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THE COSTS OF LOCKDOWNS AND SHUTDOWNS

PART II

Counting the economic costs of government policy responses to COVID-19.

JOHN PHELAN & MARTHA NJOLOMOLE



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The Costs of Lockdowns and Shutdowns Part I

Counting the economic costs of government policy
responses to COVID-19

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Executive Summary

- » In March 2020, COVID-19 hit Minnesota. State and local governments enacted several measures intended to slow the spread of the virus, chief among these being “lockdowns” of individuals and shutdowns of certain “non-essential” businesses. Both at the state level and nationally, the economy contracted at the fastest rate on record and unemployment rocketed. More than two years on, economies across the United States are still recovering.
- » From peaks in either the fourth quarter of 2019 or first quarter of 2020, every jurisdiction saw its **GDP** trough in the second quarter of 2020. **With a decline of 9.7 percent from peak to trough, Minnesota was the 28th worst hit jurisdiction in this initial period.**
- » Three states – including South Dakota – recovered from this trough in one quarter, in terms of its GDP regaining its previous peak. Another six jurisdictions recovered in two quarters; nine – including Iowa – recovered in three quarters; twelve – including Minnesota – recovered in four quarters; four recovered in five quarters; eight – including Wisconsin – recovered in six quarters; and, as of the first quarter of 2022, nine – including North Dakota – had failed to recover.

“The economy contracted at the fastest rate on record and unemployment rocketed. More than two years on, economies across the United States are still recovering.”

- » **Per capita Personal Income** derived from wages and capital shows that for every jurisdiction except Alaska the second quarter of 2020 was the low point, as it was for GDP. **Minnesota’s decline of 3.0 percent ranks it the eighth best out of 51 jurisdictions.**
- » Over the period of the recovery, we see that seven out of 51 jurisdictions – including South Dakota – recovered in one quarter, in terms of per capita Personal Income derived from wages and capital reaching its pre-pandemic peak in real terms. Another 34 jurisdictions – including Minnesota, Wisconsin, Iowa, and North Dakota – recovered in two quarters. However, six out of 51 jurisdictions have, as of the first quarter of 2022, failed to return to their pre-pandemic peak.
- » Even worse, **twelve out of the 44 jurisdictions that regained their pre-pandemic peak after the second quarter of 2020 have slipped back and, as of the first quarter of 2022, have per capita levels of per capita Personal Income derived from wages and capital which are below their pre-pandemic peak in real terms; this includes Minnesota and Wisconsin:** sustainable incomes are being eroded by inflation across the United States.
- » **In Minnesota, employment declined by 9.2 percent from February 2020 to the trough in April. It was the joint eighth best performing jurisdiction over this period.**

- » In June 2022, 28 out of 51 jurisdictions – including Wisconsin and South Dakota – had higher levels of employment than they did in February 2020 while 23 – including Minnesota, Iowa, and North Dakota – had lower levels: they had yet to regain their pre-COVID-19 peak levels of employment. **Minnesota’s record low unemployment is, then, the result of Minnesotans leaving the labor force completely. The number of Minnesotans who were not in the labor force rose by 8.6 percent between February 2020 and June 2022, the eighth largest increase across the 51 jurisdictions.**
- » Different states pursued different policies in response to COVID-19. We use publicly available data to perform a multiple regression analysis to determine 1) whether these differences in policy response account for differences in the observed economic outcomes and 2) if so, how much of these differences were they responsible for?
- » **We estimate that Minnesota’s government policy responses to COVID-19 cost each resident \$1,866 in lost GDP by the end of the first quarter of 2021, or \$7,464 for a family of four: this was the 15th biggest hit in the United States.**

Introduction

In March 2020, COVID-19 hit Minnesota. State and local governments enacted several measures intended to slow the spread of the virus, chief among these being “lockdowns” of individuals and shutdowns of certain “non-essential” businesses. Both at the state level and nationally, the economy contracted at the fastest rate on record and unemployment rocketed. More than two years on, economies across the United States are still recovering.¹

Since 2016, Center of the American Experiment has produced an annual report on Minnesota’s economy. Each one has used the previous report as its starting point and added an additional year of data so that we can examine the state’s economic performance over a span of time, usually from the start of the 21st century. These reports are designed to examine longer-term trends in the state’s economic performance.

The economic dislocation of the COVID-19 pandemic has rendered that obsolete, at least for this year. At the time of writing (August 2022) the last year for which we have data is either 2020 or 2021, the years of the pandemic’s impact and initial recovery. Adding data for such freak years to the previous twenty years obscures the longer-term trends that these reports have been designed to explore.

Figures 1 and 2 – regular features of our previous economy reports – illustrate this. Figure 1 shows that, from 2000 to the eve of the pandemic in 2019, the economy of the United

States grew by 44.9 percent in real terms while that of Minnesota grew by 37.3 percent. Over the same period, total employment in the United States grew by 21.9 percent compared to 13.6 percent in Minnesota. Since 2019, these gaps – 7.6 percentage points for real Gross Domestic Product (GDP) growth and 8.4 percentage points for total employment growth – have

widened. In 2021, Minnesota’s real GDP growth since 2000 lagged that of the United States generally by 8.6 percentage points and the shortfall in terms of total employment growth had risen, by 2020, to 8.5 percentage points. To some extent, these represent continuations of trends seen over the previous two decades – or longer – but it is hard to believe that some element of this is not a result of the huge economic hit delivered by the COVID-19 pandemic and government responses to it.

