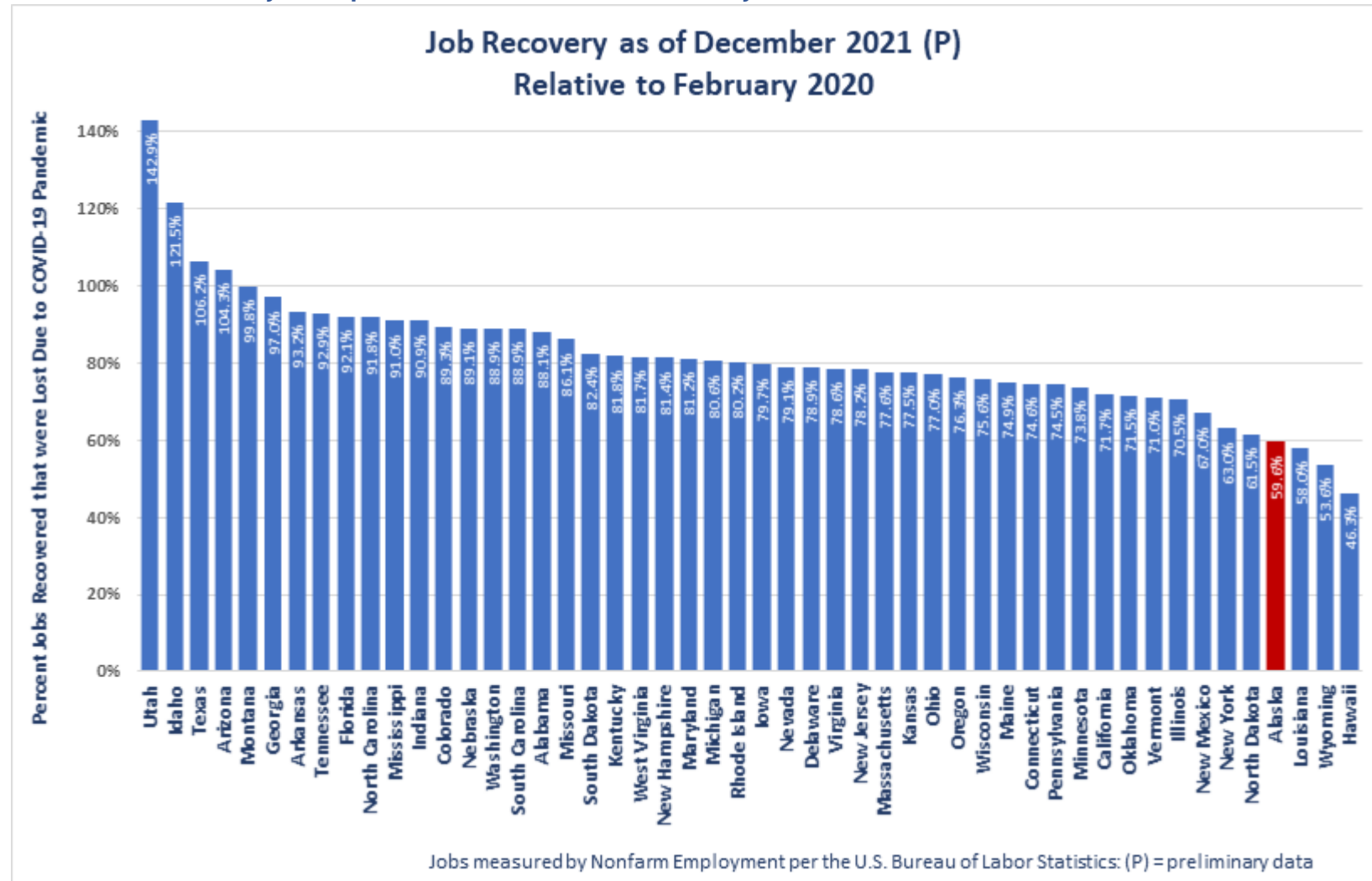


Initial Job Loss Impact Due to COVID-19 Pandemic¹

| Area | Employment | Monthly Percent Change | | | | Job Trough | Maximum Job Loss | Percent Impact | Least to Worst Rank | Pre-Pandemic Job Growth Rate: Dec 2018 to Dec 2019 |
|----------------------|-------------|------------------------|----------|----------|----------|-------------|------------------|----------------|---------------------|--|
| | Feb 2020 | Mar 2020 | Apr 2020 | May 2020 | Jun 2020 | | | | | |
| United States | 152,523,000 | -1.1% | -13.7% | 2.2% | 3.6% | 130,161,000 | -22,362,000 | -14.7% | | 1.3% |
| Alabama | 2,086,500 | -0.4% | -11.5% | 2.5% | 2.4% | 1,839,700 | -246,800 | -11.8% | 14 | 1.2% |
| Alaska | 329,800 | -0.3% | -13.4% | -0.4% | 0.3% | 283,300 | -46,500 | -14.1% | 30 | 0.4% |
| Arizona | 2,993,100 | -0.6% | -10.6% | 3.1% | 2.2% | 2,661,600 | -331,500 | -11.1% | 9 | 3.0% |
| Arkansas | 1,292,400 | -0.4% | -9.5% | 2.5% | 2.0% | 1,165,200 | -127,200 | -9.8% | 5 | 1.2% |
| California | 17,660,900 | -1.0% | -14.5% | 1.2% | 3.2% | 14,946,100 | -2,714,800 | -15.4% | 37 | 1.4% |
| Colorado | 2,819,000 | -0.4% | -13.0% | 3.1% | 1.8% | 2,443,200 | -375,800 | -13.3% | 23 | 2.1% |
| Connecticut | 1,696,300 | -0.8% | -16.6% | 2.4% | 3.7% | 1,403,900 | -292,400 | -17.2% | 42 | -0.6% |
| Delaware | 468,000 | -0.6% | -14.2% | 1.1% | 5.0% | 399,300 | -68,700 | -14.7% | 34 | 0.8% |
| Florida | 9,072,100 | -0.8% | -13.3% | 3.2% | 3.6% | 7,802,900 | -1,269,200 | -14.0% | 27 | 2.1% |
| Georgia | 4,666,500 | -0.6% | -12.5% | 3.2% | 2.6% | 4,057,000 | -609,500 | -13.1% | 22 | 1.9% |
| Hawaii | 662,300 | -1.1% | -22.2% | -0.1% | 3.5% | 509,200 | -153,100 | -23.1% | 48 | -0.1% |
| Idaho | 773,400 | -0.1% | -10.2% | 3.6% | 2.9% | 693,800 | -79,600 | -10.3% | 7 | 3.0% |
| Illinois | 6,142,800 | -0.8% | -12.7% | 0.2% | 2.0% | 5,318,600 | -824,200 | -13.4% | 24 | 0.3% |
| Indiana | 3,163,800 | -0.8% | -15.1% | 4.5% | 4.2% | 2,664,500 | -499,300 | -15.8% | 38 | 0.7% |
| Iowa | 1,590,900 | -0.4% | -10.8% | 0.6% | 2.7% | 1,412,500 | -178,400 | -11.2% | 11 | 0.3% |
| Kansas | 1,428,800 | -0.5% | -10.6% | 2.4% | 1.9% | 1,270,800 | -158,000 | -11.1% | 8 | 0.6% |
| Kentucky | 1,957,000 | -0.6% | -14.6% | 1.8% | 5.3% | 1,662,100 | -294,900 | -15.1% | 36 | 1.0% |
| Louisiana | 1,993,500 | -1.1% | -13.3% | 1.4% | 2.2% | 1,709,600 | -283,900 | -14.2% | 31 | -0.2% |
| Maine | 640,000 | -0.5% | -14.3% | 2.3% | 1.8% | 545,400 | -94,600 | -14.8% | 35 | 0.7% |
| Maryland | 2,779,000 | -1.1% | -13.5% | 1.2% | 2.0% | 2,379,000 | -400,000 | -14.4% | 32 | 0.7% |
| Massachusetts | 3,733,400 | -0.9% | -17.8% | 1.6% | 2.4% | 3,041,500 | -691,900 | -18.5% | 43 | 1.3% |
| Michigan | 4,452,900 | -0.9% | -23.0% | 3.6% | 9.6% | 3,397,600 | -1,055,300 | -23.7% | 50 | 0.4% |
| Minnesota | 2,996,300 | -0.6% | -13.4% | 0.7% | 2.7% | 2,580,000 | -416,300 | -13.9% | 26 | 0.6% |
| Mississippi | 1,163,200 | -0.6% | -12.5% | 3.3% | 3.4% | 1,012,000 | -151,200 | -13.0% | 21 | 0.1% |
| Missouri | 2,926,600 | -0.5% | -11.8% | 2.1% | 2.5% | 2,569,400 | -357,200 | -12.2% | 17 | 1.1% |
| Montana | 488,000 | -0.1% | -12.7% | 5.5% | 2.5% | 425,800 | -62,200 | -12.7% | 20 | 1.0% |
| Nebraska | 1,032,400 | -0.6% | -8.7% | 0.9% | 2.0% | 937,000 | -95,400 | -9.2% | 3 | 0.6% |
| Nevada | 1,442,800 | -0.8% | -22.3% | -0.6% | 8.3% | 1,105,700 | -337,100 | -23.4% | 49 | 2.8% |
| New Hampshire | 689,000 | -1.0% | -16.0% | 3.0% | 3.5% | 572,600 | -116,400 | -16.9% | 40 | 0.9% |
| New Jersey | 4,229,600 | -0.8% | -16.3% | 0.2% | 1.6% | 3,512,400 | -717,200 | -17.0% | 41 | 0.7% |
| New Mexico | 861,900 | -0.3% | -11.7% | -0.1% | 2.2% | 757,700 | -104,200 | -12.1% | 16 | 1.8% |
| New York | 9,835,100 | -1.1% | -19.3% | 2.0% | 2.7% | 7,852,400 | -1,982,700 | -20.2% | 45 | 0.7% |
| North Carolina | 4,626,600 | -0.6% | -11.9% | 1.8% | 3.2% | 4,051,400 | -575,200 | -12.4% | 19 | 2.1% |
| North Dakota | 440,300 | -0.4% | -12.0% | 2.2% | 1.0% | 386,000 | -54,300 | -12.3% | 18 | 0.2% |
| Ohio | 5,609,900 | -0.9% | -15.1% | 3.6% | 4.8% | 4,721,400 | -888,500 | -15.8% | 39 | 0.5% |
| Oklahoma | 1,701,700 | -0.6% | -9.3% | 2.1% | 2.1% | 1,535,100 | -166,600 | -9.8% | 4 | 0.4% |
| Oregon | 1,973,000 | -0.7% | -13.8% | 1.0% | 3.1% | 1,687,500 | -285,500 | -14.5% | 33 | 1.5% |
| Pennsylvania | 6,092,600 | -0.7% | -17.9% | 3.9% | 4.2% | 4,962,900 | -1,129,700 | -18.5% | 44 | 0.8% |
| Rhode Island | 507,200 | -1.0% | -20.5% | 3.8% | 5.2% | 399,200 | -108,000 | -21.3% | 47 | 0.5% |
| South Carolina | 2,196,400 | -0.6% | -13.5% | 3.6% | 3.4% | 1,888,600 | -307,800 | -14.0% | 28 | 1.5% |
| South Dakota | 442,800 | -0.5% | -9.6% | 1.5% | 2.2% | 398,400 | -44,400 | -10.0% | 6 | 0.6% |
| Tennessee | 3,153,700 | -0.5% | -11.6% | 2.2% | 3.6% | 2,773,900 | -379,800 | -12.0% | 15 | 1.6% |
| Texas | 12,970,000 | -0.5% | -10.8% | 2.1% | 1.8% | 11,517,400 | -1,452,600 | -11.2% | 10 | 2.1% |
| Utah | 1,572,200 | -0.2% | -8.7% | 3.1% | 1.7% | 1,432,200 | -140,000 | -8.9% | 1 | 2.4% |
| Vermont | 314,500 | -0.7% | -19.7% | 6.2% | 2.4% | 251,000 | -63,500 | -20.2% | 46 | -0.4% |
| Virginia | 4,091,000 | -0.5% | -11.3% | 0.6% | 1.9% | 3,611,000 | -480,000 | -11.7% | 12 | 1.3% |
| Washington | 3,513,100 | -0.4% | -11.3% | -0.1% | 2.7% | 3,098,200 | -414,900 | -11.8% | 13 | 2.2% |
| West Virginia | 718,700 | -0.6% | -13.5% | 2.1% | 5.5% | 617,700 | -101,000 | -14.1% | 29 | -1.4% |
| Wisconsin | 2,997,800 | -0.6% | -13.1% | 2.0% | 3.3% | 2,590,000 | -407,800 | -13.6% | 25 | 0.2% |
| Wyoming | 288,600 | -0.2% | -8.7% | -0.3% | 0.6% | 262,100 | -26,500 | -9.2% | 2 | 0.6% |
| District of Columbia | 803,400 | -0.6% | -9.7% | -0.4% | 0.3% | 718,200 | -85,200 | -10.6% | | 0.8% |

¹ Nonfarm employment per the U.S. Bureau of Labor Statistics

State Job Recovery Comparison (Relative to February 2020)



Job Recovery Compared to February 2020

| Job Recovery as of June 2020 | | | | Job Recovery as of September 2020 | | | | Job Recovery as of December 2020 | | | |
|------------------------------|----|----------------------|-------|-----------------------------------|----|----------------------|-------|----------------------------------|----|----------------------|--------|
| Relative to February 2020 | | | | Relative to February 2020 | | | | Relative to February 2020 | | | |
| | | United States | 34.3% | | | United States | 52.3% | | | United States | 55.2% |
| 50 | 1 | Idaho | 57.3% | 50 | 1 | Idaho | 86.4% | 50 | 1 | Alabama | 70.0% |
| 49 | 2 | Montana | 55.8% | 49 | 2 | Montana | 77.7% | 49 | 2 | Alaska | 44.7% |
| 48 | 3 | Utah | 50.4% | 48 | 3 | Utah | 76.1% | 48 | 3 | Arizona | 59.9% |
| 47 | 4 | Indiana | 47.7% | 47 | 4 | South Dakota | 69.4% | 47 | 4 | Arkansas | 72.6% |
| 46 | 5 | West Virginia | 47.0% | 46 | 5 | Indiana | 67.2% | 46 | 5 | California | 36.5% |
| 45 | 6 | Ohio | 46.1% | 45 | 6 | Mississippi | 66.1% | 45 | 6 | Colorado | 48.8% |
| 44 | 7 | Mississippi | 45.5% | 44 | 7 | Michigan | 64.8% | 44 | 7 | Connecticut | 57.1% |
| 43 | 8 | Michigan | 43.7% | 43 | 8 | New Hampshire | 63.1% | 43 | 8 | Delaware | 62.6% |
| 42 | 9 | South Carolina | 43.6% | 42 | 9 | South Carolina | 62.4% | 42 | 9 | Florida | 54.3% |
| 41 | 10 | Arizona | 43.4% | 41 | 10 | Delaware | 62.0% | 41 | 10 | Georgia | 64.4% |
| 40 | 11 | Tennessee | 42.6% | 40 | 11 | Ohio | 61.4% | 40 | 11 | Hawaii | 21.2% |
| 39 | 12 | Florida | 42.3% | 39 | 12 | Kentucky | 61.2% | 39 | 12 | Idaho | 103.8% |
| 38 | 13 | Arkansas | 41.4% | 38 | 13 | Tennessee | 58.9% | 38 | 13 | Illinois | 38.7% |
| 37 | 14 | Kentucky | 40.8% | 37 | 14 | Rhode Island | 58.7% | 37 | 14 | Indiana | 72.2% |
| 36 | 15 | Georgia | 39.2% | 36 | 15 | Arkansas | 58.5% | 36 | 15 | Iowa | 56.6% |
| 35 | 16 | Oklahoma | 39.1% | 35 | 16 | Wisconsin | 58.0% | 35 | 16 | Kansas | 53.1% |
| 34 | 17 | Alabama | 36.8% | 34 | 17 | Vermont | 58.0% | 34 | 17 | Kentucky | 60.9% |
| 33 | 18 | Pennsylvania | 36.2% | 33 | 18 | Missouri | 57.6% | 33 | 18 | Louisiana | 44.0% |
| 32 | 19 | Delaware | 36.0% | 32 | 19 | North Carolina | 57.6% | 32 | 19 | Maine | 59.0% |
| 31 | 20 | North Carolina | 35.8% | 31 | 20 | Maine | 57.5% | 31 | 20 | Maryland | 56.2% |
| 30 | 21 | Kansas | 35.5% | 30 | 21 | Alabama | 56.9% | 30 | 21 | Massachusetts | 45.5% |
| 29 | 22 | Vermont | 34.3% | 29 | 22 | Pennsylvania | 56.6% | 29 | 22 | Michigan | 59.7% |
| 28 | 23 | Rhode Island | 34.1% | 28 | 23 | Connecticut | 56.5% | 28 | 23 | Minnesota | 33.5% |
| 27 | 24 | Wisconsin | 33.9% | 27 | 24 | Nebraska | 54.8% | 27 | 24 | Mississippi | 75.3% |
| 26 | 25 | Missouri | 33.7% | 26 | 25 | Georgia | 53.6% | 26 | 25 | Missouri | 64.3% |
| 25 | 26 | South Dakota | 33.3% | 25 | 26 | Arizona | 53.2% | 25 | 26 | Montana | 81.4% |
| 24 | 27 | New Hampshire | 32.6% | 24 | 27 | Kansas | 53.2% | 24 | 27 | Nebraska | 64.3% |
| 23 | 28 | Colorado | 32.5% | 23 | 28 | West Virginia | 52.6% | 23 | 28 | Nevada | 51.0% |
| 22 | 29 | Texas | 31.2% | 22 | 29 | Colorado | 52.1% | 22 | 29 | New Hampshire | 57.3% |
| 21 | 30 | Connecticut | 29.8% | 21 | 30 | Florida | 51.8% | 21 | 30 | New Jersey | 49.1% |
| 20 | 31 | Nebraska | 29.1% | 20 | 31 | Virginia | 51.0% | 20 | 31 | New Mexico | 19.9% |
| 19 | 32 | Nevada | 27.2% | 19 | 32 | Iowa | 50.2% | 19 | 32 | New York | 43.9% |
| 18 | 33 | Iowa | 26.7% | 18 | 33 | New Jersey | 48.5% | 18 | 33 | North Carolina | 66.8% |
| 17 | 34 | California | 24.5% | 17 | 34 | Nevada | 47.3% | 17 | 34 | North Dakota | 40.3% |
| 16 | 35 | Oregon | 24.3% | 16 | 35 | Maryland | 46.2% | 16 | 35 | Ohio | 62.6% |
| 15 | 36 | Maine | 23.7% | 15 | 36 | Oregon | 45.7% | 15 | 36 | Oklahoma | 47.4% |
| 14 | 37 | North Dakota | 22.7% | 14 | 37 | New York | 45.1% | 14 | 37 | Oregon | 38.8% |
| 13 | 38 | Minnesota | 21.6% | 13 | 38 | Oklahoma | 44.8% | 13 | 38 | Pennsylvania | 56.6% |
| 12 | 39 | Louisiana | 21.3% | 12 | 39 | Minnesota | 44.2% | 12 | 39 | Rhode Island | 54.3% |
| 11 | 40 | Washington | 19.9% | 11 | 40 | Massachusetts | 43.3% | 11 | 40 | South Carolina | 74.3% |
| 10 | 41 | Maryland | 19.4% | 10 | 41 | Texas | 43.3% | 10 | 41 | South Dakota | 74.8% |
| 9 | 42 | Virginia | 19.3% | 9 | 42 | North Dakota | 42.0% | 9 | 42 | Tennessee | 67.6% |
| 8 | 43 | New York | 18.7% | 8 | 43 | Illinois | 40.9% | 8 | 43 | Texas | 58.4% |
| 7 | 44 | Massachusetts | 17.8% | 7 | 44 | Washington | 38.9% | 7 | 44 | Utah | 94.9% |
| 6 | 45 | New Mexico | 15.7% | 6 | 45 | California | 34.2% | 6 | 45 | Vermont | 55.3% |
| 5 | 46 | Illinois | 14.1% | 5 | 46 | Louisiana | 33.0% | 5 | 46 | Virginia | 56.3% |
| 4 | 47 | Hawaii | 11.6% | 4 | 47 | Wyoming | 31.3% | 4 | 47 | Washington | 40.6% |
| 3 | 48 | New Jersey | 8.7% | 3 | 48 | New Mexico | 27.8% | 3 | 48 | West Virginia | 53.7% |
| 2 | 49 | Wyoming | 6.4% | 2 | 49 | Alaska | 24.9% | 2 | 49 | Wisconsin | 59.1% |
| 1 | 50 | Alaska | 1.9% | 1 | 50 | Hawaii | 0.8% | 1 | 50 | Wyoming | 43.8% |
| | | District of Columbia | 2.3% | | | District of Columbia | 20.2% | | | District of Columbia | 18.4% |

Job Recovery Compared to February 2020

| Job Recovery as of March 2021 Relative to February 2020 | | |
|--|----------------------|--------|
| | United States | 62.1% |
| 50 1 | Idaho | 113.7% |
| 49 2 | Utah | 108.9% |
| 48 3 | Montana | 88.6% |
| 47 4 | South Dakota | 83.1% |
| 46 5 | Arkansas | 76.8% |
| 45 6 | Alabama | 74.5% |
| 44 7 | South Carolina | 74.4% |
| 43 8 | Nebraska | 73.6% |
| 42 9 | Mississippi | 73.4% |
| 41 10 | Indiana | 73.2% |
| 40 11 | New Hampshire | 73.1% |
| 39 12 | Tennessee | 73.1% |
| 38 13 | North Carolina | 72.0% |
| 37 14 | Maine | 70.8% |
| 36 15 | Georgia | 69.9% |
| 35 16 | Michigan | 69.7% |
| 34 17 | Arizona | 68.7% |
| 33 18 | Missouri | 68.6% |
| 32 19 | Texas | 68.4% |
| 31 20 | Kentucky | 67.5% |
| 30 21 | Ohio | 66.5% |
| 29 22 | Delaware | 65.2% |
| 28 23 | Kansas | 65.2% |
| 27 24 | West Virginia | 63.8% |
| 26 25 | Wisconsin | 63.3% |
| 25 26 | Rhode Island | 63.0% |
| 24 27 | Pennsylvania | 62.7% |
| 23 28 | Maryland | 62.2% |
| 22 29 | Iowa | 62.1% |
| 21 30 | Colorado | 61.4% |
| 20 31 | Vermont | 60.3% |
| 19 32 | Connecticut | 60.3% |
| 18 33 | Florida | 59.0% |
| 17 34 | Nevada | 57.7% |
| 16 35 | Virginia | 57.6% |
| 15 36 | Massachusetts | 56.0% |
| 14 37 | Washington | 55.5% |
| 13 38 | Oklahoma | 55.0% |
| 12 39 | Minnesota | 53.8% |
| 11 40 | North Dakota | 53.8% |
| 10 41 | New Jersey | 53.6% |
| 9 42 | Oregon | 53.5% |
| 8 43 | New York | 50.5% |
| 7 44 | Illinois | 49.5% |
| 6 45 | Alaska | 48.4% |
| 5 46 | Wyoming | 46.0% |
| 4 47 | Louisiana | 44.3% |
| 3 48 | California | 44.2% |
| 2 49 | New Mexico | 32.8% |
| 1 50 | Hawaii | 28.0% |
| | District of Columbia | 16.2% |

| Job Recovery as of June 2021 Relative to February 2020 | | |
|---|----------------------|--------|
| | United States | 70.4% |
| 50 1 | Utah | 118.4% |
| 49 2 | Idaho | 118.2% |
| 48 3 | Montana | 88.9% |
| 47 4 | Arizona | 87.3% |
| 46 5 | Tennessee | 84.5% |
| 45 6 | South Dakota | 84.5% |
| 44 7 | Arkansas | 79.9% |
| 43 8 | North Carolina | 78.9% |
| 42 9 | Mississippi | 78.8% |
| 41 10 | Georgia | 77.4% |
| 40 11 | Indiana | 76.8% |
| 39 12 | Nebraska | 76.4% |
| 38 13 | Texas | 76.4% |
| 37 14 | South Carolina | 75.0% |
| 36 15 | Maine | 74.9% |
| 35 16 | Alabama | 74.6% |
| 34 17 | Colorado | 73.3% |
| 33 18 | Missouri | 70.4% |
| 32 19 | Delaware | 69.9% |
| 31 20 | New Hampshire | 69.8% |
| 30 21 | Michigan | 69.8% |
| 29 22 | Florida | 69.8% |
| 28 23 | Vermont | 69.6% |
| 27 24 | West Virginia | 69.3% |
| 26 25 | Wisconsin | 68.8% |
| 25 26 | Kentucky | 68.3% |
| 24 27 | Ohio | 67.6% |
| 23 28 | Washington | 67.1% |
| 22 29 | Rhode Island | 66.9% |
| 21 30 | Nevada | 66.9% |
| 20 31 | Kansas | 66.7% |
| 19 32 | Pennsylvania | 65.5% |
| 18 33 | Maryland | 64.9% |
| 17 34 | Connecticut | 64.0% |
| 16 35 | Iowa | 63.3% |
| 15 36 | Massachusetts | 60.4% |
| 14 37 | Minnesota | 60.4% |
| 13 38 | Virginia | 60.3% |
| 12 39 | New Jersey | 59.6% |
| 11 40 | Oregon | 58.4% |
| 10 41 | Oklahoma | 57.7% |
| 9 42 | North Dakota | 56.7% |
| 8 43 | California | 54.1% |
| 7 44 | Illinois | 53.4% |
| 6 45 | New York | 52.4% |
| 5 46 | Louisiana | 44.7% |
| 4 47 | Hawaii | 41.4% |
| 3 48 | New Mexico | 40.6% |
| 2 49 | Wyoming | 38.9% |
| 1 50 | Alaska | 37.6% |
| | District of Columbia | 31.9% |

| Job Recovery as of September 2021 Relative to February 2020 | | |
|--|----------------------|--------|
| | United States | 78.8% |
| 50 1 | Utah | 134.4% |
| 49 2 | Idaho | 117.1% |
| 48 3 | Arizona | 95.1% |
| 47 4 | Texas | 92.0% |
| 46 5 | Montana | 88.9% |
| 45 6 | South Dakota | 87.2% |
| 44 7 | Georgia | 86.5% |
| 43 8 | Nebraska | 85.6% |
| 42 9 | South Carolina | 85.2% |
| 41 10 | Mississippi | 84.1% |
| 40 11 | Tennessee | 83.9% |
| 39 12 | Florida | 83.4% |
| 38 13 | Alabama | 82.8% |
| 37 14 | Arkansas | 82.5% |
| 36 15 | North Carolina | 82.0% |
| 35 16 | Washington | 81.4% |
| 34 17 | Colorado | 80.5% |
| 33 18 | Indiana | 80.1% |
| 32 19 | Missouri | 78.0% |
| 31 20 | New Hampshire | 76.9% |
| 30 21 | Rhode Island | 76.0% |
| 29 22 | Michigan | 74.7% |
| 28 23 | Kentucky | 74.5% |
| 27 24 | Kansas | 73.9% |
| 26 25 | Delaware | 73.7% |
| 25 26 | Maryland | 73.5% |
| 24 27 | Nevada | 73.3% |
| 23 28 | Ohio | 72.0% |
| 22 29 | West Virginia | 71.9% |
| 21 30 | Maine | 71.1% |
| 20 31 | Connecticut | 71.0% |
| 19 32 | Iowa | 70.9% |
| 18 33 | Wisconsin | 70.6% |
| 17 34 | Vermont | 69.3% |
| 16 35 | Pennsylvania | 68.9% |
| 15 36 | Oklahoma | 68.8% |
| 14 37 | Massachusetts | 68.8% |
| 13 38 | New Jersey | 68.7% |
| 12 39 | Minnesota | 68.7% |
| 11 40 | Virginia | 68.2% |
| 10 41 | Oregon | 68.0% |
| 9 42 | California | 63.8% |
| 8 43 | Illinois | 60.3% |
| 7 44 | North Dakota | 57.3% |
| 6 45 | New York | 57.2% |
| 5 46 | New Mexico | 52.5% |
| 4 47 | Alaska | 49.0% |
| 3 48 | Wyoming | 44.5% |
| 2 49 | Hawaii | 43.0% |
| 1 50 | Louisiana | 39.0% |
| | District of Columbia | 40.5% |

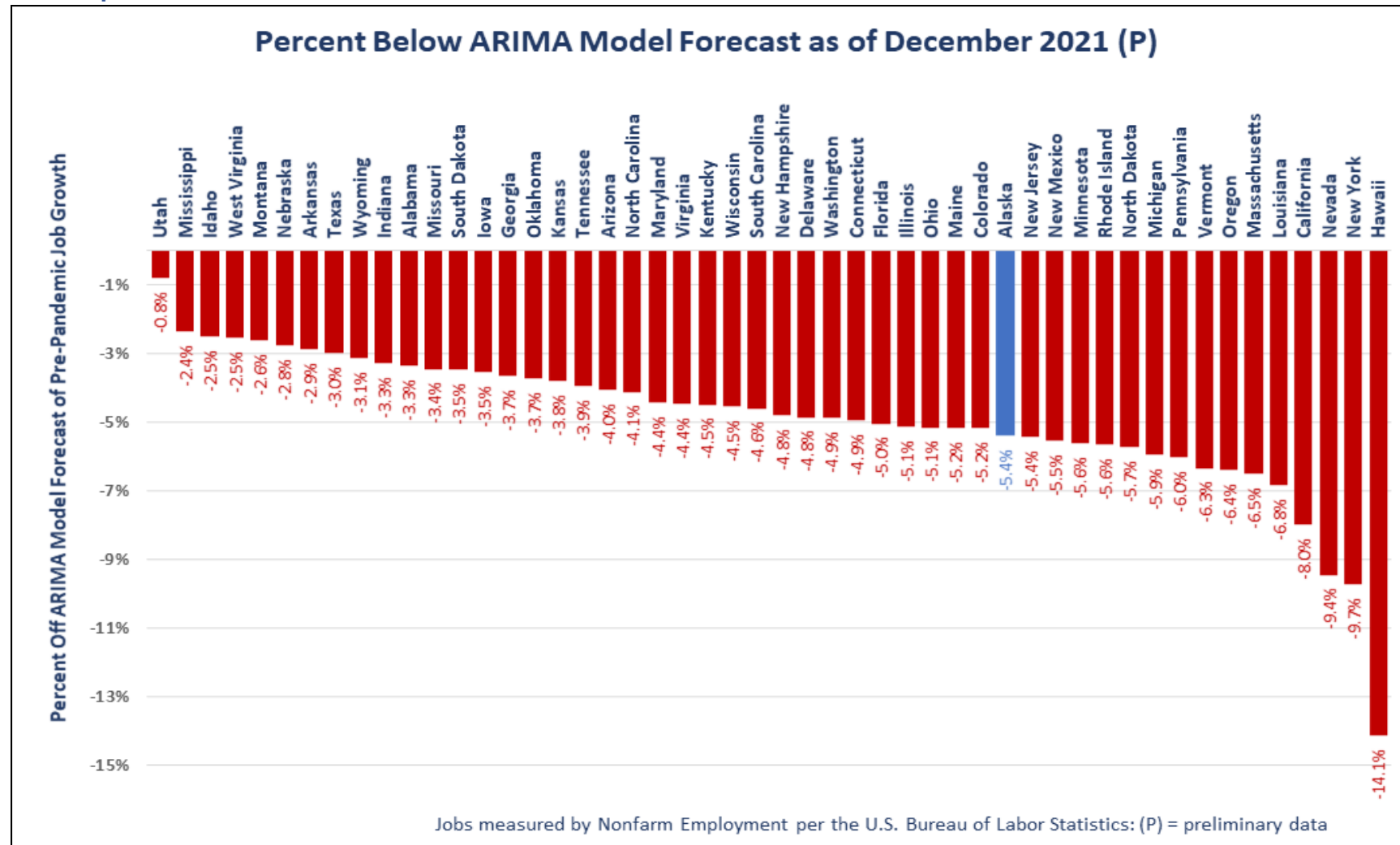
Job Recovery Compared to February 2020

| Job Recovery as of October 2021 Relative to February 2020 | | |
|--|----------------------|--------|
| | United States | 81.6% |
| 50 | 1 Utah | 140.1% |
| 49 | 2 Idaho | 117.2% |
| 48 | 3 Arizona | 98.9% |
| 47 | 4 Texas | 96.8% |
| 46 | 5 Montana | 91.2% |
| 45 | 6 Georgia | 90.0% |
| 44 | 7 Mississippi | 89.1% |
| 43 | 8 South Dakota | 89.0% |
| 42 | 9 Alabama | 88.7% |
| 41 | 10 Nebraska | 88.6% |
| 40 | 11 Arkansas | 88.2% |
| 39 | 12 Florida | 87.2% |
| 38 | 13 Tennessee | 86.9% |
| 37 | 14 North Carolina | 86.9% |
| 36 | 15 South Carolina | 86.2% |
| 35 | 16 Indiana | 83.8% |
| 34 | 17 Colorado | 83.1% |
| 33 | 18 Washington | 81.3% |
| 32 | 19 Missouri | 80.2% |
| 31 | 20 New Hampshire | 79.0% |
| 30 | 21 Michigan | 78.2% |
| 29 | 22 Nevada | 76.9% |
| 28 | 23 Maryland | 76.9% |
| 27 | 24 Kentucky | 76.6% |
| 26 | 25 Delaware | 76.0% |
| 25 | 26 Kansas | 74.7% |
| 24 | 27 Rhode Island | 74.6% |
| 23 | 28 Ohio | 74.0% |
| 22 | 29 West Virginia | 73.9% |
| 21 | 30 Connecticut | 73.4% |
| 20 | 31 New Jersey | 72.9% |
| 19 | 32 Maine | 72.7% |
| 18 | 33 Massachusetts | 72.7% |
| 17 | 34 Virginia | 72.1% |
| 16 | 35 Iowa | 72.0% |
| 15 | 36 Wisconsin | 71.9% |
| 14 | 37 Pennsylvania | 71.3% |
| 13 | 38 Minnesota | 71.1% |
| 12 | 39 Vermont | 70.2% |
| 11 | 40 Oregon | 70.2% |
| 10 | 41 Oklahoma | 70.2% |
| 9 | 42 California | 67.9% |
| 8 | 43 Illinois | 65.3% |
| 7 | 44 New York | 59.2% |
| 6 | 45 New Mexico | 59.0% |
| 5 | 46 Alaska | 58.7% |
| 4 | 47 North Dakota | 58.6% |
| 3 | 48 Louisiana | 51.8% |
| 2 | 49 Wyoming | 46.8% |
| 1 | 50 Hawaii | 44.2% |
| | District of Columbia | 46.9% |

| Job Recovery as of November 2021 Relative to February 2020 | | |
|---|----------------------|--------|
| | United States | 83.1% |
| 50 | 1 Utah | 142.9% |
| 49 | 2 Idaho | 119.0% |
| 48 | 3 Texas | 102.7% |
| 47 | 4 Arizona | 100.8% |
| 46 | 5 Montana | 94.9% |
| 45 | 6 Georgia | 93.0% |
| 44 | 7 Arkansas | 92.3% |
| 43 | 8 Florida | 91.1% |
| 42 | 9 Nebraska | 90.3% |
| 41 | 10 Tennessee | 89.1% |
| 40 | 11 North Carolina | 88.3% |
| 39 | 12 Mississippi | 88.2% |
| 38 | 13 Alabama | 88.0% |
| 37 | 14 South Carolina | 88.0% |
| 36 | 15 Indiana | 87.9% |
| 35 | 16 Colorado | 86.9% |
| 34 | 17 Washington | 85.6% |
| 33 | 18 South Dakota | 85.4% |
| 32 | 19 Missouri | 81.4% |
| 31 | 20 New Hampshire | 80.1% |
| 30 | 21 Maryland | 80.0% |
| 29 | 22 Michigan | 79.5% |
| 28 | 23 Kentucky | 79.0% |
| 27 | 24 Nevada | 78.0% |
| 26 | 25 Rhode Island | 77.8% |
| 25 | 26 Kansas | 77.0% |
| 24 | 27 Delaware | 77.0% |
| 23 | 28 New Jersey | 76.8% |
| 22 | 29 West Virginia | 76.1% |
| 21 | 30 Virginia | 76.0% |
| 20 | 31 Ohio | 76.0% |
| 19 | 32 Massachusetts | 74.7% |
| 18 | 33 Connecticut | 74.4% |
| 17 | 34 Minnesota | 74.3% |
| 16 | 35 Wisconsin | 74.1% |
| 15 | 36 Oregon | 73.4% |
| 14 | 37 Pennsylvania | 73.2% |
| 13 | 38 Iowa | 73.1% |
| 12 | 39 Maine | 73.0% |
| 11 | 40 Vermont | 71.2% |
| 10 | 41 Oklahoma | 70.3% |
| 9 | 42 California | 69.8% |
| 8 | 43 Illinois | 67.8% |
| 7 | 44 North Dakota | 63.5% |
| 6 | 45 New Mexico | 63.3% |
| 5 | 46 New York | 60.7% |
| 4 | 47 Alaska | 57.6% |
| 3 | 48 Louisiana | 55.5% |
| 2 | 49 Wyoming | 50.6% |
| 1 | 50 Hawaii | 45.1% |
| | District of Columbia | 46.4% |