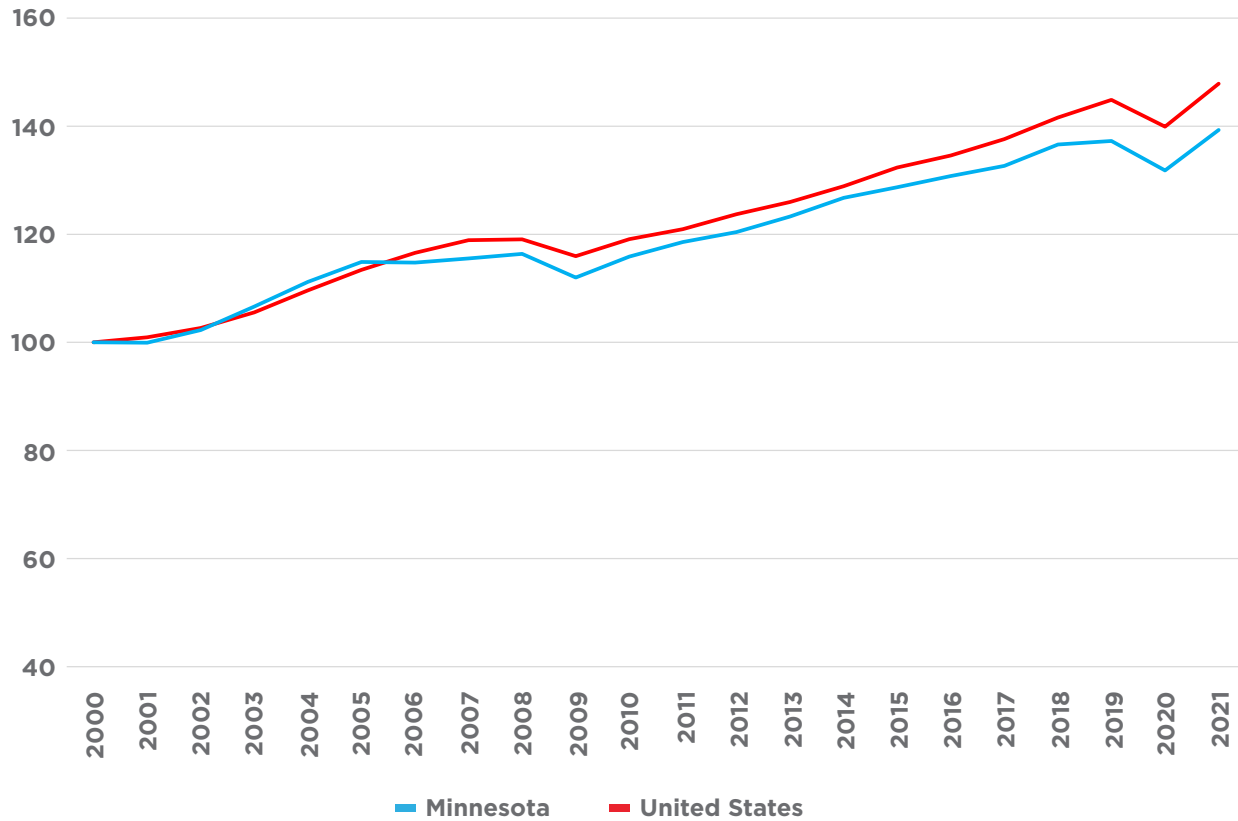
This report will be different to our previous economy reports. Instead of focusing on long term economic trends in the state economy, we will examine the

impact of COVID-19 and government responses to it over the last two to three years. Specifically, we will attempt to quantify the cost to Minnesotans in economic terms of the measures taken by the state government to combat COVID-19. Much was made of the benefits of these measures, but serious consideration of their costs has been sorely lacking. Assessment of public policy must take into account costs and benefits.

First, we will outline the measures taken

“We will examine the impact of COVID-19 and government responses to it over the last two to three years. Specifically, we will attempt to quantify the cost to Minnesotans in economic terms of the measures taken by the state government to combat COVID-19.”

FIGURE 1
Real Gross Domestic Product growth, 2000-2021
 (2000=100)

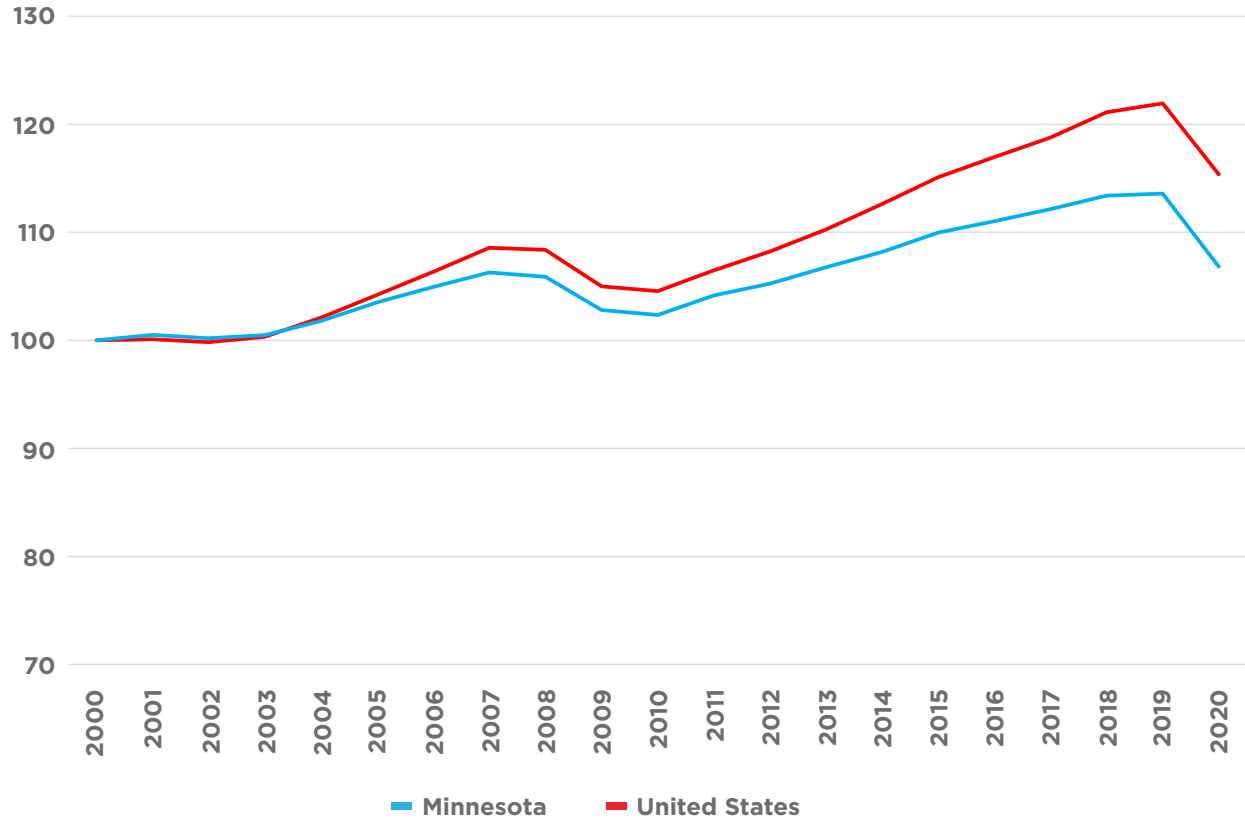


Source: Bureau of Economic Analysis and Center of the American Experiment

by Minnesota’s state government to combat COVID-19. Second, we will examine the impact of the pandemic and these responses on the economy, looking at GDP, per capita Personal Income, and employment. Finally, we will

quantify how much of the decline of GDP can be attributed to government responses. This report will not address the question of whether these policy responses were medically effective. Readers from other states can skip Section 1.