| Job Recovery as of December 2021 (P) Relative to February 2020 | | |
|---|----------------------|--------|
| | United States | 84.0% |
| 50 | 1 Utah | 142.9% |
| 49 | 2 Idaho | 121.5% |
| 48 | 3 Texas | 106.2% |
| 47 | 4 Arizona | 104.3% |
| 46 | 5 Montana | 99.8% |
| 45 | 6 Georgia | 97.0% |
| 44 | 7 Arkansas | 93.2% |
| 43 | 8 Tennessee | 92.9% |
| 42 | 9 Florida | 92.1% |
| 41 | 10 North Carolina | 91.8% |
| 40 | 11 Mississippi | 91.0% |
| 39 | 12 Indiana | 90.9% |
| 38 | 13 Colorado | 89.3% |
| 37 | 14 Nebraska | 89.1% |
| 36 | 15 Washington | 88.9% |
| 35 | 16 South Carolina | 88.9% |
| 34 | 17 Alabama | 88.1% |
| 33 | 18 Missouri | 86.1% |
| 32 | 19 South Dakota | 82.4% |
| 31 | 20 Kentucky | 81.8% |
| 30 | 21 West Virginia | 81.7% |
| 29 | 22 New Hampshire | 81.4% |
| 28 | 23 Maryland | 81.2% |
| 27 | 24 Michigan | 80.6% |
| 26 | 25 Rhode Island | 80.2% |
| 25 | 26 Iowa | 79.7% |
| 24 | 27 Nevada | 79.1% |
| 23 | 28 Delaware | 78.9% |
| 22 | 29 Virginia | 78.6% |
| 21 | 30 New Jersey | 78.2% |
| 20 | 31 Massachusetts | 77.6% |
| 19 | 32 Kansas | 77.5% |
| 18 | 33 Ohio | 77.0% |
| 17 | 34 Oregon | 76.3% |
| 16 | 35 Wisconsin | 75.6% |
| 15 | 36 Maine | 74.9% |
| 14 | 37 Connecticut | 74.6% |
| 13 | 38 Pennsylvania | 74.5% |
| 12 | 39 Minnesota | 73.8% |
| 11 | 40 California | 71.7% |
| 10 | 41 Oklahoma | 71.5% |
| 9 | 42 Vermont | 71.0% |
| 8 | 43 Illinois | 70.5% |
| 7 | 44 New Mexico | 67.0% |
| 6 | 45 New York | 63.0% |
| 5 | 46 North Dakota | 61.5% |
| 4 | 47 Alaska | 59.6% |
| 3 | 48 Louisiana | 58.0% |
| 2 | 49 Wyoming | 53.6% |
| 1 | 50 Hawaii | 46.3% |
| | District of Columbia | 48.6% |

Job Impact: Percent Below ARIMA Forecast of Pre-Pandemic Job Growth



Percent Below ARIMA Model Forecast of Pre-Pandemic Job Growth

| Percent Below ARIMA Model Forecast of June 2020 | | | Percent Below ARIMA Model Forecast as of September 2020 | | | Percent Below ARIMA Model Forecast as of December 2020 | | |
|--|----------------------|--------|--|----------------------|--------|---|----------------------|--------|
| | United States | -10.1% | | United States | -7.8% | | United States | -7.8% |
| 50 | 1 Utah | -5.2% | 50 | 1 Idaho | -2.9% | 50 | 1 Idaho | -1.8% |
| 49 | 2 Idaho | -5.3% | 49 | 2 Utah | -3.5% | 49 | 2 Utah | -2.4% |
| 48 | 3 Oklahoma | -6.1% | 48 | 3 South Dakota | -3.6% | 48 | 3 South Dakota | -3.3% |
| 47 | 4 Arkansas | -6.1% | 47 | 4 Montana | -3.8% | 47 | 4 Montana | -3.7% |
| 46 | 5 Montana | -6.3% | 46 | 5 Nebraska | -4.7% | 46 | 5 Mississippi | -3.7% |
| 45 | 6 Nebraska | -6.9% | 45 | 6 Mississippi | -4.7% | 45 | 6 Arkansas | -3.8% |
| 44 | 7 South Dakota | -7.0% | 44 | 7 Arkansas | -4.8% | 44 | 7 Wyoming | -4.1% |
| 43 | 8 Arizona | -7.1% | 43 | 8 Wyoming | -5.4% | 43 | 8 Nebraska | -4.2% |
| 42 | 9 Mississippi | -7.2% | 42 | 9 Oklahoma | -5.5% | 42 | 9 Alabama | -4.4% |
| 41 | 10 Kansas | -7.4% | 41 | 10 Kansas | -5.6% | 41 | 10 South Carolina | -5.0% |
| 40 | 11 Tennessee | -7.4% | 40 | 11 Alabama | -5.7% | 40 | 11 Missouri | -5.1% |
| 39 | 12 West Virginia | -7.4% | 39 | 12 Indiana | -5.7% | 39 | 12 Indiana | -5.2% |
| 38 | 13 Alabama | -7.8% | 38 | 13 Missouri | -5.8% | 38 | 13 Tennessee | -5.2% |
| 37 | 14 Wyoming | -8.0% | 37 | 14 Tennessee | -5.8% | 37 | 14 Oklahoma | -5.4% |
| 36 | 15 Texas | -8.3% | 36 | 15 Iowa | -6.0% | 36 | 15 Iowa | -5.4% |
| 35 | 16 Iowa | -8.4% | 35 | 16 Wisconsin | -6.0% | 35 | 16 North Carolina | -5.5% |
| 34 | 17 Missouri | -8.5% | 34 | 17 Delaware | -6.1% | 34 | 17 Kansas | -5.8% |
| 33 | 18 Georgia | -8.5% | 33 | 18 North Carolina | -6.2% | 33 | 18 Virginia | -6.0% |
| 32 | 19 South Carolina | -8.5% | 32 | 19 South Carolina | -6.3% | 32 | 19 Wisconsin | -6.0% |
| 31 | 20 North Carolina | -8.5% | 31 | 20 Kentucky | -6.3% | 31 | 20 Georgia | -6.1% |
| 30 | 21 Indiana | -8.6% | 30 | 21 Virginia | -6.4% | 30 | 21 Delaware | -6.2% |
| 29 | 22 Ohio | -8.8% | 29 | 22 Ohio | -6.5% | 29 | 22 Texas | -6.2% |
| 28 | 23 Florida | -8.8% | 28 | 23 New Hampshire | -6.6% | 28 | 23 West Virginia | -6.5% |
| 27 | 24 Wisconsin | -9.1% | 27 | 24 West Virginia | -6.6% | 27 | 24 Arizona | -6.5% |
| 26 | 25 Kentucky | -9.2% | 26 | 25 Arizona | -6.6% | 26 | 25 Ohio | -6.5% |
| 25 | 26 North Dakota | -9.5% | 25 | 26 Maine | -6.8% | 25 | 26 Kentucky | -6.6% |
| 24 | 27 Colorado | -9.6% | 24 | 27 Georgia | -7.0% | 24 | 27 Maine | -6.7% |
| 23 | 28 Delaware | -9.7% | 23 | 28 North Dakota | -7.2% | 23 | 28 Maryland | -7.1% |
| 22 | 29 Virginia | -9.8% | 22 | 29 Texas | -7.4% | 22 | 29 North Dakota | -7.5% |
| 21 | 30 Washington | -10.1% | 21 | 30 Colorado | -7.5% | 21 | 30 Alaska | -7.5% |
| 20 | 31 New Mexico | -10.5% | 20 | 31 Connecticut | -7.6% | 20 | 31 Connecticut | -7.6% |
| 19 | 32 Minnesota | -11.2% | 19 | 32 Florida | -7.9% | 19 | 32 New Hampshire | -7.8% |
| 18 | 33 Louisiana | -11.4% | 18 | 33 Illinois | -8.2% | 18 | 33 Florida | -8.1% |
| 17 | 34 Oregon | -11.4% | 17 | 34 Minnesota | -8.2% | 17 | 34 Louisiana | -8.3% |
| 16 | 35 New Hampshire | -11.5% | 16 | 35 Washington | -8.2% | 16 | 35 Colorado | -8.4% |
| 15 | 36 Maine | -11.6% | 15 | 36 Maryland | -8.3% | 15 | 36 Washington | -8.5% |
| 14 | 37 Illinois | -11.7% | 14 | 37 Pennsylvania | -8.4% | 14 | 37 Pennsylvania | -8.6% |
| 13 | 38 Maryland | -11.9% | 13 | 38 Vermont | -8.5% | 13 | 38 Illinois | -8.7% |
| 12 | 39 Pennsylvania | -12.1% | 12 | 39 Michigan | -8.7% | 12 | 39 Vermont | -9.1% |
| 11 | 40 California | -12.2% | 11 | 40 Oregon | -8.7% | 11 | 40 New Jersey | -9.3% |
| 10 | 41 Connecticut | -12.2% | 10 | 41 Rhode Island | -9.2% | 10 | 41 Michigan | -10.0% |
| 9 | 42 Vermont | -13.3% | 9 | 42 New Jersey | -9.2% | 9 | 42 Minnesota | -10.0% |
| 8 | 43 Michigan | -13.6% | 8 | 43 New Mexico | -9.2% | 8 | 43 Oregon | -10.1% |
| 7 | 44 Alaska | -13.7% | 7 | 44 Louisiana | -9.8% | 7 | 44 Rhode Island | -10.3% |
| 6 | 45 Rhode Island | -14.2% | 6 | 45 Alaska | -10.3% | 6 | 45 New Mexico | -10.4% |
| 5 | 46 Massachusetts | -15.5% | 5 | 46 Massachusetts | -11.2% | 5 | 46 Massachusetts | -11.1% |
| 4 | 47 New Jersey | -15.7% | 4 | 47 California | -11.2% | 4 | 47 California | -11.3% |
| 3 | 48 New York | -16.8% | 3 | 48 New York | -11.7% | 3 | 48 New York | -12.3% |
| 2 | 49 Nevada | -17.8% | 2 | 49 Nevada | -13.8% | 2 | 49 Nevada | -13.4% |
| 1 | 50 Hawaii | -20.7% | 1 | 50 Hawaii | -23.4% | 1 | 50 Hawaii | -18.9% |
| | District of Columbia | -10.7% | | District of Columbia | -9.1% | | District of Columbia | -9.6% |

Percent Below ARIMA Model Forecast of Pre-Pandemic Job Growth

| Percent Below ARIMA Model Forecast as of March 2021 | | | Percent Below ARIMA Model Forecast as of June 2021 | | | Percent Below ARIMA Model Forecast as of September 2021 | | |
|--|----------------------|--------|---|----------------------|--------|--|----------------------|--------|
| | United States | -7.2% | | United States | -6.3% | | United States | -5.4% |
| 50 | 1 Idaho | -1.4% | 50 | 1 Idaho | -1.6% | 50 | 1 Utah | -0.9% |
| 49 | 2 Utah | -1.8% | 49 | 2 Utah | -1.6% | 49 | 2 Idaho | -2.3% |
| 48 | 3 South Dakota | -2.7% | 48 | 3 South Dakota | -2.8% | 48 | 3 South Dakota | -2.8% |
| 47 | 4 Montana | -3.0% | 47 | 4 Montana | -3.3% | 47 | 4 Nebraska | -2.9% |
| 46 | 5 Nebraska | -3.5% | 46 | 5 Nebraska | -3.5% | 46 | 5 Mississippi | -3.1% |
| 45 | 6 Arkansas | -3.6% | 45 | 6 Arkansas | -3.6% | 45 | 6 Montana | -3.6% |
| 44 | 7 Wyoming | -3.8% | 44 | 7 Mississippi | -3.6% | 44 | 7 Arkansas | -3.6% |
| 43 | 8 Mississippi | -4.1% | 43 | 8 Tennessee | -4.1% | 43 | 8 Alabama | -3.7% |
| 42 | 9 Alabama | -4.2% | 42 | 9 West Virginia | -4.3% | 42 | 9 Oklahoma | -3.8% |
| 41 | 10 Kansas | -4.6% | 41 | 10 Alabama | -4.4% | 41 | 10 West Virginia | -3.9% |
| 40 | 11 Oklahoma | -4.8% | 40 | 11 Wyoming | -4.4% | 40 | 11 Wyoming | -3.9% |
| 39 | 12 Missouri | -4.9% | 39 | 12 Kansas | -4.6% | 39 | 12 Kansas | -4.0% |
| 38 | 13 Iowa | -4.9% | 38 | 13 Oklahoma | -4.7% | 38 | 13 Texas | -4.0% |
| 37 | 14 Tennessee | -5.0% | 37 | 14 Arizona | -4.7% | 37 | 14 Missouri | -4.2% |
| 36 | 15 West Virginia | -5.0% | 36 | 15 Maine | -4.8% | 36 | 15 Iowa | -4.3% |
| 35 | 16 Maine | -5.2% | 35 | 16 North Carolina | -4.8% | 35 | 16 Arizona | -4.4% |
| 34 | 17 North Carolina | -5.3% | 34 | 17 Missouri | -4.9% | 34 | 17 Georgia | -4.5% |
| 33 | 18 Indiana | -5.3% | 33 | 18 Indiana | -4.9% | 33 | 18 Tennessee | -4.6% |
| 32 | 19 South Carolina | -5.3% | 32 | 19 Iowa | -5.0% | 32 | 19 Indiana | -4.7% |
| 31 | 20 New Hampshire | -5.4% | 31 | 20 Wisconsin | -5.1% | 31 | 20 South Carolina | -4.7% |
| 30 | 21 Wisconsin | -5.6% | 30 | 21 Texas | -5.2% | 30 | 21 North Carolina | -4.9% |
| 29 | 22 Texas | -5.6% | 29 | 22 Georgia | -5.3% | 29 | 22 Wisconsin | -5.0% |
| 28 | 23 Georgia | -5.8% | 28 | 23 Delaware | -5.6% | 28 | 23 Washington | -5.3% |
| 27 | 24 Kentucky | -5.9% | 27 | 24 South Carolina | -5.7% | 27 | 24 Maryland | -5.3% |
| 26 | 25 North Dakota | -6.0% | 26 | 25 North Dakota | -5.9% | 26 | 25 New Hampshire | -5.3% |
| 25 | 26 Delaware | -6.1% | 25 | 26 Kentucky | -6.0% | 25 | 26 Kentucky | -5.3% |
| 24 | 27 Virginia | -6.1% | 24 | 27 Virginia | -6.0% | 24 | 27 Delaware | -5.3% |
| 23 | 28 Arizona | -6.1% | 23 | 28 Ohio | -6.2% | 23 | 28 Virginia | -5.4% |
| 22 | 29 Ohio | -6.1% | 22 | 29 Colorado | -6.2% | 22 | 29 Connecticut | -5.5% |
| 21 | 30 Maryland | -6.4% | 21 | 30 New Hampshire | -6.2% | 21 | 30 Maine | -5.5% |
| 20 | 31 Alaska | -7.0% | 20 | 31 Maryland | -6.3% | 20 | 31 Florida | -5.7% |
| 19 | 32 Connecticut | -7.2% | 19 | 32 Washington | -6.4% | 19 | 32 Ohio | -5.7% |
| 18 | 33 Washington | -7.3% | 18 | 33 Vermont | -6.4% | 18 | 33 Colorado | -5.8% |
| 17 | 34 Colorado | -7.3% | 17 | 34 Connecticut | -6.6% | 17 | 34 North Dakota | -6.0% |
| 16 | 35 Illinois | -7.4% | 16 | 35 Minnesota | -6.9% | 16 | 35 Minnesota | -6.0% |
| 15 | 36 Minnesota | -7.5% | 15 | 36 Florida | -7.0% | 15 | 36 Rhode Island | -6.3% |
| 14 | 37 Pennsylvania | -7.7% | 14 | 37 Illinois | -7.0% | 14 | 37 Illinois | -6.3% |
| 13 | 38 Michigan | -7.9% | 13 | 38 Pennsylvania | -7.3% | 13 | 38 Vermont | -6.6% |
| 12 | 39 Florida | -8.0% | 12 | 39 Rhode Island | -8.0% | 12 | 39 New Jersey | -6.8% |
| 11 | 40 Vermont | -8.2% | 11 | 40 Michigan | -8.0% | 11 | 40 Pennsylvania | -6.9% |
| 10 | 41 Oregon | -8.4% | 10 | 41 New Jersey | -8.1% | 10 | 41 Alaska | -6.9% |
| 9 | 42 Louisiana | -8.4% | 9 | 42 Oregon | -8.1% | 9 | 42 Michigan | -7.1% |
| 8 | 43 Rhode Island | -8.6% | 8 | 43 New Mexico | -8.3% | 8 | 43 New Mexico | -7.1% |
| 7 | 44 New Jersey | -8.8% | 7 | 44 Louisiana | -8.5% | 7 | 44 Oregon | -7.1% |
| 6 | 45 New Mexico | -9.0% | 6 | 45 Alaska | -8.5% | 6 | 45 Massachusetts | -7.8% |
| 5 | 46 Massachusetts | -9.5% | 5 | 46 Massachusetts | -9.0% | 5 | 46 California | -8.7% |
| 4 | 47 California | -10.6% | 4 | 47 California | -9.6% | 4 | 47 Louisiana | -9.4% |
| 3 | 48 New York | -11.3% | 3 | 48 Nevada | -11.0% | 3 | 48 Nevada | -10.1% |
| 2 | 49 Nevada | -12.5% | 2 | 49 New York | -11.2% | 2 | 49 New York | -10.6% |
| 1 | 50 Hawaii | -17.6% | 1 | 50 Hawaii | -14.8% | 1 | 50 Hawaii | -14.7% |
| | District of Columbia | -10.1% | | District of Columbia | -8.7% | | District of Columbia | -8.1% |