FIGURE 2
Total Employment growth, 2000-2021
(2000=100)



Source: Bureau of Economic Analysis and Center of the American Experiment



Section I: The Minnesota state government's response to COVID-19²

On January 5, 2020, the Centers for Disease Control and Prevention's (CDC) National Center for Immunization and Respiratory Diseases activated a Center Level Response for a novel pneumonia of unknown etiology. This was the first measure taken by an agency of the United States government in response to COVID-19. On January 20, the CDC confirmed the first U.S. laboratory-confirmed case of COVID-19 in the United States.³

Minnesota's first positive COVID-19 test was confirmed on March 6. On March 13, Governor Tim Walz declared a peacetime state of emergency.⁴

On March 15, Walz announced the temporary closure of all Minnesota K-12 public schools from March 18 until March 27.⁵ The following day he issued an Executive Order declaring that all businesses deemed "non-essential" were to close until March 27. While closed to dine-in customers by the order, bars and restaurants were allowed to continue serving customers by take-out or delivery.⁶ On March 21, Minnesota confirmed its

first death from COVID-19.⁷

On March 25, Walz signed an Executive Order ordering all Minnesota residents to shelter in place (SHO) beginning at 11:50pm on March 27 through April 10 at 5:00pm.⁸ Another Executive

Order extended the previous statewide closure of all non-essential businesses until May 1,⁹ and a third extended school closures and ordered a "Distance Learning Period" to last from March 30 until May 4.¹⁰

On April 8, Walz extended the SHO until May 3 at 11:59pm. He also announced that he was going to allow hardware and garden shops to open so long as they followed all the Minnesota Department of

Health guidelines.¹¹ On April 17, the governor announced that he was permitting people to engage in various outdoor activities such as hiking, fishing, hunting, and motor-boating so long as they maintained a safe and reasonable distance from other people. In addition, he allowed golf courses and bait shops to open.¹² On April 30, Walz extended the SHO to Sunday

“Minnesota’s first positive COVID-19 test was confirmed on March 6. On March 13, Governor Tim Walz declared a peacetime state of emergency.”

May 17 at 11:59pm.¹³

On May 18, the SHO expired and was replaced with a “Stay Safe Minnesota” order. The governor also announced that bars, restaurants, gyms, and salons would remain closed.¹⁴

On May 21, Walz announced his “Stay Safe MN” plan which allowed all restaurants and pubs with outdoor seating to open on June 1 at 50 percent capacity and by reservation only. Hair salons were also allowed to open, also at 50 percent capacity with reservation only. All workers in these businesses were required to wear face masks at all times, and customers were strongly encouraged to do the same.¹⁵

Under Phase III of the “Stay Safe MN” plan, on June 5, the governor allowed all restaurants, pubs, gyms, and other indoor entertainment venues to open for indoor dining at 25-50 percent capacity, with a warning that he would close businesses again if COVID cases started

to increase.¹⁶

On July 22, Walz announced a statewide mask mandate beginning July 25. The mandate required that face masks be worn in stores, public buildings, and indoor spaces where people congregate.¹⁷ On November 18, with cases rising again, Gov. Walz introduced his new ‘Dial Back Minnesota’ plan. Commencing on November 20, this four week plan closed down all pubs, restaurants, and gyms, as well as all indoor and outdoor events deemed “non-essential” for four weeks, even events that were held inside a private house. The order discouraged all non-essential travel and asked

Minnesotans to stay home whenever possible, especially during the Thanksgiving holiday.¹⁸ These measures were relaxed as the peak of infections ebbed, but capacity restrictions on bars and restaurants were not lifted until May 28, 2021.¹⁹

“These measures were relaxed as the peak of infections ebbed, but capacity restrictions on bars and restaurants were not lifted until May 28, 2021.”



Section II: The economic cost of COVID-19²⁰

The outbreak of the COVID-19 pandemic and the state and local government responses – lockdowns and shutdowns – were the greatest shock Minnesota’s economy has suffered on record. In the seven days from March 16, 2020, to March 22, 126,603 Minnesotans filed for unemployment insurance²¹ and the unemployment rate jumped from 3.9 percent in February to 10.8 percent in May.²² Minnesota’s GDP recorded its sharpest drop on record, falling by 9.7 percent in real terms from the fourth quarter of 2019 to the second quarter of 2020.

“The outbreak of the COVID-19 pandemic and the state and local government responses – lockdowns and shutdowns – were the greatest shock Minnesota’s economy has suffered on record.”

Gross Domestic Product

Table 1 gives a broad account of the economic impact of COVID-19 and its aftermath at the sub-national level.

From peaks in either the fourth quarter of 2019 or first quarter of 2020, every jurisdiction saw its GDP trough in the second quarter of

2020 (highlighted in red). The worst hit state was Nevada which saw its GDP fall in real terms by 18.2 percent while South Dakota’s suffered least, with a fall of only 5.8 percent. With a decline of 9.7 percent from peak to trough, Minnesota was the 28th worst hit jurisdiction in this initial period.

South Dakota was also one of three states to recover from this trough in one quarter, in terms of its GDP regaining its previous peak (highlighted in green). These states accounted for 5.9 percent of all jurisdictions in the United States. Another six jurisdictions (11.8 percent of the total) recovered in two quarters;

nine (17.6 percent of the total, including Iowa) recovered in three quarters; twelve (23.5 percent of the total, including Minnesota) recovered in four quarters; four (7.8 percent of the total) recovered in five quarters; eight (15.7 percent of the total, including Wisconsin) recovered in six quarters; and, as of the first quarter of 2022, nine (17.6 percent of the total, including North

TABLE 1
Real GDP growth, 2019:Q4 = 100
 (Sorted by 2020:Q2)

| | 2019:Q4 | 2020:Q1 | 2020:Q2 | 2020:Q3 | 2020:Q4 | 2021:Q1 | 2021:Q2 | 2021:Q3 | 2021:Q4 | 2022:Q1 |
|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| South Dakota | 100.0 | 101.6 | 94.2 | 100.2 | 102.7 | 104.5 | 104.8 | 104.5 | 104.6 | 103.7 |
| Utah | 100.0 | 98.5 | 94.1 | 99.7 | 102.4 | 103.8 | 104.8 | 105.5 | 107.2 | 106.6 |
| District of Columbia | 100.0 | 99.3 | 93.3 | 96.2 | 97.8 | 97.6 | 99.1 | 100.0 | 100.9 | 100.6 |
| Washington | 100.0 | 99.3 | 92.8 | 100.2 | 99.8 | 101.8 | 104.4 | 105.0 | 107.1 | 106.2 |
| Montana | 100.0 | 98.7 | 92.7 | 99.0 | 100.3 | 103.0 | 104.4 | 104.3 | 105.3 | 104.3 |
| Arizona | 100.0 | 98.8 | 92.5 | 98.6 | 100.8 | 100.9 | 102.4 | 103.2 | 104.8 | 104.1 |
| Arkansas | 100.0 | 99.3 | 92.4 | 99.0 | 99.6 | 101.3 | 102.3 | 102.5 | 103.8 | 103.5 |
| North Dakota | 100.0 | 100.5 | 92.4 | 95.4 | 95.3 | 97.4 | 98.7 | 98.0 | 97.5 | 96.0 |
| Idaho | 100.0 | 99.8 | 92.2 | 100.1 | 101.6 | 103.2 | 103.9 | 103.6 | 105.7 | 105.4 |
| Maine | 100.0 | 99.5 | 91.7 | 98.6 | 100.7 | 101.2 | 102.3 | 102.8 | 104.5 | 104.1 |
| Nebraska | 100.0 | 99.0 | 91.5 | 98.6 | 101.3 | 103.6 | 102.6 | 102.6 | 102.4 | 101.7 |
| Virginia | 100.0 | 98.7 | 91.5 | 97.0 | 98.6 | 98.9 | 99.8 | 100.5 | 102.0 | 101.5 |
| Iowa | 100.0 | 98.2 | 91.5 | 97.9 | 99.4 | 102.0 | 103.5 | 103.4 | 102.8 | 102.5 |
| Delaware | 100.0 | 97.5 | 90.9 | 96.9 | 97.4 | 96.9 | 98.5 | 99.7 | 101.6 | 101.2 |
| New Mexico | 100.0 | 99.9 | 90.9 | 95.6 | 96.3 | 97.1 | 97.8 | 97.8 | 99.6 | 98.4 |
| Missouri | 100.0 | 98.7 | 90.8 | 97.4 | 98.8 | 100.0 | 100.6 | 101.0 | 102.1 | 101.6 |
| Colorado | 100.0 | 99.1 | 90.7 | 96.3 | 97.2 | 99.0 | 101.2 | 101.8 | 103.3 | 102.8 |
| South Carolina | 100.0 | 98.6 | 90.7 | 99.0 | 99.9 | 101.2 | 102.4 | 102.8 | 104.5 | 104.2 |
| Kansas | 100.0 | 99.0 | 90.7 | 98.0 | 98.9 | 99.9 | 100.4 | 100.2 | 100.6 | 100.0 |
| New Hampshire | 100.0 | 100.4 | 90.6 | 98.9 | 101.6 | 102.2 | 107.4 | 106.4 | 108.5 | 108.8 |
| Florida | 100.0 | 98.8 | 90.5 | 97.8 | 98.2 | 99.8 | 102.7 | 103.6 | 105.5 | 105.2 |
| West Virginia | 100.0 | 99.1 | 90.4 | 97.0 | 99.1 | 99.1 | 100.8 | 100.3 | 100.7 | 99.2 |
| Texas | 100.0 | 98.2 | 90.3 | 96.1 | 97.4 | 98.4 | 100.2 | 101.1 | 103.6 | 103.0 |
| Minnesota | 100.0 | 98.4 | 90.3 | 96.1 | 97.2 | 98.6 | 100.9 | 101.4 | 102.7 | 102.2 |
| Oregon | 100.0 | 99.0 | 90.3 | 96.5 | 97.3 | 99.3 | 100.2 | 101.1 | 103.4 | 103.2 |
| North Carolina | 100.0 | 98.9 | 90.2 | 97.5 | 98.7 | 100.9 | 102.4 | 103.0 | 104.9 | 104.5 |
| Maryland | 100.0 | 98.7 | 90.2 | 96.0 | 96.2 | 98.5 | 97.6 | 98.0 | 99.2 | 99.1 |
| Georgia | 100.0 | 98.1 | 90.2 | 96.4 | 97.1 | 98.7 | 100.6 | 101.4 | 103.2 | 103.1 |
| Alabama | 100.0 | 98.9 | 90.0 | 98.0 | 98.5 | 99.1 | 99.9 | 100.3 | 101.7 | 101.2 |
| California | 100.0 | 98.7 | 89.9 | 96.9 | 98.3 | 100.8 | 103.0 | 103.7 | 106.1 | 105.9 |
| Mississippi | 100.0 | 99.4 | 89.9 | 98.4 | 99.6 | 100.2 | 100.9 | 101.0 | 102.0 | 101.7 |
| Massachusetts | 100.0 | 99.2 | 89.8 | 96.1 | 98.1 | 99.4 | 101.5 | 102.5 | 104.4 | 104.4 |
| Rhode Island | 100.0 | 98.7 | 89.7 | 97.6 | 98.7 | 97.8 | 101.8 | 102.4 | 103.7 | 103.6 |
| Wisconsin | 100.0 | 97.7 | 89.7 | 96.5 | 97.8 | 98.1 | 98.8 | 98.8 | 100.3 | 100.2 |
| Oklahoma | 100.0 | 97.7 | 89.4 | 94.7 | 94.8 | 94.7 | 95.9 | 96.2 | 98.1 | 97.1 |
| Indiana | 100.0 | 99.2 | 89.3 | 98.8 | 99.9 | 102.3 | 103.4 | 103.5 | 104.9 | 104.4 |
| Illinois | 100.0 | 98.1 | 89.3 | 95.5 | 96.3 | 98.5 | 99.1 | 99.6 | 100.9 | 100.2 |
| Ohio | 100.0 | 98.8 | 89.3 | 97.3 | 98.2 | 99.0 | 99.8 | 100.0 | 101.3 | 100.9 |
| Kentucky | 100.0 | 98.9 | 89.1 | 98.0 | 98.5 | 99.8 | 100.3 | 100.6 | 102.0 | 101.4 |
| New York | 100.0 | 98.5 | 89.0 | 95.0 | 95.8 | 97.5 | 99.2 | 99.8 | 101.0 | 100.6 |
| Alaska | 100.0 | 98.4 | 89.0 | 91.6 | 94.4 | 92.7 | 93.6 | 93.7 | 94.4 | 92.4 |
| Wyoming | 100.0 | 97.7 | 88.5 | 92.0 | 91.9 | 93.0 | 93.6 | 93.3 | 94.4 | 92.0 |
| Louisiana | 100.0 | 97.8 | 88.4 | 94.4 | 94.4 | 94.6 | 96.5 | 95.9 | 97.2 | 96.2 |
| Vermont | 100.0 | 99.7 | 88.3 | 96.3 | 97.2 | 97.9 | 98.3 | 98.4 | 100.3 | 100.5 |
| Pennsylvania | 100.0 | 98.7 | 88.1 | 95.6 | 96.8 | 97.4 | 98.5 | 99.1 | 100.7 | 100.1 |
| Connecticut | 100.0 | 97.8 | 87.9 | 94.4 | 95.5 | 95.8 | 97.5 | 98.1 | 99.9 | 99.6 |
| New Jersey | 100.0 | 99.4 | 87.9 | 95.5 | 96.3 | 98.1 | 98.6 | 99.5 | 101.3 | 100.8 |
| Tennessee | 100.0 | 99.3 | 87.1 | 96.7 | 98.6 | 101.9 | 102.9 | 103.6 | 106.1 | 105.8 |
| Michigan | 100.0 | 98.9 | 86.8 | 97.3 | 97.9 | 98.5 | 101.5 | 101.5 | 102.9 | 102.9 |
| Hawaii | 100.0 | 97.3 | 83.5 | 86.6 | 87.9 | 88.9 | 92.9 | 94.3 | 95.6 | 94.7 |
| Nevada | 100.0 | 99.5 | 81.8 | 92.0 | 93.1 | 94.6 | 98.2 | 98.8 | 100.7 | 100.6 |