Percent Off ARIMA Forecast of Pre-Pandemic Job Growth

| Percent Below ARIMA Model Forecast as of October 2021 | | | Percent Below ARIMA Model Forecast as of November 2021 (P) | | | Percent Below ARIMA Model Forecast as of December 2021 (P) | | |
|---|----------------------|--------|--|----------------------|--------|--|----------------------|--------|
| | United States | -5.2% | | United States | -5.1% | | United States | -5.1% |
| 50 | 1 Utah | -0.6% | 50 | 1 Utah | -0.6% | 50 | 1 Utah | -0.8% |
| 49 | 2 Mississippi | -2.5% | 49 | 2 Idaho | -2.5% | 49 | 2 Mississippi | -2.4% |
| 48 | 3 Idaho | -2.5% | 48 | 3 Nebraska | -2.6% | 48 | 3 Idaho | -2.5% |
| 47 | 4 Nebraska | -2.7% | 47 | 4 Mississippi | -2.7% | 47 | 4 West Virginia | -2.5% |
| 46 | 5 South Dakota | -2.7% | 46 | 5 Arkansas | -2.9% | 46 | 5 Montana | -2.6% |
| 45 | 6 Alabama | -3.1% | 45 | 6 South Dakota | -3.1% | 45 | 6 Nebraska | -2.8% |
| 44 | 7 Arkansas | -3.2% | 44 | 7 Montana | -3.2% | 44 | 7 Arkansas | -2.9% |
| 43 | 8 Montana | -3.5% | 43 | 8 Texas | -3.2% | 43 | 8 Texas | -3.0% |
| 42 | 9 West Virginia | -3.6% | 42 | 9 Alabama | -3.3% | 42 | 9 Wyoming | -3.1% |
| 41 | 10 Texas | -3.7% | 41 | 10 West Virginia | -3.3% | 41 | 10 Indiana | -3.3% |
| 40 | 11 Oklahoma | -3.7% | 40 | 11 Wyoming | -3.4% | 40 | 11 Alabama | -3.3% |
| 39 | 12 Wyoming | -3.8% | 39 | 12 Indiana | -3.6% | 39 | 12 Missouri | -3.4% |
| 38 | 13 Kansas | -4.0% | 38 | 13 Oklahoma | -3.8% | 38 | 13 South Dakota | -3.5% |
| 37 | 14 Missouri | -4.0% | 37 | 14 Kansas | -3.8% | 37 | 14 Iowa | -3.5% |
| 36 | 15 Indiana | -4.2% | 36 | 15 Missouri | -3.9% | 36 | 15 Georgia | -3.7% |
| 35 | 16 Arizona | -4.2% | 35 | 16 Georgia | -4.0% | 35 | 16 Oklahoma | -3.7% |
| 34 | 17 Georgia | -4.3% | 34 | 17 Iowa | -4.2% | 34 | 17 Kansas | -3.8% |
| 33 | 18 Iowa | -4.3% | 33 | 18 Arizona | -4.2% | 33 | 18 Tennessee | -3.9% |
| 32 | 19 Tennessee | -4.3% | 32 | 19 Tennessee | -4.2% | 32 | 19 Arizona | -4.0% |
| 31 | 20 North Carolina | -4.4% | 31 | 20 North Carolina | -4.4% | 31 | 20 North Carolina | -4.1% |
| 30 | 21 South Carolina | -4.7% | 30 | 21 Maryland | -4.5% | 30 | 21 Maryland | -4.4% |
| 29 | 22 Maryland | -4.9% | 29 | 22 South Carolina | -4.6% | 29 | 22 Virginia | -4.4% |
| 28 | 23 Wisconsin | -4.9% | 28 | 23 Virginia | -4.7% | 28 | 23 Kentucky | -4.5% |
| 27 | 24 New Hampshire | -5.0% | 27 | 24 Wisconsin | -4.7% | 27 | 24 Wisconsin | -4.5% |
| 26 | 25 Virginia | -5.0% | 26 | 25 Kentucky | -4.8% | 26 | 25 South Carolina | -4.6% |
| 25 | 26 Kentucky | -5.1% | 25 | 26 New Hampshire | -4.9% | 25 | 26 New Hampshire | -4.8% |
| 24 | 27 Delaware | -5.1% | 24 | 27 Connecticut | -5.0% | 24 | 27 Delaware | -4.8% |
| 23 | 28 Connecticut | -5.1% | 23 | 28 Florida | -5.0% | 23 | 28 Washington | -4.9% |
| 22 | 29 Florida | -5.3% | 22 | 29 Delaware | -5.0% | 22 | 29 Connecticut | -4.9% |
| 21 | 30 Maine | -5.3% | 21 | 30 Washington | -5.1% | 21 | 30 Florida | -5.0% |
| 20 | 31 Washington | -5.4% | 20 | 31 Ohio | -5.2% | 20 | 31 Illinois | -5.1% |
| 19 | 32 Ohio | -5.5% | 19 | 32 Colorado | -5.3% | 19 | 32 Ohio | -5.1% |
| 18 | 33 Alaska | -5.5% | 18 | 33 Maine | -5.4% | 18 | 33 Maine | -5.2% |
| 17 | 34 Colorado | -5.6% | 17 | 34 North Dakota | -5.4% | 17 | 34 Colorado | -5.2% |
| 16 | 35 Illinois | -5.7% | 16 | 35 Illinois | -5.4% | 16 | 35 Alaska | -5.4% |
| 15 | 36 Minnesota | -5.8% | 15 | 36 Minnesota | -5.5% | 15 | 36 New Jersey | -5.4% |
| 14 | 37 North Dakota | -5.9% | 14 | 37 New Jersey | -5.6% | 14 | 37 New Mexico | -5.5% |
| 13 | 38 New Jersey | -6.1% | 13 | 38 Alaska | -5.7% | 13 | 38 Minnesota | -5.6% |
| 12 | 39 Michigan | -6.3% | 12 | 39 New Mexico | -5.9% | 12 | 39 Rhode Island | -5.6% |
| 11 | 40 New Mexico | -6.4% | 11 | 40 Michigan | -6.1% | 11 | 40 North Dakota | -5.7% |
| 10 | 41 Vermont | -6.4% | 10 | 41 Rhode Island | -6.1% | 10 | 41 Michigan | -5.9% |
| 9 | 42 Pennsylvania | -6.5% | 9 | 42 Pennsylvania | -6.2% | 9 | 42 Pennsylvania | -6.0% |
| 8 | 43 Rhode Island | -6.7% | 8 | 43 Vermont | -6.3% | 8 | 43 Vermont | -6.3% |
| 7 | 44 Oregon | -6.9% | 7 | 44 Oregon | -6.6% | 7 | 44 Oregon | -6.4% |
| 6 | 45 Massachusetts | -7.2% | 6 | 45 Massachusetts | -6.9% | 6 | 45 Massachusetts | -6.5% |
| 5 | 46 Louisiana | -7.6% | 5 | 46 Louisiana | -7.2% | 5 | 46 Louisiana | -6.8% |
| 4 | 47 California | -8.2% | 4 | 47 California | -8.1% | 4 | 47 California | -8.0% |
| 3 | 48 Nevada | -9.5% | 3 | 48 Nevada | -9.5% | 3 | 48 Nevada | -9.4% |
| 2 | 49 New York | -10.3% | 2 | 49 New York | -10.1% | 2 | 49 New York | -9.7% |
| 1 | 50 Hawaii | -14.5% | 1 | 50 Hawaii | -14.3% | 1 | 50 Hawaii | -14.1% |
| | District of Columbia | -7.5% | | District of Columbia | -7.6% | | District of Columbia | -7.5% |

Severity of Governmental Actions: March 1, 2020 through March 31, 2021

| State | Government Severity Index | | | Abridged Oxford Stringency Index | | | Average Rank of Both Indexes |
|----------------|---------------------------|---------------------|------|----------------------------------|---------------------|------|------------------------------|
| | Total Score | Average Daily Score | Rank | Total Score | Average Daily Score | Rank | |
| Washington | 32,145 | 81.2 | 1 | 19,731 | 49.8 | 14 | 7.5 |
| Hawaii | 30,555 | 77.2 | 2 | 26,250 | 66.3 | 2 | 2 |
| New York | 29,350 | 74.1 | 3 | 25,508 | 64.4 | 3 | 3 |
| Colorado | 28,870 | 72.9 | 4 | 16,897 | 42.7 | 25 | 14.5 |
| California | 27,772 | 70.1 | 5 | 22,080 | 55.8 | 7 | 6 |
| Illinois | 27,721 | 70.0 | 6 | 18,499 | 46.7 | 18 | 12 |
| New Mexico | 26,840 | 67.8 | 7 | 26,593 | 67.2 | 1 | 4 |
| Texas | 26,762 | 67.6 | 8 | 17,040 | 43.0 | 24 | 16 |
| Michigan | 26,100 | 65.9 | 9 | 17,928 | 45.3 | 21 | 15 |
| Connecticut | 25,818 | 65.2 | 10 | 21,887 | 55.3 | 8 | 9 |
| Maryland | 25,803 | 65.2 | 11 | 20,136 | 50.8 | 11 | 11 |
| Vermont | 25,016 | 63.2 | 12 | 22,306 | 56.3 | 5 | 8.5 |
| New Jersey | 24,810 | 62.7 | 13 | 17,788 | 44.9 | 22 | 17.5 |
| Minnesota | 24,758 | 62.5 | 14 | 19,141 | 48.3 | 17 | 15.5 |
| Massachusetts | 24,648 | 62.2 | 15 | 21,680 | 54.7 | 9 | 12 |
| Kentucky | 23,713 | 59.9 | 16 | 19,883 | 50.2 | 13 | 14.5 |
| Arkansas | 23,603 | 59.6 | 17 | 14,501 | 36.6 | 39 | 28 |
| Maine | 23,441 | 59.2 | 18 | 22,204 | 56.1 | 6 | 12 |
| North Carolina | 22,878 | 57.8 | 19 | 20,296 | 51.3 | 10 | 14.5 |
| Nevada | 22,844 | 57.7 | 20 | 14,942 | 37.7 | 36 | 28 |
| Louisiana | 22,257 | 56.2 | 21 | 16,875 | 42.6 | 26 | 23.5 |
| Pennsylvania | 22,249 | 56.2 | 22 | 17,111 | 43.2 | 23 | 22.5 |
| West Virginia | 21,880 | 55.3 | 23 | 18,024 | 45.5 | 20 | 21.5 |
| Arizona | 21,448 | 54.2 | 24 | 13,498 | 34.1 | 44 | 34 |
| Wisconsin | 21,364 | 53.9 | 25 | 14,750 | 37.2 | 37 | 31 |
| Florida | 21,349 | 53.9 | 26 | 15,764 | 39.8 | 29 | 27.5 |
| Mississippi | 21,067 | 53.2 | 27 | 13,642 | 34.5 | 41 | 34 |
| Alabama | 20,913 | 52.8 | 28 | 11,219 | 28.3 | 45 | 36.5 |
| Virginia | 20,698 | 52.3 | 29 | 16,498 | 41.7 | 27 | 28 |
| South Carolina | 20,461 | 51.7 | 30 | 13,596 | 34.3 | 43 | 36.5 |
| Delaware | 20,459 | 51.7 | 31 | 19,968 | 50.4 | 12 | 21.5 |
| Georgia | 18,821 | 47.5 | 32 | 15,375 | 38.8 | 32 | 32 |
| Idaho | 18,725 | 47.3 | 33 | 15,033 | 38.0 | 35 | 34 |
| Oregon | 18,683 | 47.2 | 34 | 19,223 | 48.5 | 16 | 25 |
| Rhode Island | 18,539 | 46.8 | 35 | 23,325 | 58.9 | 4 | 19.5 |
| Utah | 18,528 | 46.8 | 36 | 10,282 | 26.0 | 47 | 41.5 |
| Kansas | 18,454 | 46.6 | 37 | 15,406 | 38.9 | 31 | 34 |
| Indiana | 18,114 | 45.7 | 38 | 14,691 | 37.1 | 38 | 38 |
| Montana | 17,409 | 44.0 | 39 | 15,336 | 38.7 | 33 | 36 |
| New Hampshire | 15,405 | 38.9 | 40 | 16,024 | 40.5 | 28 | 34 |
| Wyoming | 14,580 | 36.8 | 41 | 15,076 | 38.1 | 34 | 37.5 |
| Alaska | 13,219 | 33.4 | 42 | 18,389 | 46.4 | 19 | 30.5 |
| Oklahoma | 11,570 | 29.2 | 43 | 10,950 | 27.7 | 46 | 44.5 |
| Tennessee | 9,838 | 24.8 | 44 | 15,629 | 39.5 | 30 | 37 |
| Missouri | 9,155 | 23.1 | 45 | 14,416 | 36.4 | 40 | 42.5 |
| Nebraska | 8,574 | 21.7 | 46 | 13,605 | 34.4 | 42 | 44 |
| Iowa | 6,208 | 15.7 | 47 | 8,585 | 21.7 | 49 | 48 |
| North Dakota | 4,580 | 11.6 | 48 | 8,694 | 22.0 | 48 | 48 |
| South Dakota | 3,480 | 8.8 | 49 | 4,756 | 12.0 | 50 | 49.5 |
| Ohio | 2,280 | 5.8 | 50 | 19,592 | 49.5 | 15 | 32.5 |

Summary of Key Regression Statistics for Nonfarm Employment

The Georgia Center for Opportunity completed a multiple-regression analysis of employment versus the severity of governmental actions in shutting down the economies, such as business closures, stay-at-home orders, gatherings restrictions, and school closures. In addition, the study ran bivariate regressions of governmental restrictions with COVID confirmed cases, hospitalizations, and deaths.

The results showed statistically significant evidence that the severity of governmental actions was negatively associated with employment 12 months and 15 months after the initiation of the pandemic (i.e., March 2020). Likewise, the proportion of the tourism and related industries to the overall size of the states' economies and the population densities also were found to be significant factors associated with influencing employment. The prevalence of COVID-19 cases had a possible but questionable association.

For the bivariate analyses, only COVID cases showed a statistically significant association with the severity of governmental actions, and not hospitalizations or deaths.

The full report of the study is available at <https://georgiaopportunity.org/state-pandemic-response-impact-on-work-opportunity>.

| Description | Government Severity Index | | Abridged Oxford Stringency Index | |
|---|--|-----------|--|-----------|
| | March 2021 | June 2021 | March 2021 | June 2021 |
| Government response statistics per regression analyses with alpha = 0.2 and HC3: | | | | |
| t-statistic | -2.25 | -1.58 | -4.96 | -4.55 |
| p-value | 2.93E-02 | 1.22E-01 | 1.01E-05 | 3.87E-05 |
| marginal effects | -0.007 | -0.005 | -0.013 | -0.012 |
| Linear equation statistics per the same regression analyses: | | | | |
| multiple R | 0.770 | 0.704 | 0.815 | 0.769 |
| R square | 0.593 | 0.495 | 0.665 | 0.592 |
| Adjusted R square | 0.557 | 0.450 | 0.643 | 0.565 |
| Other factors in linear equation | Tourism Proportion Population Density Covid Prevalence | | Tourism Proportion Population Density | |

Statistical Package

The regression analyses used in the study were generated using the Real Statistics Resource Pack software (Release 7.6). Copyright (2013 – 2021) Charles Zaiontz: www.real-statistics.com.

Economic Impact per the Multiple Regression Analyses

Marginal effect is the metric used to determine the associated economic impact of governmental actions on employment. This is a relative metric comparing the linear equation relationship among the states per the results of the multiple regression analysis. The impact is measured per each standard deviation (σ) in the severity score based on the ARIMA Model forecast, not the pre-pandemic employment in February 2020. Note that a two standard deviation movement would result in double the effect.

| Month of ARIMA => Model Forecast | March 2021 | | June 2021 | |
|-------------------------------------|----------------------------------|-----------|-----------|-----------|
| Marginal Effect => | 0.7% | 1.3% | 0.5% | 1.2% |
| Area | Impact on jobs per each σ | | | |
| United States | 1,086,069 | 2,016,985 | 778,753 | 1,869,007 |
| Alabama | 14,781 | 27,450 | 10,586 | 25,406 |
| Alaska | 2,302 | 4,274 | 1,644 | 3,944 |
| Arizona | 21,545 | 40,013 | 15,485 | 37,164 |
| Arkansas | 9,171 | 17,033 | 6,571 | 15,770 |
| California | 126,474 | 234,880 | 90,810 | 217,944 |
| Colorado | 20,185 | 37,486 | 14,494 | 34,784 |
| Connecticut | 11,913 | 22,123 | 8,518 | 20,442 |
| Delaware | 3,310 | 6,146 | 2,370 | 5,688 |
| Florida | 65,041 | 120,791 | 46,715 | 112,115 |
| Georgia | 33,308 | 61,858 | 23,901 | 57,362 |
| Hawaii | 4,689 | 8,709 | 3,360 | 8,063 |
| Idaho | 5,571 | 10,345 | 4,004 | 9,608 |
| Illinois | 43,282 | 80,382 | 30,977 | 74,345 |
| Indiana | 22,390 | 41,581 | 16,032 | 38,477 |
| Iowa | 11,218 | 20,833 | 8,028 | 19,266 |
| Kansas | 10,081 | 18,723 | 7,215 | 17,315 |
| Kentucky | 13,843 | 25,709 | 9,913 | 23,791 |
| Louisiana | 14,025 | 26,047 | 10,033 | 24,079 |
| Maine | 4,521 | 8,397 | 3,236 | 7,766 |
| Maryland | 19,662 | 36,514 | 14,077 | 33,784 |
| Massachusetts | 26,508 | 49,230 | 19,002 | 45,605 |
| Michigan | 31,403 | 58,321 | 22,474 | 53,936 |
| Minnesota | 21,222 | 39,412 | 15,199 | 36,476 |
| Mississippi | 8,199 | 15,227 | 5,868 | 14,082 |
| Missouri | 20,707 | 38,455 | 14,825 | 35,579 |

| Month of ARIMA => Model Forecast | March 2021 | | June 2021 | |
|-------------------------------------|----------------------------------|---------|-----------|---------|
| Marginal Effect => | 0.7% | 1.3% | 0.5% | 1.2% |
| Area | Impact on jobs per each σ | | | |
| Montana | 3,472 | 6,448 | 2,488 | 5,970 |
| Nebraska | 7,305 | 13,566 | 5,233 | 12,558 |
| Nevada | 10,403 | 19,321 | 7,480 | 17,951 |
| New Hampshire | 4,868 | 9,040 | 3,486 | 8,366 |
| New Jersey | 29,914 | 55,554 | 21,423 | 51,414 |
| New Mexico | 6,094 | 11,317 | 4,362 | 10,469 |
| New York | 69,861 | 129,743 | 50,071 | 120,170 |
| North Carolina | 32,998 | 61,282 | 23,673 | 56,814 |
| North Dakota | 3,091 | 5,741 | 2,214 | 5,312 |
| Ohio | 39,610 | 73,561 | 28,360 | 68,063 |
| Oklahoma | 11,960 | 22,212 | 8,556 | 20,533 |
| Oregon | 14,057 | 26,105 | 10,085 | 24,204 |
| Pennsylvania | 42,990 | 79,838 | 30,768 | 73,842 |
| Rhode Island | 3,579 | 6,647 | 2,562 | 6,149 |
| South Carolina | 15,654 | 29,072 | 11,234 | 26,960 |
| South Dakota | 3,132 | 5,816 | 2,243 | 5,382 |
| Tennessee | 22,481 | 41,751 | 16,132 | 38,717 |
| Texas | 92,787 | 172,319 | 66,618 | 159,883 |
| Utah | 11,297 | 20,981 | 8,122 | 19,492 |
| Vermont | 2,206 | 4,096 | 1,578 | 3,786 |
| Virginia | 28,977 | 53,814 | 20,755 | 49,812 |
| Washington | 25,125 | 46,661 | 18,036 | 43,285 |
| West Virginia | 5,028 | 9,338 | 3,593 | 8,622 |
| Wisconsin | 21,118 | 39,220 | 15,118 | 36,282 |
| Wyoming | 1,996 | 3,706 | 1,425 | 3,420 |
| District of Columbia | 5,698 | 10,582 | 4,082 | 9,797 |