Source: Bureau of Economic Analysis and Center of the American Experiment

Dakota) had failed to recover (highlighted in red).

Overall, New Hampshire's economy has fared best over the period since the fourth quarter of 2019 with real GDP growth of 8.8 percent while Wyoming has fared worst, with its GDP still 8.0 percent below its pre-COVID-19 peak. With real GDP growth of 2.2 percent over this period, Minnesota ranks 24th.

Different sectors of the economy were impacted to different degrees. Figure 3 shows how real GDP in different sectors changed in the two quarters from the fourth of 2019 to the trough in the second of 2020. The hardest hit sector both in Minnesota and across the United States was arts, entertainment, and recreation, where GDP fell by 51.8 percent and 58.8 percent, respectively. By contrast, agriculture, forestry, fishing, and hunting saw GDP increase by 4.1 percent in Minnesota and 3.4 percent across the United States. The changes in each sector were broadly similar – the percentage point difference was < 5 – except for arts, entertainment, and recreation, where Minnesota fared better than the United States generally (+ 6.9 percentage points), and mining, quarrying, and oil and gas extraction, where it fared worse (- 11.0 percentage points).

Figure 4 shows how these sectors have fared in the eight quarters from the low point in the second quarter of 2020 to the first of 2022. Just as it led the downturn both locally and nationally, the arts, entertainment, and recreation has led the recovery, increasing by 100.6 percent in Minnesota and 104.3 percent across the United States. GDP in utilities – which “comprises establishments engaged in the provision of the following utility services: electric power, natural gas, steam supply, water supply, and sewage removal”²³ – is down in Minnesota and the broader United States over the course of the recovery, by 2.5 percent and 6.5 percent respectively. Re-

tail trade is also slightly down in Minnesota (by 0.1 percent). There is more sectoral variation over the course of the recovery, with four sectors recording rates of growth or contraction > 5 percentage points different between Minnesota and the United States. These are agriculture, forestry, fishing and hunting (+ 25.8 percentage points) and mining, quarrying, and oil and gas extraction (+ 33.5 percentage points), where Minnesota fared better than the United States. Information (which “comprises establishments

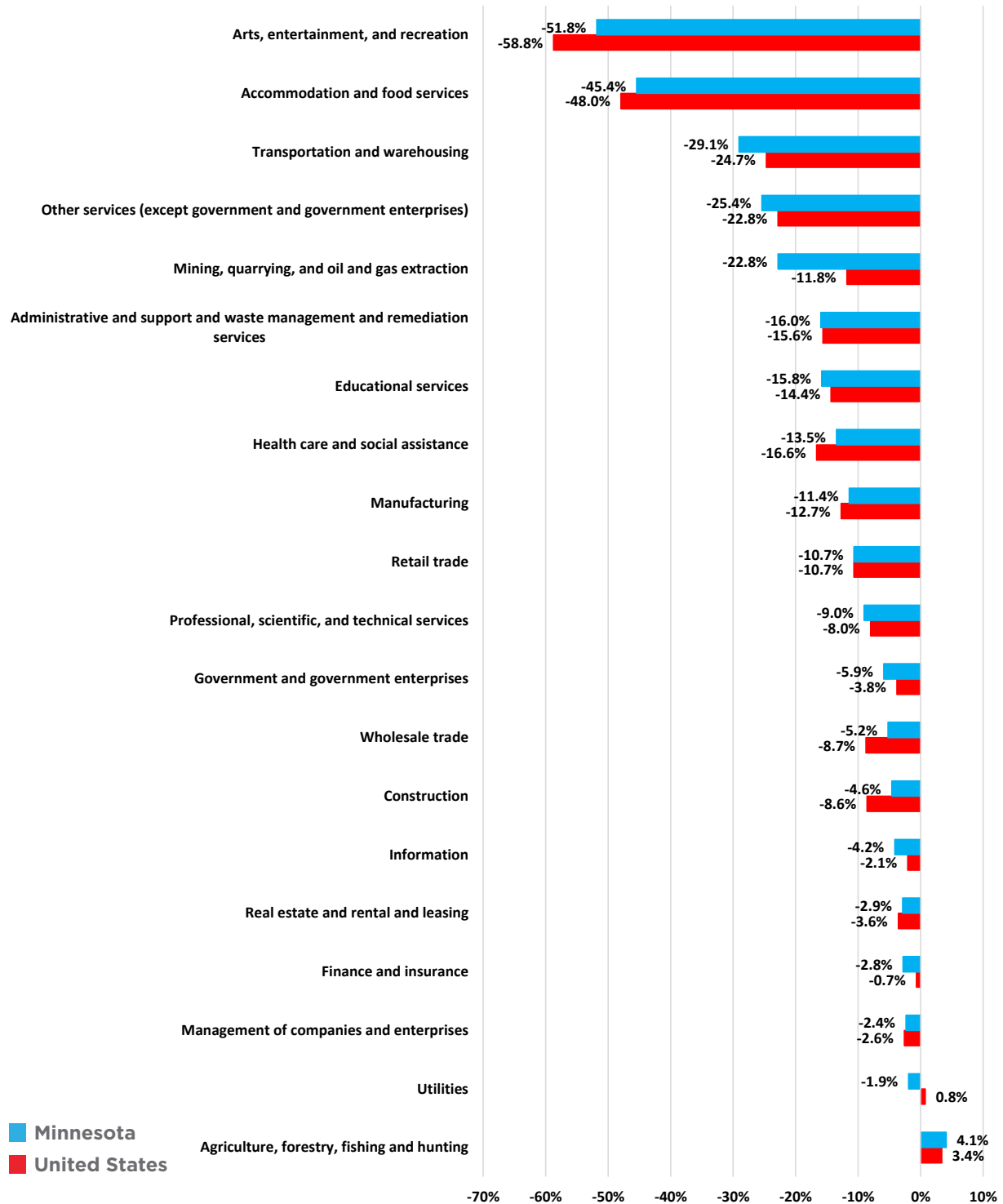
engaged in the following processes: (a) producing and distributing information and cultural products, (b) providing the means to transmit or distribute these products as well as data or communications, and (c) processing data”²⁴) fared worse (- 9.6 percentage points) as did accommodation and food services (- 16.4 percentage points).