Nonfarm Employment Mar 2021 using Government Severity Index

X = Government Severity Index

Results from Stepwise Regression using alpha = 0.2 and Robust Standard Error Type HC3

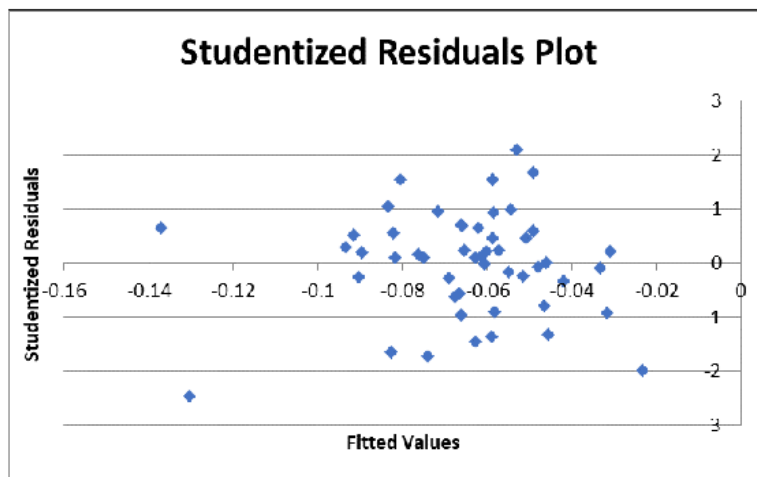
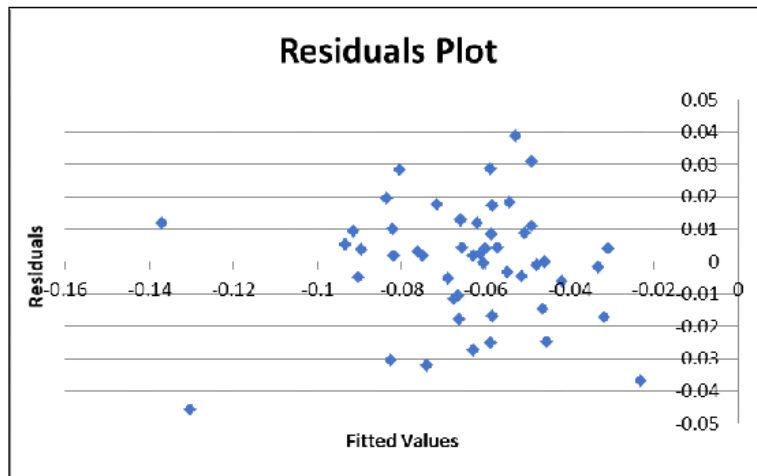
OVERALL FIT

| | | | |
|-------------------|----------|------|-----------|
| Multiple R | 0.770128 | AIC | -393.9614 |
| R Square | 0.593097 | AICc | -392.0079 |
| Adjusted R Square | 0.556928 | SBC | -384.4013 |
| Standard Error | 0.018557 | | |
| Observations | 50 | | |

ANOVA

| | | | | Alpha | 0.2 | |
|------------|----|----------|----------|----------|----------|-----|
| | df | SS | MS | F | p-value | sig |
| Regression | 4 | 0.022586 | 0.005647 | 16.39789 | 2.35E-08 | yes |
| Residual | 45 | 0.015496 | 0.000344 | | | |
| Total | 49 | 0.038082 | | | | |

| | coeff | std err | t stat | p-value | lower | upper | vif |
|---|-----------|----------|-----------|----------|-----------|-----------|----------|
| Intercept | -0.02444 | 0.017005 | -1.437232 | 0.157569 | -0.046557 | -0.002323 | |
| X | -0.000393 | 0.000175 | -2.251378 | 0.029291 | -0.00062 | -0.000166 | 1.393384 |
| Line 75 Industry (Arts, rec, etc) | -0.687663 | 0.134735 | -5.10382 | 6.51E-06 | -0.862906 | -0.51242 | 1.098096 |
| Population Density | -3.21E-05 | 1.05E-05 | -3.072895 | 0.003593 | -4.57E-05 | -1.85E-05 | 1.101288 |
| Average Daily Confirmed Cases Per 100,000 | 4.85E-06 | 3.54E-06 | 1.369973 | 0.177492 | 2.46E-07 | 9.46E-06 | 1.324821 |



Nonfarm Employment Jun 2021 using Government Severity Index

X = Government Severity Index

Results from Stepwise Regression using alpha = 0.2 and Robust Standard Error Type HC3

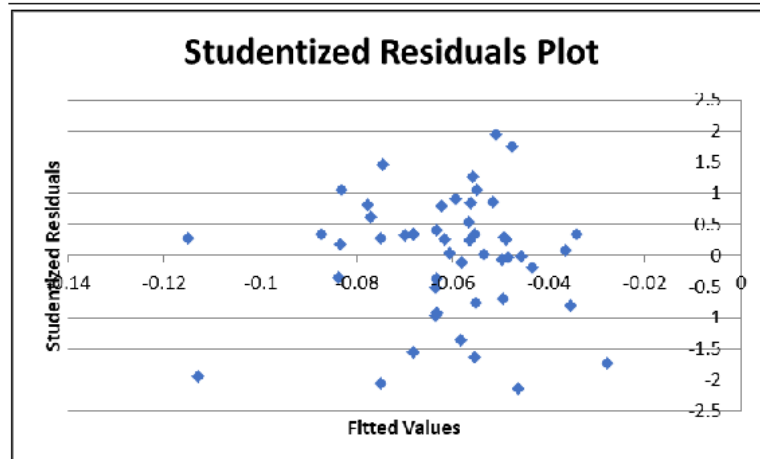
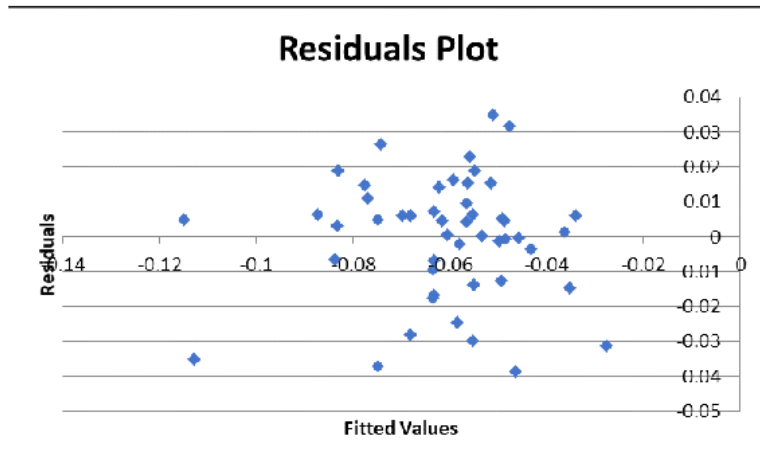
OVERALL FIT

| | | | |
|-------------------|----------|------|-----------|
| Multiple R | 0.703798 | AIC | -396.7823 |
| R Square | 0.495331 | AICc | -394.8288 |
| Adjusted R Square | 0.450472 | SBC | -387.2222 |
| Standard Error | 0.01804 | | |
| Observations | 50 | | |

ANOVA

| | df | SS | MS | F | p-value | sig |
|------------|----|----------|----------|----------|----------|-----|
| Regression | 4 | 0.014375 | 0.003594 | 11.04185 | 2.52E-06 | yes |
| Residual | 45 | 0.014645 | 0.000325 | | | |
| Total | 49 | 0.02902 | | | | |

| | coeff | std err | t stat | p-value | lower | upper | vif |
|---|-----------|----------|-----------|----------|-----------|-----------|----------|
| Intercept | -0.034175 | 0.016532 | -2.067233 | 0.044493 | -0.055677 | -0.012673 | 0 |
| X | -0.000268 | 0.00017 | -1.577747 | 0.121628 | -0.000489 | -4.7E-05 | 1.393884 |
| Line 75 Industry (Arts, rec, etc) | -0.525554 | 0.130987 | -4.01225 | 0.000225 | -0.695923 | -0.355185 | 1.098096 |
| Population Density | -2.95E-05 | 1.02E-05 | -2.905984 | 0.005661 | -4.27E-05 | -1.63E-05 | 1.101288 |
| Average Daily Confirmed Cases Per 100,000 | 4.8E-06 | 3.44E-06 | 1.394766 | 0.169934 | 3.24E-07 | 9.29E-06 | 1.324821 |



Nonfarm Employment Mar 2021 using Abridged Oxford Stringency Index

X = Abridged Oxford Stringency Index

Results from Stepwise Regression using alpha = 0.2 and Robust Standard Error Type HC3

OVERALL FIT

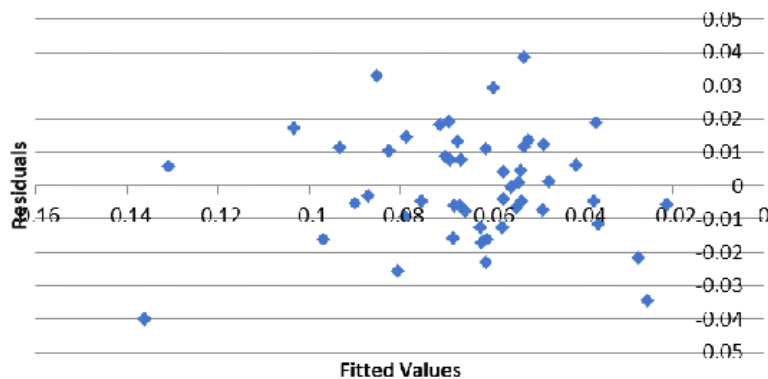
| | | | |
|-------------------|----------|------|-----------|
| Multiple R | 0.81548 | AIC | -405.6847 |
| R Square | 0.665007 | AICc | -404.321 |
| Adjusted R Square | 0.64316 | SBC | -398.0366 |
| Standard Error | 0.016653 | | |
| Observations | 50 | | |

ANOVA

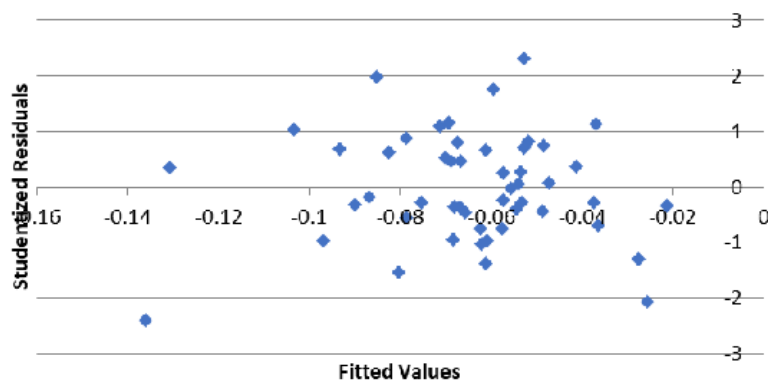
| | df | SS | MS | F | p-value | sig |
|------------|----|----------|----------|----------|---------|-----|
| Regression | 3 | 0.025325 | 0.008442 | 30.43881 | 5.4E-11 | yes |
| Residual | 46 | 0.012757 | 0.000277 | | | |
| Total | 49 | 0.038082 | | | | |

| | coeff | std err | t stat | p-value | lower | upper | vif |
|----------------------------------|-----------|----------|-----------|----------|-----------|-----------|----------|
| Intercept | 0.016593 | 0.009876 | 1.680107 | 0.099717 | 0.003752 | 0.029434 | |
| X | -2.97E-06 | 5.98E-07 | -4.958308 | 1.01E-05 | -3.74E-06 | -2.19E-06 | 1.270427 |
| Line 75Industry (Arts, rec, etc) | -0.674864 | 0.119234 | -5.66 | 9.33E-07 | -0.829895 | -0.519833 | 1.067775 |
| Population Density | -1.79E-05 | 9.86E-06 | -1.819056 | 0.075416 | -3.07E-05 | -5.11E-06 | 1.21569 |

Residuals Plot



Studentized Residuals Plot



Nonfarm Employment Jun 2021 using Abridged Oxford Stringency Index

X = Abridged Oxford Stringency Index

Results from Stepwise Regression using alpha = 0.2 and Robust Standard Error Type HC3

OVERALL FIT

| | | | |
|-------------------|----------|------|-----------|
| Multiple R | 0.769251 | AIC | -409.383 |
| R Square | 0.591746 | AICc | -408.0193 |
| Adjusted R Square | 0.565121 | SBC | -401.7349 |
| Standard Error | 0.016049 | | |
| Observations | 50 | | |

ANOVA

| | | | | Alpha | 0.2 | |
|------------|-----------|-----------|-----------|----------|----------------|------------|
| | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> | <i>p-value</i> | <i>sig</i> |
| Regression | 3 | 0.017172 | 0.005724 | 22.22502 | 4.88E-09 | yes |
| Residual | 46 | 0.011848 | 0.000258 | | | |
| Total | 49 | 0.02902 | | | | |

| | <i>coeff</i> | <i>std err</i> | <i>t stat</i> | <i>p-value</i> | <i>lower</i> | <i>upper</i> | <i>vif</i> |
|----------------------------------|--------------|----------------|---------------|----------------|--------------|--------------|------------|
| Intercept | 0.006926 | 0.009517 | 0.727761 | 0.470448 | -0.005448 | 0.019301 | |
| X | -2.63E-06 | 5.77E-07 | -4.553506 | 3.87E-05 | -3.38E-06 | -1.88E-06 | 1.270427 |
| Line 75Industry (Arts, rec, etc) | -0.503306 | 0.114905 | -4.380198 | 6.79E-05 | -0.652708 | -0.353903 | 1.067775 |
| Population Density | -1.56E-05 | 9.5E-06 | -1.637393 | 0.108372 | -2.79E-05 | -3.2E-06 | 1.21569 |

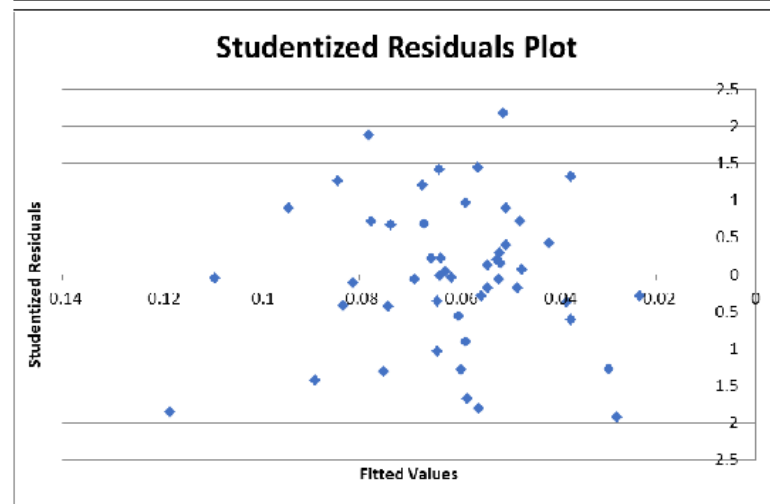
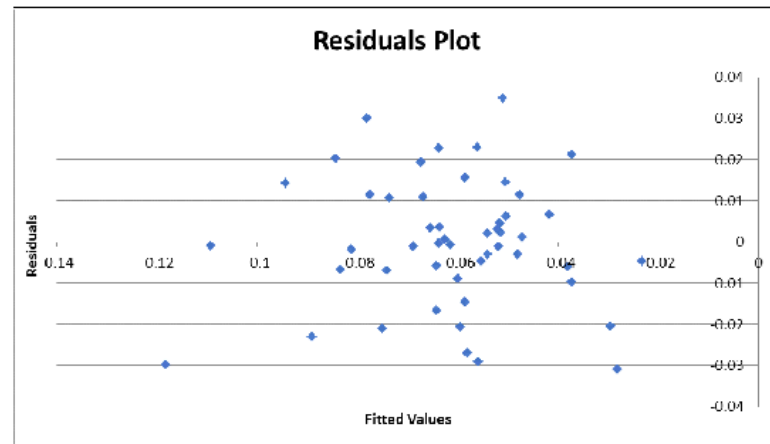


Chart Government Severity Index vs Nonfarm Employment March 2021

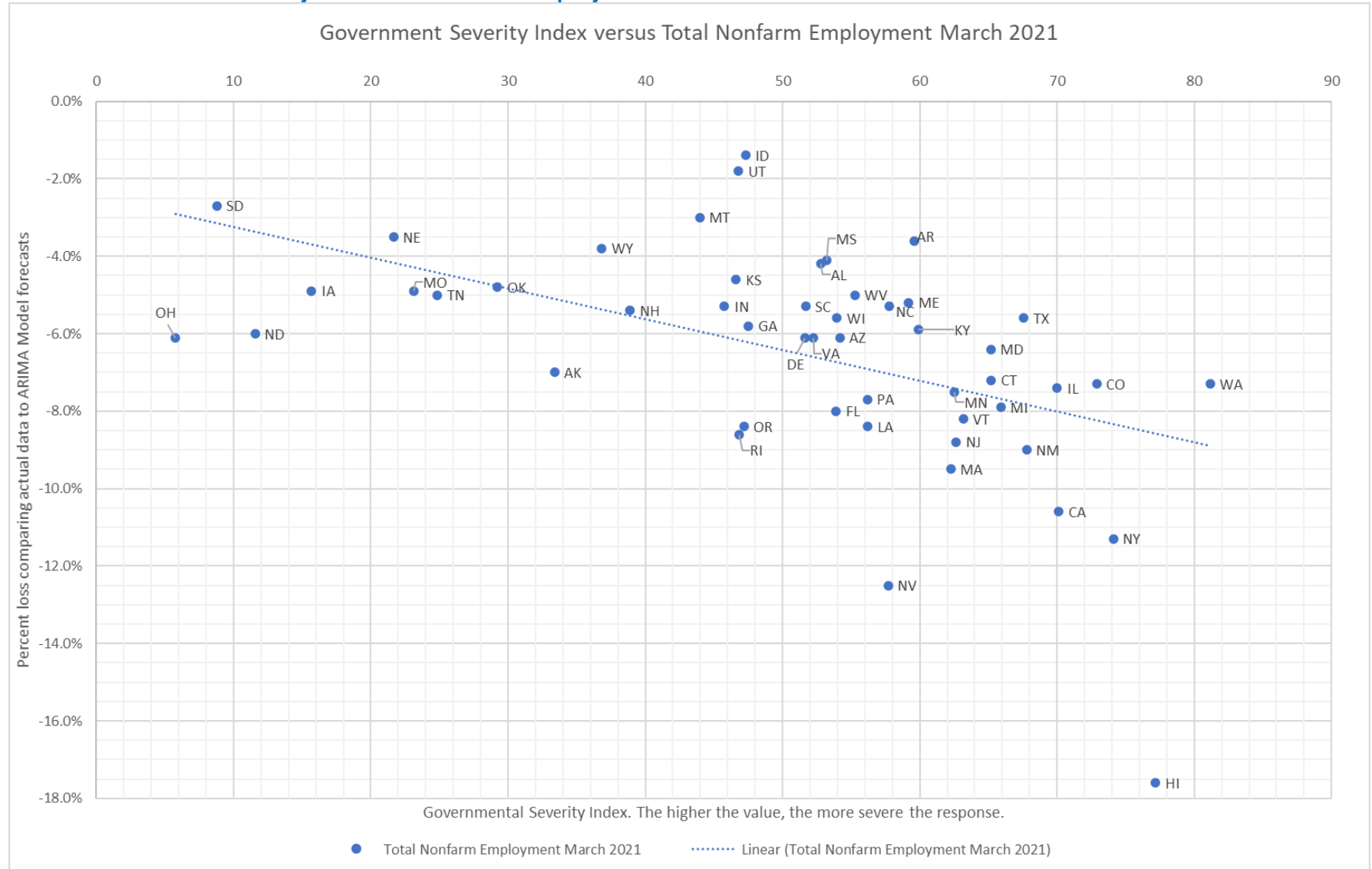


Chart Government Severity Index vs Nonfarm Employment June 2021

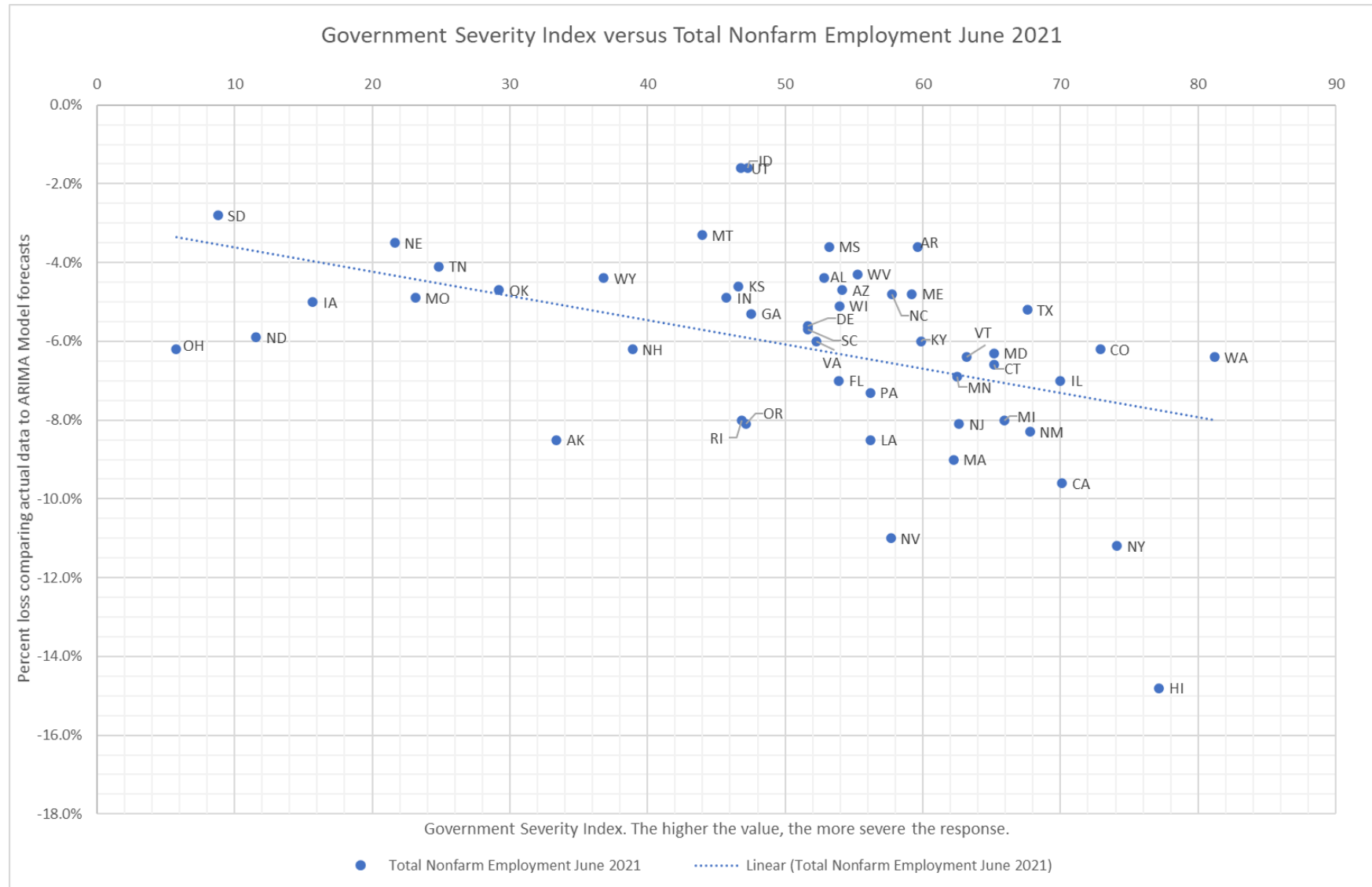


Chart Abridged Oxford Stringency Index vs Nonfarm Employment March 2021

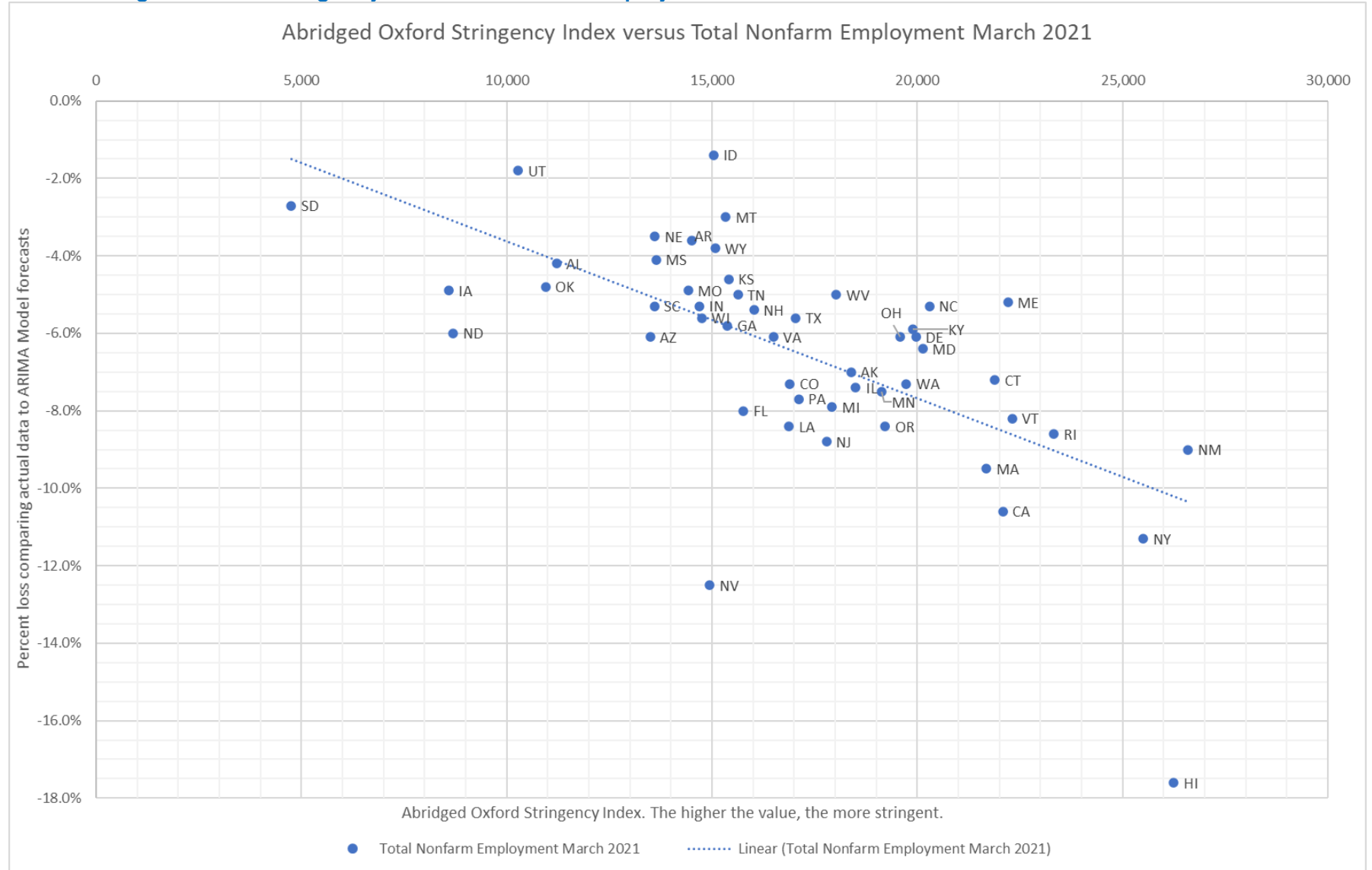
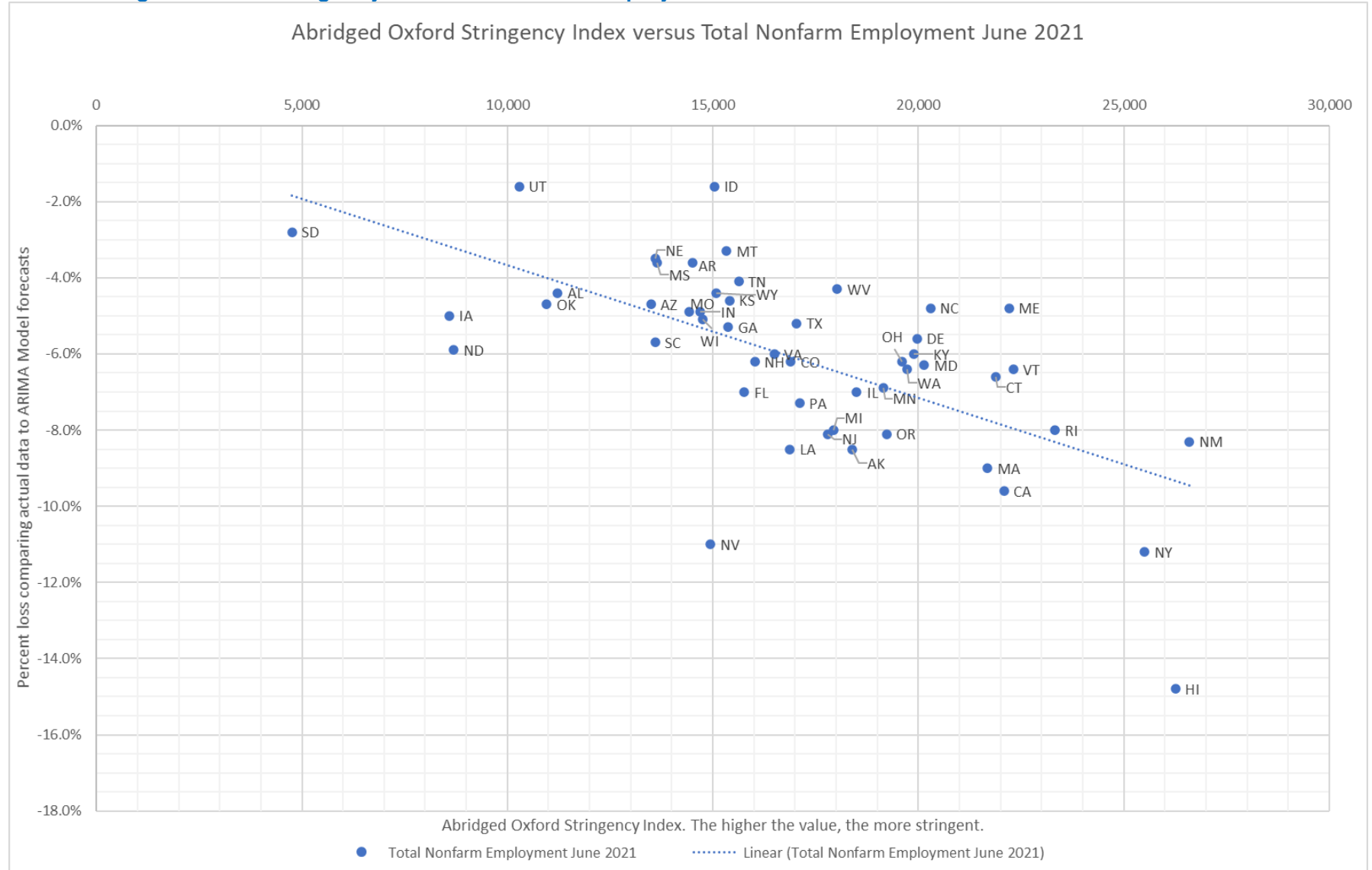


Chart Abridged Oxford Stringency Index vs Nonfarm Employment June 2021



Government Severity Index vs. Confirmed COVID Cases per 100,000

Regression with alpha = .05 and no HC

Regression Analysis

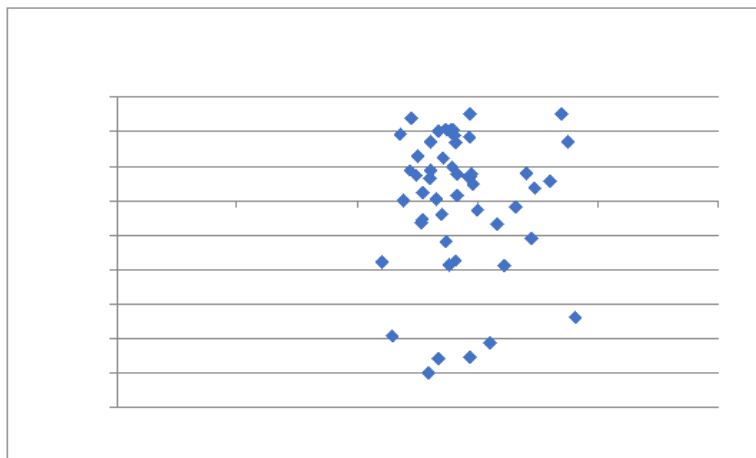
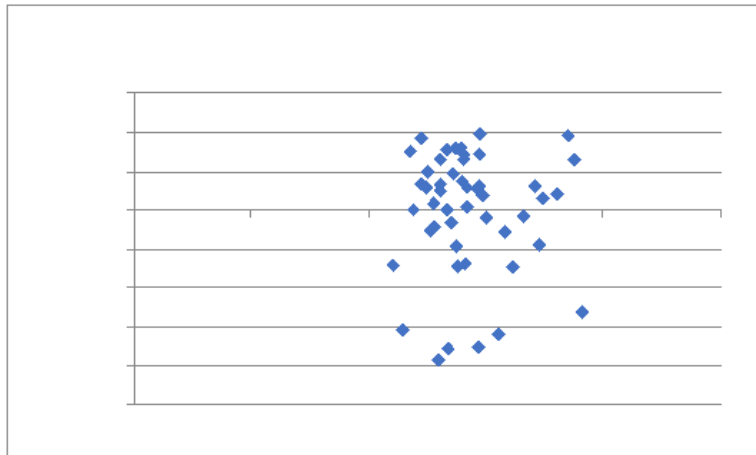
OVERALL FIT

| | | | |
|-------------------|-------------|------|------------|
| Multiple R | 0.445881065 | AIC | 667.731373 |
| R Square | 0.198809924 | AICc | 668.253112 |
| Adjusted R Square | 0.182118464 | SBC | 671.555419 |
| Standard Error | 778.7769898 | | |
| Observations | 50 | | |

ANOVA

| | <i>df</i> | <i>SS</i> | <i>MS</i> | Alpha | 0.05 | |
|------------|-----------|-----------|-------------|------------|----------|-----|
| Regression | 1 | 7223871 | 7223870.589 | 11.9108769 | 0.001174 | yes |
| Residual | 48 | 29111693 | 606493.5998 | | | |
| Total | 49 | 36335563 | | | | |

| | <i>coeff</i> | <i>std err</i> | <i>tstat</i> | <i>p-value</i> | <i>lower</i> | <i>upper</i> |
|-----------|--------------|----------------|--------------|----------------|--------------|--------------|
| Intercept | 3948.057047 | 333.4539 | 11.83988853 | 7.5847E-16 | 3277.603 | 4618.511 |
| X | -21.427076 | 6.208562 | -3.451213825 | 0.00117367 | -33.9102 | -8.94392 |