Figure 5 brings these changes together to show in real terms how GDP has performed in each sector over the course of the pandemic and subsequent recovery. While the agriculture, forestry, fishing and hunting sector has fared best in Minnesota over this period, the information sector performed best for the United States overall. Over this longer period, even greater dispersion of growth rates was seen, with six sectors recording rates of growth > 5 percentage points different at the state and national level. These are agriculture, forestry, fishing and hunting (+ 27.5 percentage points), mining, quarrying, and oil and gas extraction (+ 15.9 percentage points), and arts, entertainment, and recreation (+ 12.4 percentage points), where Minnesota performed better, and information (- 11.9 percentage points) and transportation and warehousing (- 7.6 percentage points), where the United States performed better. As of the first quarter of 2022, 11 of 20 economic sectors at both the national and state level were above their pre-pandemic peak in real terms.

“Figure 3 shows how real GDP in different sectors changed in the two quarters from the fourth of 2019 to the trough in the second of 2020.”

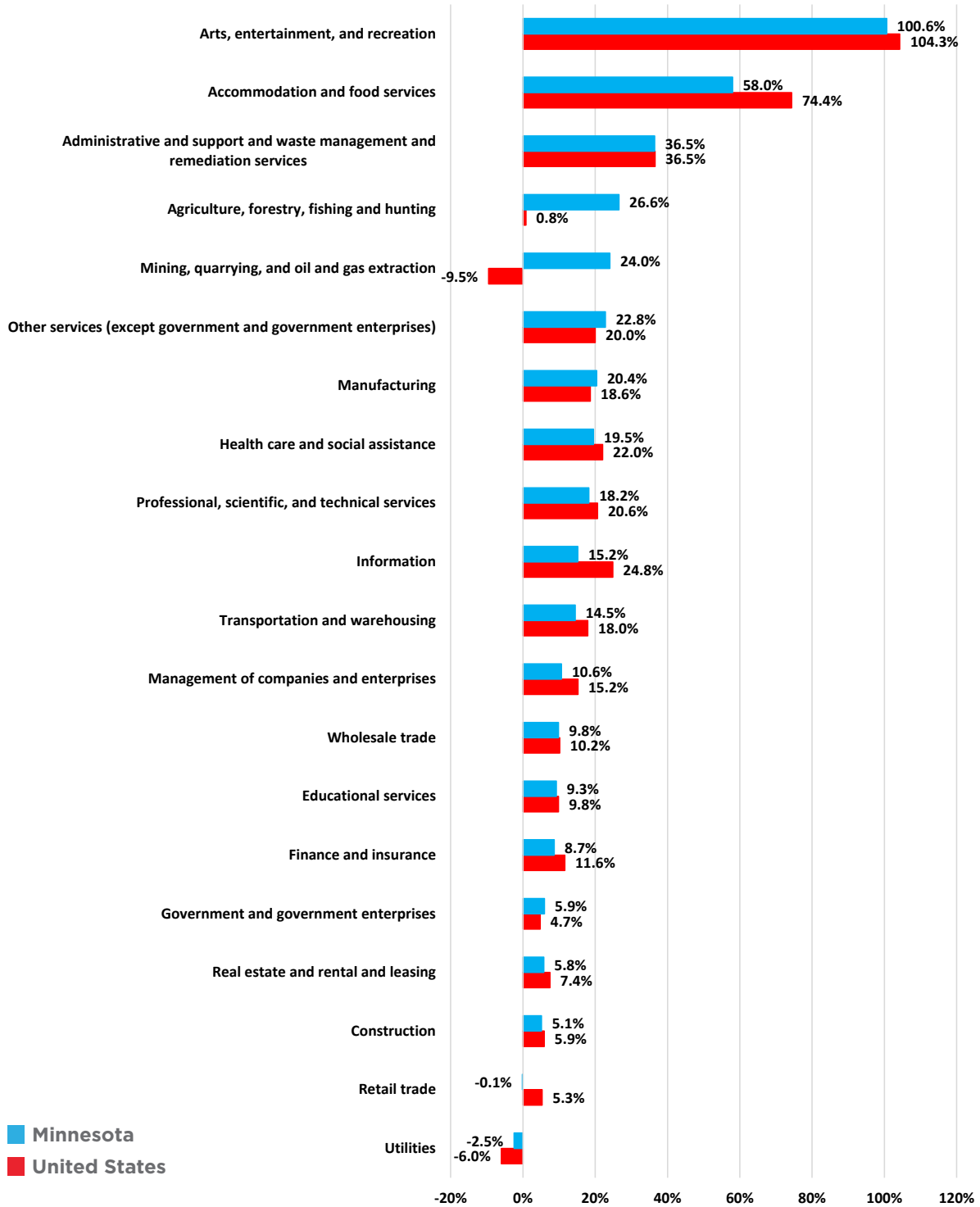
FIGURE 3

Change in real GDP by sector, 2019:Q4 to 2020:Q2



Source: Bureau of Economic Analysis and Center of the American Experiment

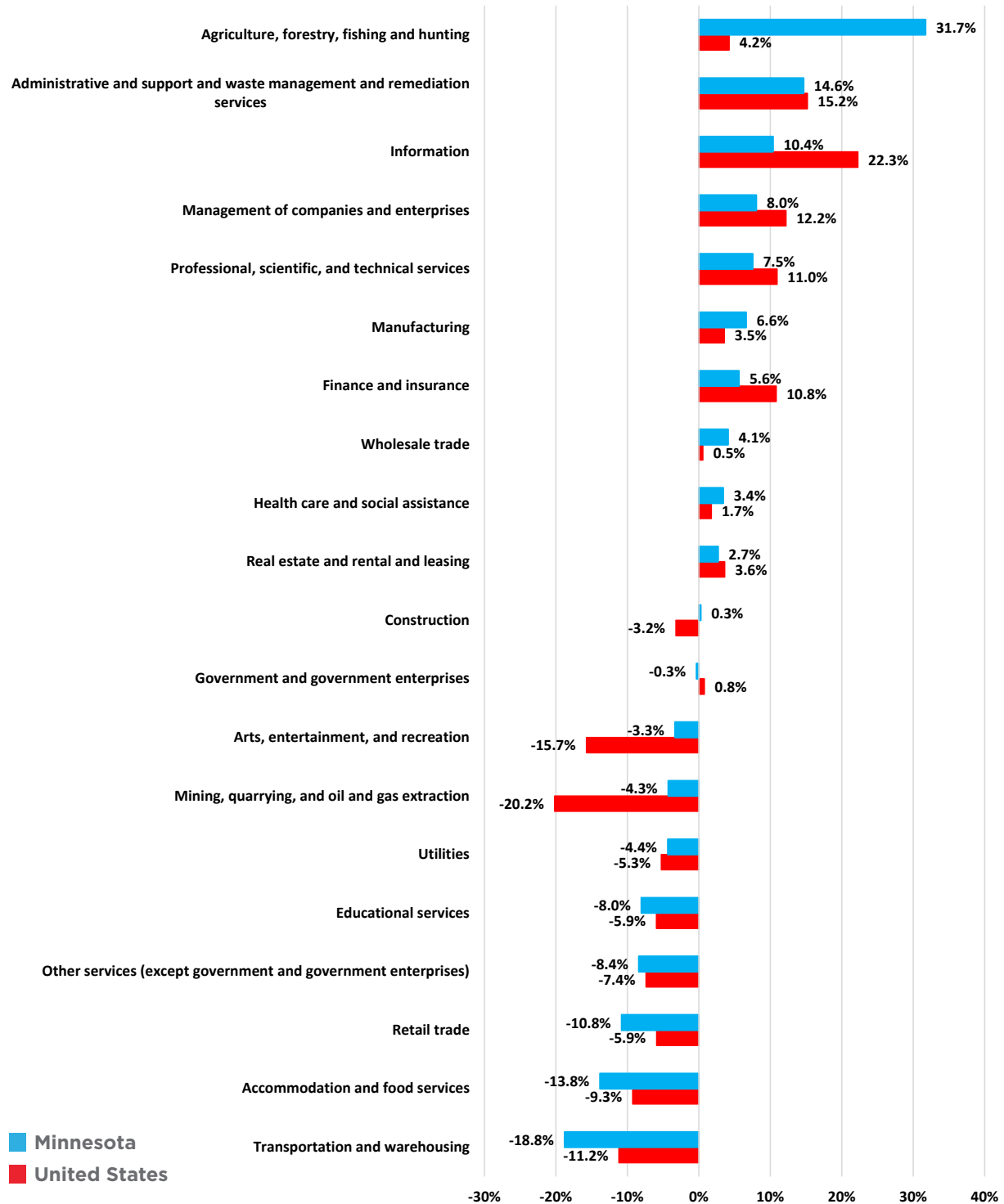
FIGURE 4
Change in real GDP, 2020:Q2 to 2022:Q1



Source: Bureau of Economic Analysis and Center of the American Experiment

FIGURE 5

Change in real GDP by sector, 2019:Q4 to 2022:Q1



Source: Bureau of Economic Analysis and Center of the American Experiment

Personal Income

To see how individuals fared, we can look at real terms, per capita data for Personal Income. This measures how much money is received by individuals and includes wages, benefits, proprietor income, dividends, interest, rent, and transfer payments like Social Security and veteran's benefits. These can be grouped into three categories: labor, capital, and transfers.

Table 2 shows something which, at first sight, might seem rather remarkable. Over the course of the COVID-19 pandemic, real per capita Personal Income actually experienced two peaks (highlighted in green), one in the second quarter of 2020 (for every jurisdiction except California) – which was the trough in terms of GDP – and a second in the first quarter of 2021. These peaks were driven by government transfers, notably various “stimulus” checks. Even so, six jurisdictions out of 51 had lower per capita Personal Income in real terms in the first quarter of 2022 than they did in the fourth quarter of 2019 (highlighted in red).