Abridged Oxford Stringency Index vs. Confirmed COVID Cases per 100,000

Regression with alpha = .05 and no HC

Regression Analysis

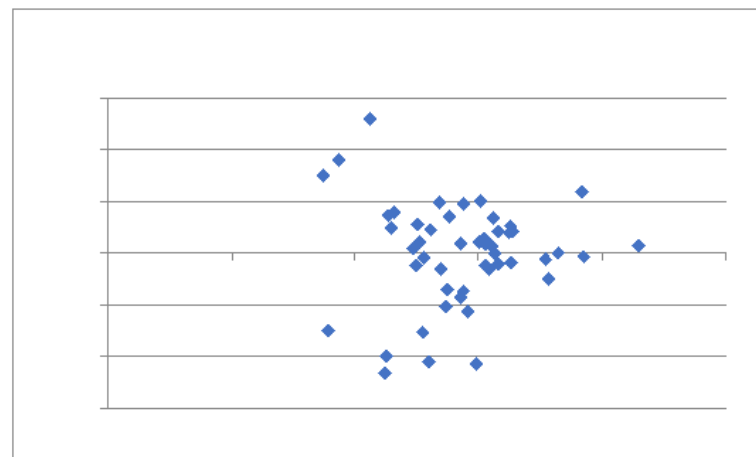
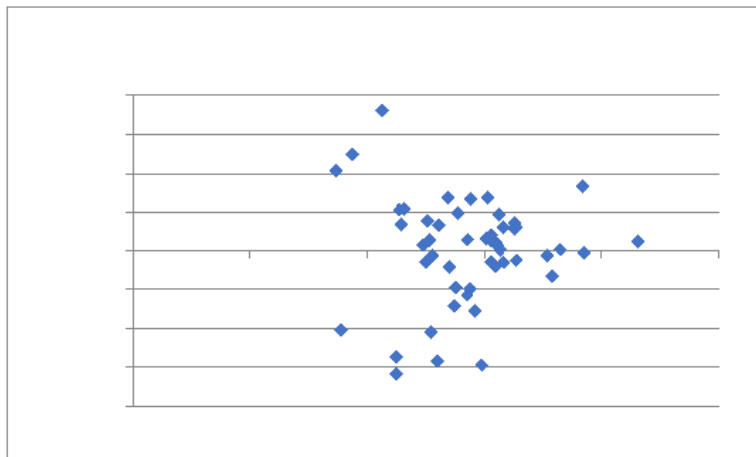
OVERALL FIT

| | | | |
|-------------------|-------------|------|------------|
| Multiple R | 0.610052677 | AIC | 655.54039 |
| R Square | 0.372164268 | AICc | 656.062129 |
| Adjusted R Square | 0.359084357 | SBC | 659.364436 |
| Standard Error | 689.3953422 | | |
| Observations | 50 | | |

ANOVA

| | <i>df</i> | <i>SS</i> | <i>MS</i> | Alpha | 0.05 | |
|------------|-----------|-----------|-------------|------------|----------|-----|
| Regression | 1 | 13522798 | 13522798.36 | 28.4531192 | 2.56E-06 | yes |
| Residual | 48 | 22812765 | 475265.9879 | | | |
| Total | 49 | 36335563 | | | | |

| | <i>coeff</i> | <i>std err</i> | <i>t stat</i> | <i>p-value</i> | <i>lower</i> | <i>upper</i> |
|-----------|--------------|----------------|---------------|----------------|--------------|--------------|
| Intercept | 4855.930871 | 386.3428 | 12.56896955 | 8.5528E-17 | 4079.137 | 5632.725 |
| X | -0.117215 | 0.021974 | -5.334146526 | 2.5608E-06 | -0.1614 | -0.07303 |



Government Severity Index vs. COVID Inpatient Bed Days per 100,000

Regression alpha = .05 and no HC

Regression Analysis

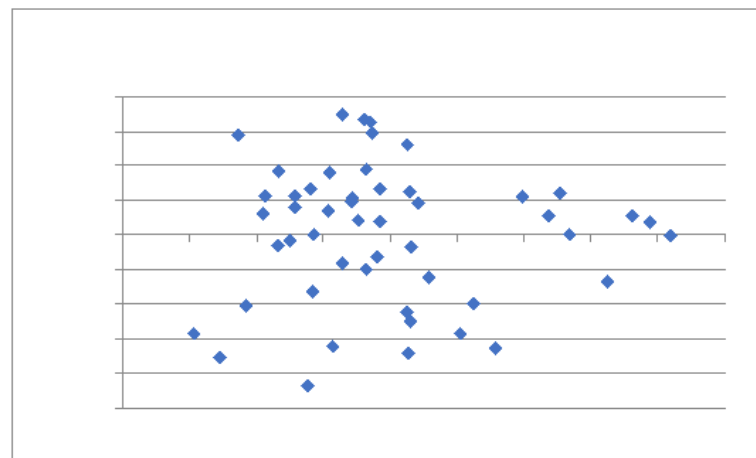
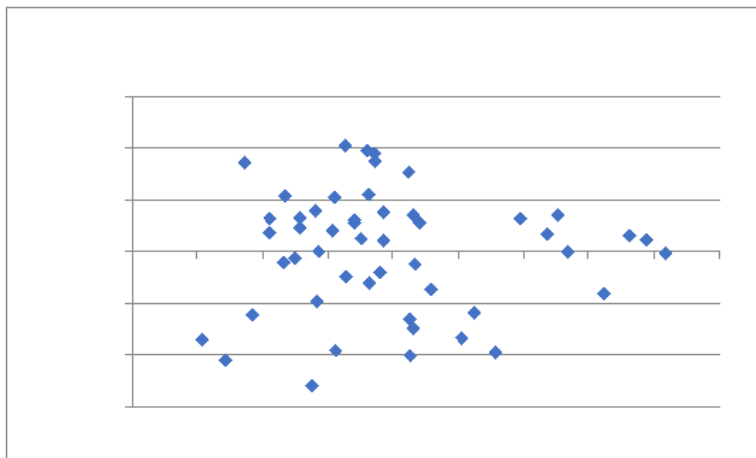
OVERALL FIT

| | | | |
|-------------------|-------------|------|------------|
| Multiple R | 0.036213071 | AIC | 778.497686 |
| R Square | 0.001311386 | AICc | 779.019425 |
| Adjusted R Square | -0.01949463 | SBC | 782.321732 |
| Standard Error | 2357.57271 | | |
| Observations | 50 | | |

ANOVA

| | <i>df</i> | <i>SS</i> | <i>MS</i> | Alpha | 0.05 | |
|------------|-----------|-----------|-------------|------------|----------|----|
| Regression | 1 | 350325.7 | 350325.7315 | 0.06302921 | 0.802842 | no |
| Residual | 48 | 2.67E+08 | 5558149.081 | | | |
| Total | 49 | 2.67E+08 | | | | |

| | <i>coeff</i> | <i>std err</i> | <i>t stat</i> | <i>p-value</i> | <i>lower</i> | <i>upper</i> |
|-----------|--------------|----------------|---------------|----------------|--------------|--------------|
| Intercept | 6685.947973 | 1009.457 | 6.623311833 | 2.7818E-08 | 4656.299 | 8715.597 |
| X | -4.71860855 | 18.79503 | -0.251056184 | 0.80284232 | -42.5085 | 33.07133 |



Abridged Oxford Stringency Index vs. COVID Inpatient Bed Days per 100,000

Regression alpha = .05 and no HC

Regression Analysis

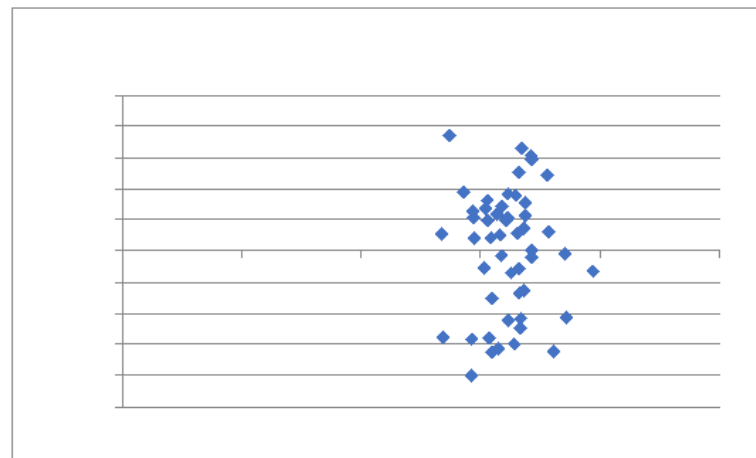
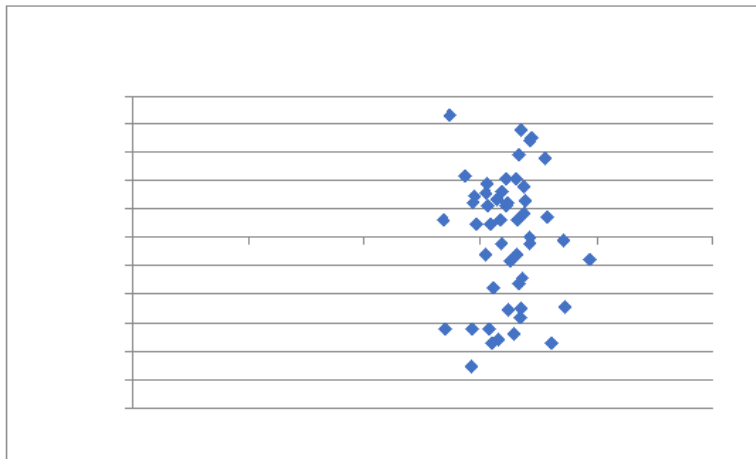
OVERALL FIT

| | | | |
|-------------------|-------------|------|------------|
| Multiple R | 0.222516043 | AIC | 776.024238 |
| R Square | 0.049513389 | AICc | 776.545977 |
| Adjusted R Square | 0.029711585 | SBC | 779.848284 |
| Standard Error | 2299.974644 | | |
| Observations | 50 | | |

ANOVA

| | <i>df</i> | <i>SS</i> | <i>MS</i> | Alpha | 0.05 | |
|------------|-----------|-----------|-------------|------------|----------|----|
| Regression | 1 | 13227080 | 13227080.16 | 2.50044836 | 0.120382 | no |
| Residual | 48 | 2.54E+08 | 5289883.364 | | | |
| Total | 49 | 2.67E+08 | | | | |

| | <i>coeff</i> | <i>std err</i> | <i>t stat</i> | <i>p-value</i> | <i>lower</i> | <i>upper</i> |
|-----------|--------------|----------------|---------------|----------------|--------------|--------------|
| Intercept | 8418.926618 | 1288.925 | 6.531744667 | 3.8445E-08 | 5827.37 | 11010.48 |
| X | -0.11592628 | 0.073312 | -1.581280607 | 0.12088167 | -0.26333 | 0.031477 |



Government Severity Index vs. COVID Deaths per 100,000

Regression alpha = .05 and no HC

Regression Analysis

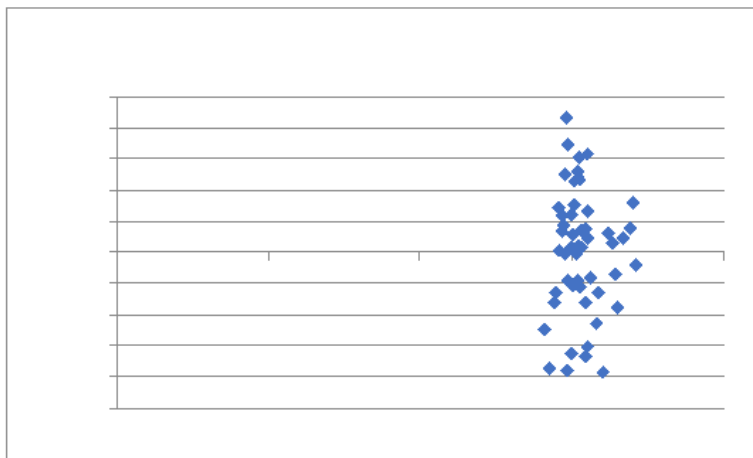
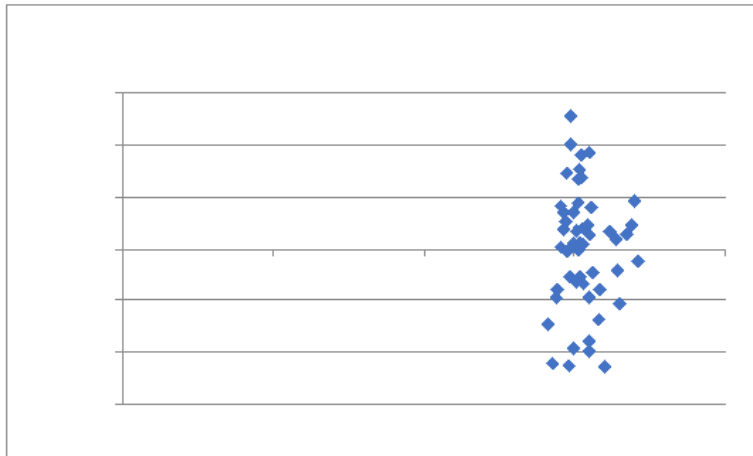
OVERALL FIT

| | | | |
|-------------------|-------------|------|------------|
| Multiple R | 0.121042394 | AIC | 409.766719 |
| R Square | 0.014651261 | AICc | 410.288458 |
| Adjusted R Square | -0.00587684 | SBC | 413.590765 |
| Standard Error | 59.03191266 | | |
| Observations | 50 | | |

ANOVA

| | | | | Alpha | 0.05 | |
|------------|-----------|-----------|-------------|-----------|----------------|------------|
| | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> | <i>p-value</i> | <i>sig</i> |
| Regression | 1 | 2487.139 | 2487.138622 | 0.7137174 | 0.402404 | no |
| Residual | 48 | 167268.8 | 3484.766712 | | | |
| Total | 49 | 169755.9 | | | | |

| | <i>coeff</i> | <i>std err</i> | <i>t stat</i> | <i>p-value</i> | <i>lower</i> | <i>upper</i> |
|-----------|--------------|----------------|---------------|----------------|--------------|--------------|
| Intercept | 173.2273168 | 25.27607 | 6.853411816 | 1.2338E-08 | 122.4064 | 224.0483 |
| X | -0.39758311 | 0.470614 | -0.844817966 | 0.40240381 | -1.34382 | 0.54865 |



Abridged Oxford Stringency Index vs. COVID Deaths per 100,000

Regression alpha = .05 and no HC

Regression Analysis

OVERALL FIT

| | | | |
|-------------------|-------------|------|------------|
| Multiple R | 0.265914014 | AIC | 406.837966 |
| R Square | 0.070710263 | AICc | 407.359706 |
| Adjusted R Square | 0.05135006 | SBC | 410.662012 |
| Standard Error | 57.32808605 | | |
| Observations | 50 | | |

ANOVA

| | <i>df</i> | <i>SS</i> | <i>MS</i> | Alpha | 0.05 | |
|------------|-----------|-----------|-------------|------------|----------|----|
| Regression | 1 | 12003.49 | 12003.48718 | 3.65235134 | 0.061972 | no |
| Residual | 48 | 157752.5 | 3286.50945 | | | |
| Total | 49 | 169755.9 | | | | |

| | <i>coeff</i> | <i>std err</i> | <i>t stat</i> | <i>p-value</i> | <i>lower</i> | <i>upper</i> |
|-----------|--------------|----------------|---------------|----------------|--------------|--------------|
| Intercept | 212.4833925 | 32.12713 | 6.61383068 | 2.8766E-08 | 147.8875 | 277.0793 |
| X | -0.00349224 | 0.001827 | -1.911112591 | 0.06197169 | -0.00717 | 0.000182 |

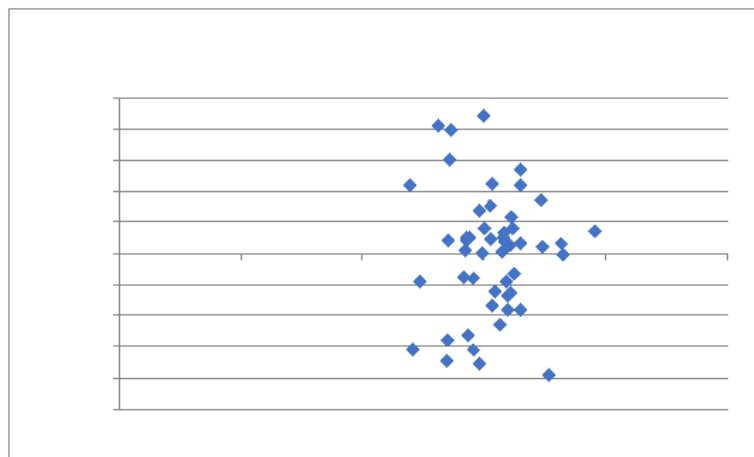
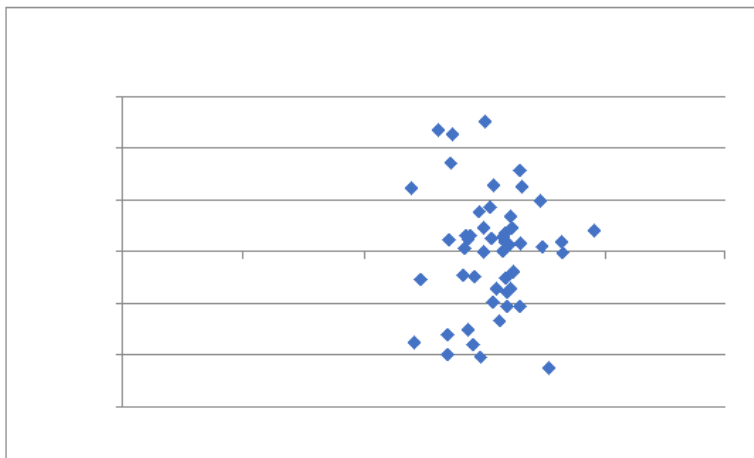


Chart Government Severity Index vs COVID-19 Cases per 100,000

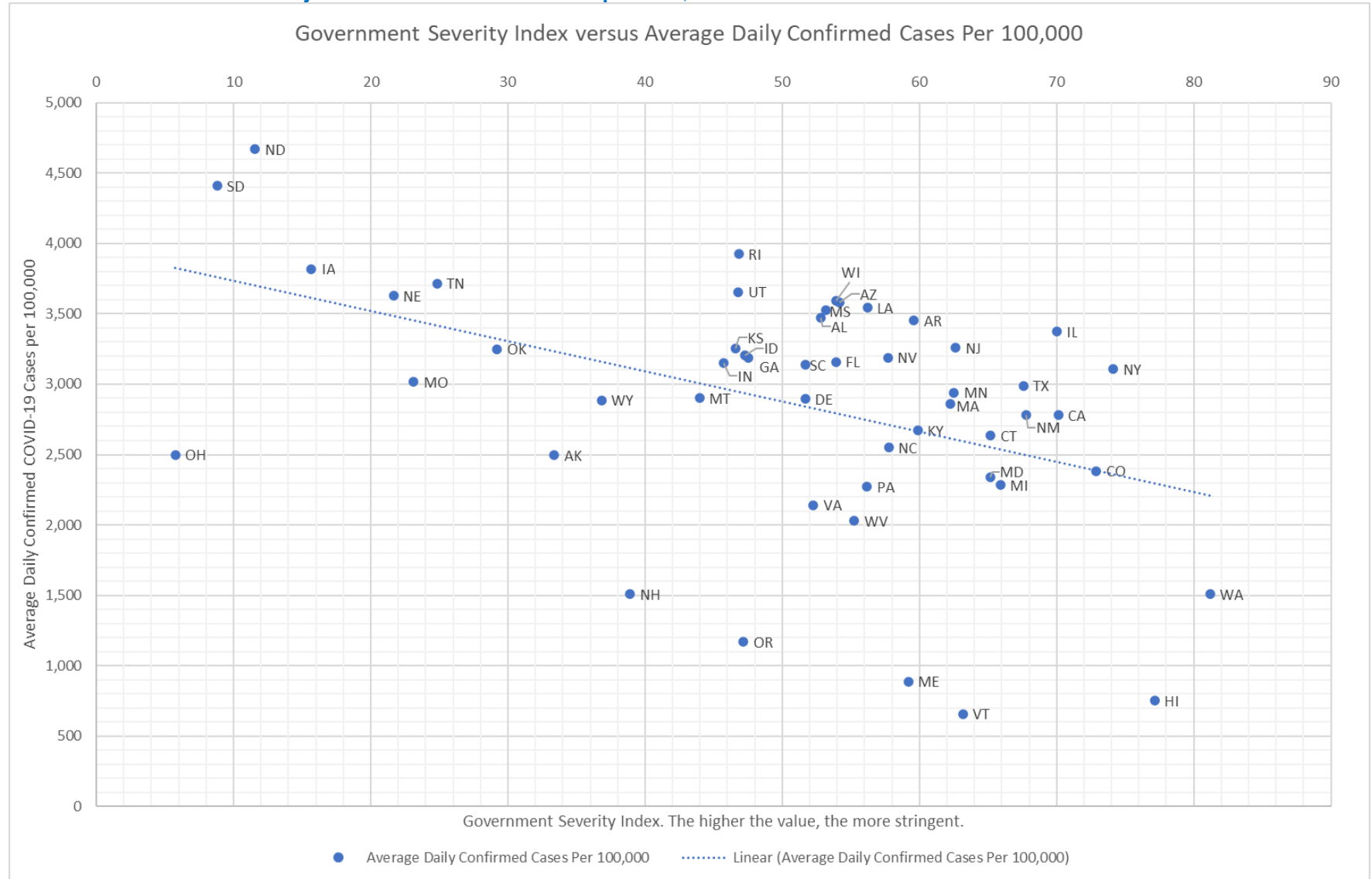


Chart Abridged Oxford Stringency Index vs COVID-19 Cases per 100,000

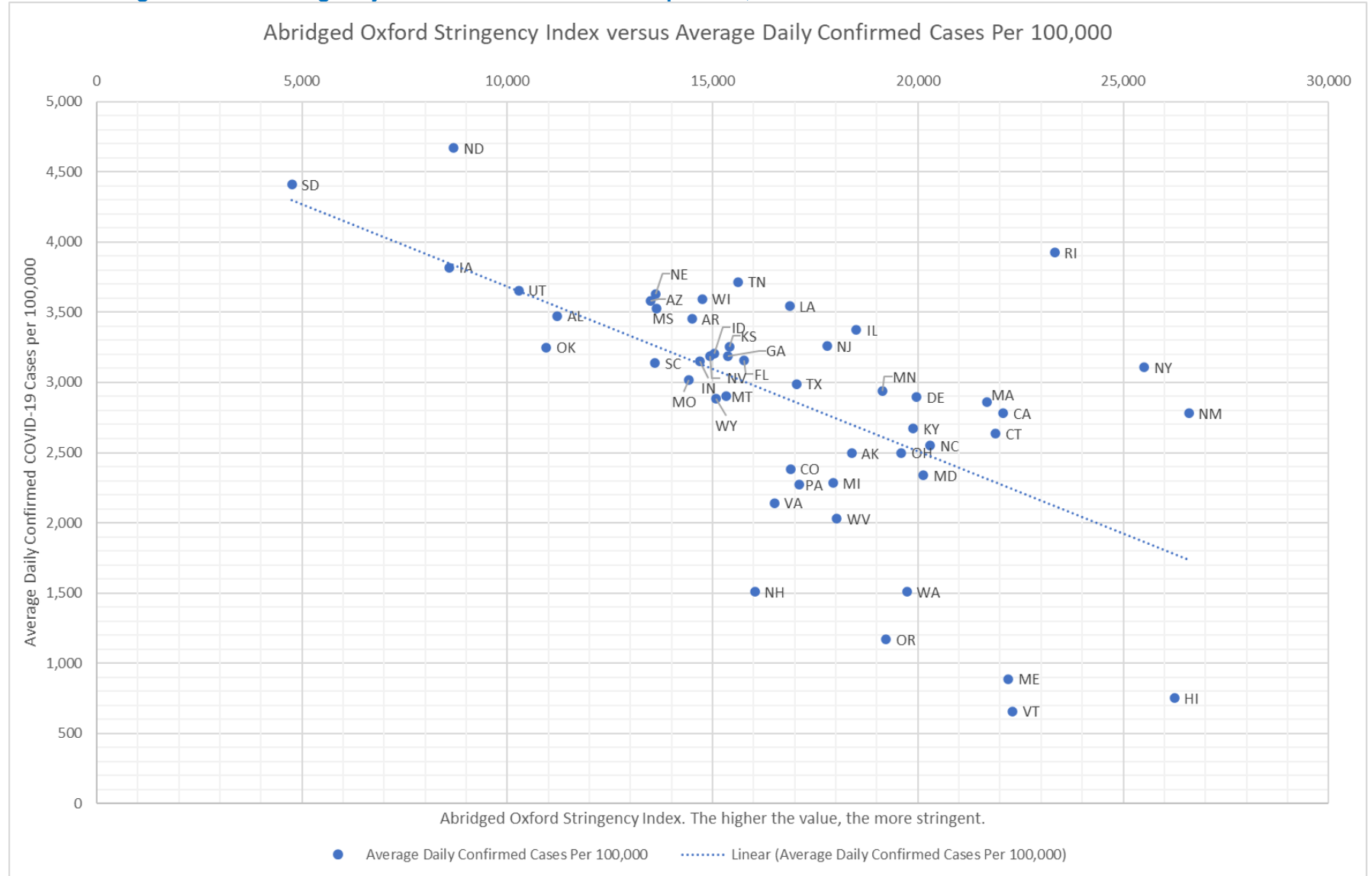


Chart Government Severity Index vs COVID-19 Hospitalizations per 100,000

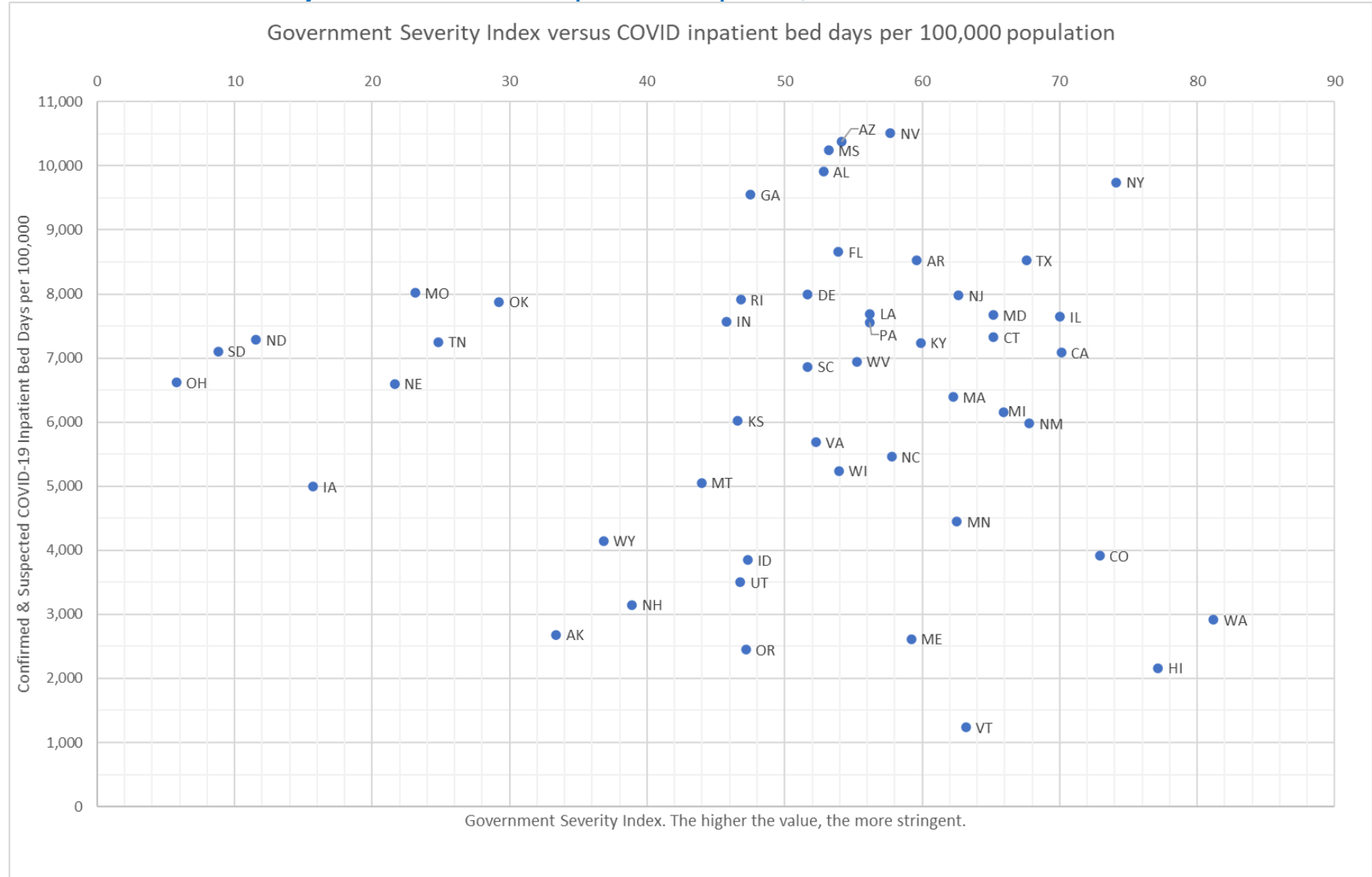




Chart Abridged Oxford Stringency Index vs COVID-19 Hospitalizations per 100,000

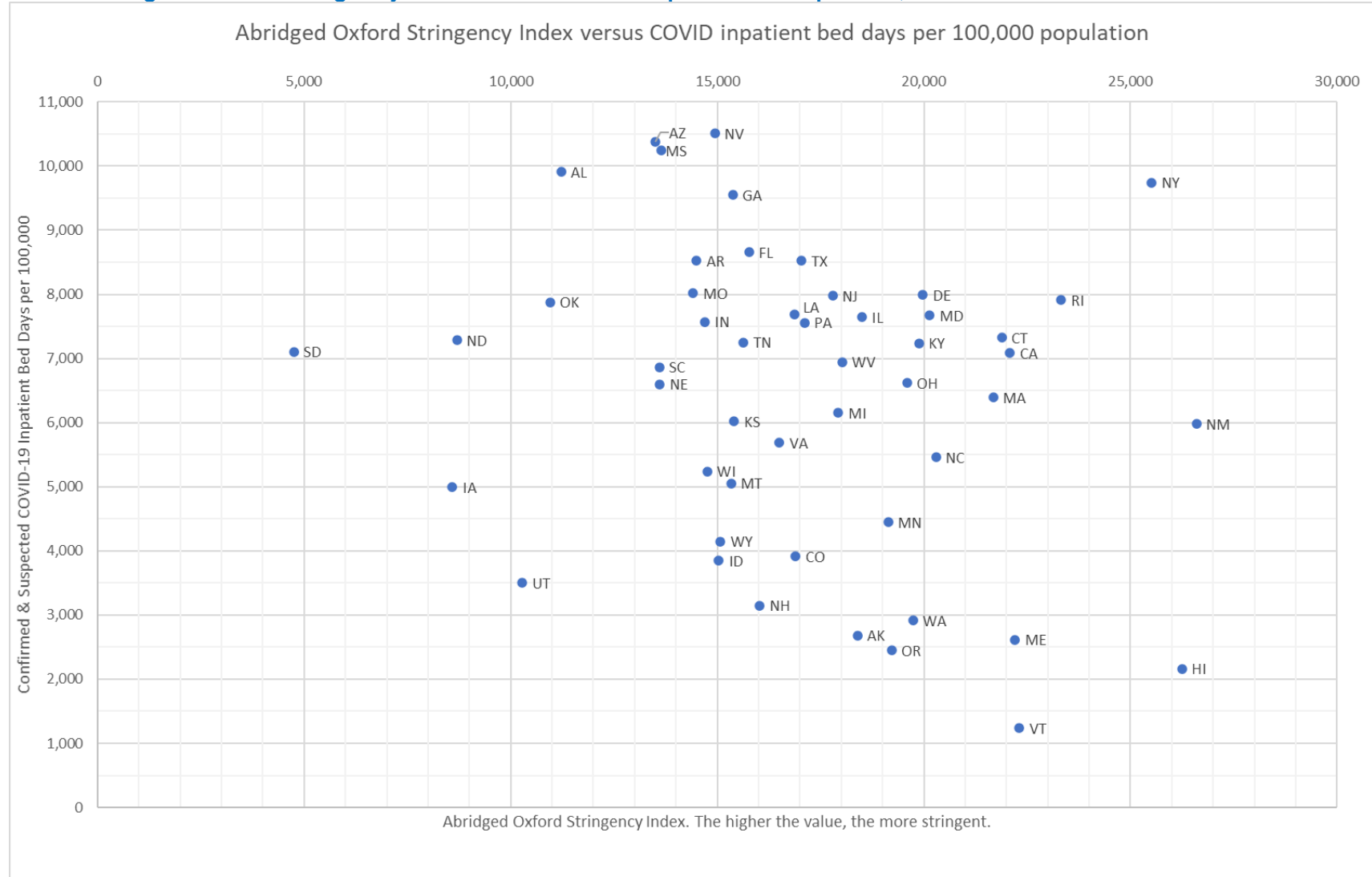


Chart Government Severity Index vs COVID-19 Deaths per 100,000

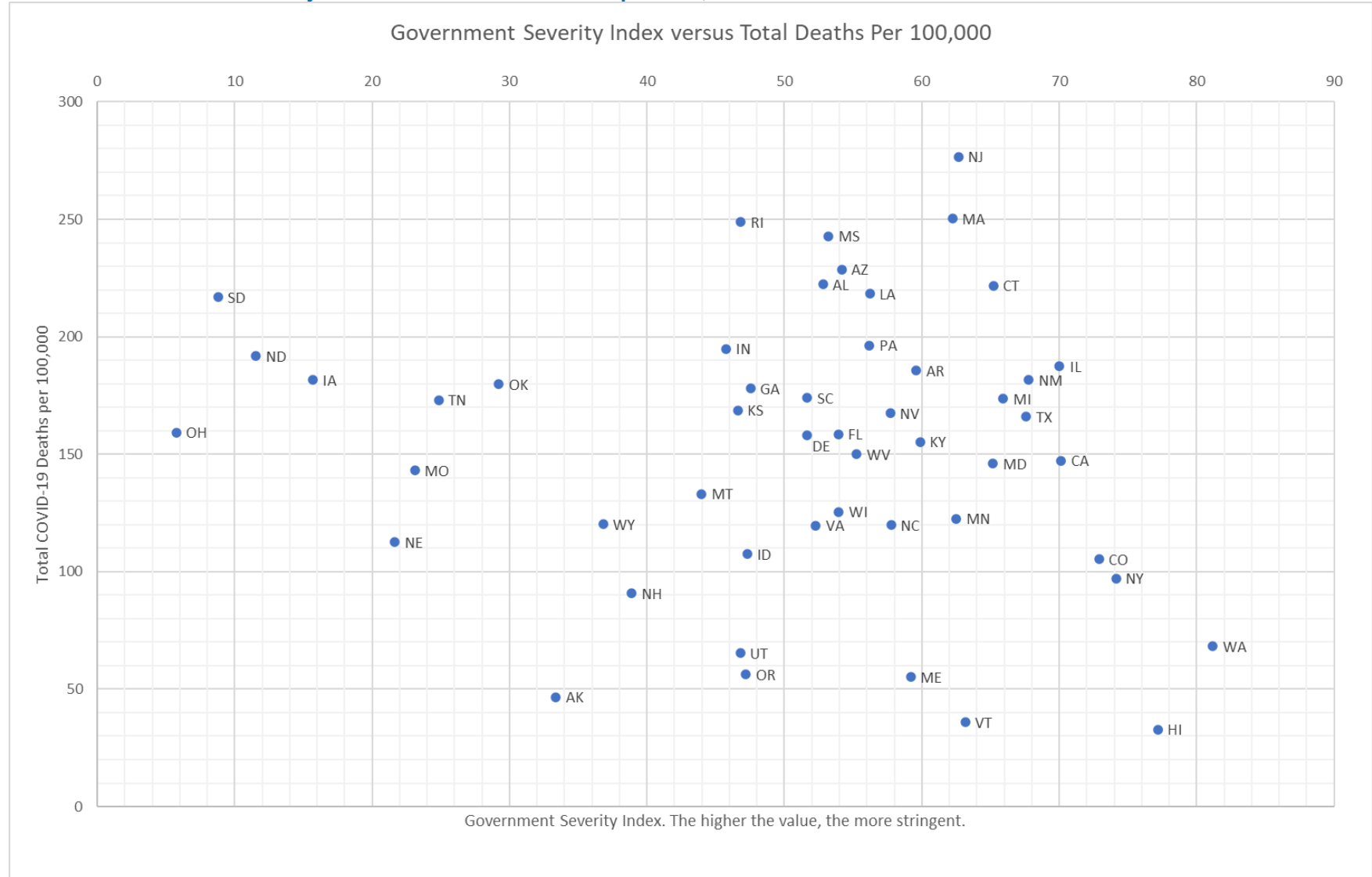


Chart Abridged Oxford Stringency Index vs COVID-19 Deaths per 100,000