We can remove these effects by removing income from transfers from our analysis. Looking at real per capita Personal Income from wages and capital, the picture is very different, as can be seen in Table 3. Here, we see that for every jurisdiction except Alaska the second quarter of 2020 was the low point (highlighted in red), as it was for GDP. Here, Personal Income per capita in real terms from labor and capital sources (PILC) was down the most from the fourth quarter of 2019 in Nevada – by 11.8 percent – and the least in Utah – by

0.5 percent. Minnesota's decline of 3.0 percent ranks it the eighth best out of 51 jurisdictions.

The picture is much less uniform over the period of the recovery. We see that seven out of 51 jurisdictions (13.7 percent including South Dakota) recovered in one quarter (highlighted in green), in terms of PILC reaching its pre-pandemic peak in real terms. Another 34 jurisdictions (66.7 percent including Minnesota, Wisconsin, Iowa, and North Dakota) recovered in two quarters. However, six out of 51 jurisdictions (11.8 percent) have, as of the first quarter of 2022, failed to return to their pre-pandemic peak. Even worse, perhaps, is the fact that twelve out of the 44 jurisdictions that regained their pre-pandemic peak after the second quarter of 2020 have slipped back and, as of the first quarter of 2022, have per capita levels of PILC which are below their pre-pandemic peak in real terms; this includes Minnesota and Wisconsin. Worse still, in the first quarter of 2022, every single jurisdiction of the 51 had a lower per capita level of PILC than at some previous point since the trough in the second quarter of 2020. This is in spite of the fact that in every single jurisdiction, PILC was higher in nominal terms in

the first quarter of 2022 than it was in the fourth quarter of 2019: sustainable incomes are being eroded by inflation across the United States.

“To see how individuals fared, we can look at real terms, per capita data for Personal Income. This measures how much money is received by individuals and includes wages, benefits, proprietor income, dividends, interest, rent, and transfer payments like Social Security and veteran's benefits.”

Employment

In February 2020, the unemployment rate for the United States stood at 3.5 percent: by May this had risen to 14.7 percent, its highest rate since at least January 1948.²⁵ From its February

TABLE 2

Real per capita Personal Income growth, 2019:Q4 = 100

| | 2019:Q4 | 2020:Q1 | 2020:Q2 | 2020:Q3 | 2020:Q4 | 2021:Q1 | 2021:Q2 | 2021:Q3 | 2021:Q4 | 2022:Q1 |
|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Alabama | 100.0 | 100.6 | 110.3 | 103.9 | 101.9 | 116.3 | 104.1 | 102.8 | 102.5 | 101.0 |
| Alaska | 100.0 | 99.3 | 107.6 | 99.6 | 99.7 | 109.3 | 101.7 | 100.4 | 100.5 | 98.7 |
| Arizona | 100.0 | 100.9 | 113.4 | 108.3 | 104.8 | 116.5 | 106.3 | 105.3 | 105.1 | 103.0 |
| Arkansas | 100.0 | 100.4 | 111.3 | 102.8 | 101.9 | 116.2 | 105.3 | 104.0 | 102.5 | 101.5 |
| California | 100.0 | 101.2 | 108.8 | 109.7 | 107.0 | 116.8 | 110.1 | 110.0 | 107.8 | 107.0 |
| Colorado | 100.0 | 101.1 | 108.0 | 102.5 | 102.6 | 112.1 | 105.4 | 105.0 | 105.1 | 104.0 |
| Connecticut | 100.0 | 100.3 | 105.7 | 102.8 | 102.0 | 108.8 | 102.9 | 102.0 | 100.7 | 99.8 |
| Delaware | 100.0 | 101.2 | 107.8 | 102.9 | 101.9 | 112.1 | 103.2 | 101.8 | 101.9 | 101.2 |
| District of Columbia | 100.0 | 101.0 | 109.9 | 107.9 | 106.5 | 113.0 | 109.2 | 108.9 | 106.8 | 105.9 |
| Florida | 100.0 | 100.7 | 108.0 | 104.3 | 102.0 | 114.4 | 106.1 | 105.0 | 105.0 | 103.6 |
| Georgia | 100.0 | 100.3 | 110.5 | 105.9 | 102.4 | 115.6 | 105.9 | 103.9 | 103.6 | 102.1 |
| Hawaii | 100.0 | 100.0 | 111.8 | 102.8 | 101.2 | 112.2 | 104.1 | 103.6 | 99.8 | 98.1 |
| Idaho | 100.0 | 101.4 | 110.6 | 103.4 | 104.5 | 116.7 | 105.0 | 103.6 | 104.2 | 103.1 |
| Illinois | 100.0 | 100.7 | 109.0 | 105.7 | 104.2 | 115.6 | 107.6 | 106.7 | 105.7 | 104.3 |
| Indiana | 100.0 | 100.9 | 109.1 | 104.3 | 104.1 | 117.5 | 106.8 | 105.9 | 105.3 | 104.3 |
| Iowa | 100.0 | 100.0 | 110.5 | 102.6 | 104.0 | 115.2 | 107.0 | 104.5 | 102.3 | 101.9 |
| Kansas | 100.0 | 100.1 | 109.1 | 101.8 | 103.6 | 112.4 | 104.8 | 103.6 | 102.2 | 101.0 |
| Kentucky | 100.0 | 100.6 | 114.7 | 104.8 | 104.3 | 118.3 | 106.5 | 106.7 | 105.4 | 104.0 |
| Louisiana | 100.0 | 100.3 | 113.3 | 106.4 | 101.4 | 115.3 | 106.1 | 105.9 | 103.5 | 101.9 |
| Maine | 100.0 | 101.2 | 114.1 | 103.9 | 104.7 | 116.6 | 106.4 | 104.9 | 104.1 | 102.9 |
| Maryland | 100.0 | 101.0 | 108.7 | 105.5 | 103.0 | 113.5 | 104.0 | 103.2 | 102.0 | 101.1 |
| Massachusetts | 100.0 | 101.1 | 111.3 | 105.5 | 105.3 | 113.2 | 107.7 | 106.9 | 104.3 | 103.9 |
| Michigan | 100.0 | 100.3 | 116.0 | 107.2 | 103.5 | 116.9 | 107.1 | 104.0 | 101.6 | 100.7 |
| Minnesota | 100.0 | 100.9 | 111.5 | 103.5 | 103.2 | 113.4 | 106.5 | 104.1 | 102.4 | 101.6 |
| Mississippi | 100.0 | 100.7 | 114.7 | 105.6 | 103.0 | 120.1 | 106.5 | 105.1 | 103.8 | 102.2 |
| Missouri | 100.0 | 100.6 | 110.7 | 102.7 | 102.7 | 115.2 | 105.1 | 102.9 | 102.2 | 101.1 |
| Montana | 100.0 | 99.4 | 112.5 | 102.6 | 103.8 | 115.5 | 106.2 | 103.4 | 103.4 | 102.1 |
| Nebraska | 100.0 | 100.5 | 109.4 | 102.1 | 105.5 | 115.3 | 109.1 | 107.0 | 105.5 | 104.8 |
| Nevada | 100.0 | 101.5 | 108.7 | 102.4 | 100.2 | 113.2 | 104.7 | 104.0 | 102.2 | 101.3 |
| New Hampshire | 100.0 | 101.4 | 108.8 | 103.2 | 104.2 | 112.1 | 107.8 | 106.8 | 106.6 | 106.0 |
| New Jersey | 100.0 | 101.1 | 107.3 | 104.6 | 103.5 | 112.0 | 105.0 | 104.4 | 102.3 | 101.1 |
| New Mexico | 100.0 | 101.2 | 112.5 | 106.0 | 102.9 | 117.4 | 105.7 | 105.0 | 104.1 | 102.9 |
| New York | 100.0 | 100.5 | 109.8 | 106.8 | 102.4 | 113.8 | 106.3 | 105.6 | 103.4 | 102.7 |
| North Carolina | 100.0 | 100.9 | 109.7 | 103.7 | 102.5 | 115.9 | 105.3 | 104.9 | 104.6 | 103.4 |
| North Dakota | 100.0 | 101.1 | 110.6 | 101.5 | 103.9 | 113.5 | 109.2 | 106.5 | 102.5 | 102.4 |
| Ohio | 100.0 | 100.9 | 111.6 | 105.5 | 103.6 | 116.7 | 105.6 | 103.5 | 102.9 | 101.9 |
| Oklahoma | 100.0 | 99.3 | 109.3 | 100.2 | 99.9 | 111.9 | 102.2 | 100.5 | 101.0 | 99.4 |
| Oregon | 100.0 | 101.0 | 110.0 | 105.2 | 105.0 | 116.0 | 106.5 | 106.5 | 104.6 | 103.7 |
| Pennsylvania | 100.0 | 100.5 | 112.0 | 107.5 | 103.5 | 114.2 | 105.9 | 104.6 | 102.9 | 102.1 |
| Rhode Island | 100.0 | 100.6 | 112.7 | 107.1 | 103.4 | 114.0 | 106.6 | 104.6 | 102.4 | 101.4 |
| South Carolina | 100.0 | 100.6 | 111.0 | 103.4 | 102.3 | 115.7 | 104.4 | 102.9 | 102.6 | 101.1 |
| South Dakota | 100.0 | 102.2 | 111.1 | 103.4 | 108.6 | 117.0 | 110.7 | 108.5 | 106.9 | 106.5 |
| Tennessee | 100.0 | 100.4 | 108.0 | 102.7 | 101.5 | 114.9 | 104.2 | 103.4 | 103.2 | 102.2 |
| Texas | 100.0 | 99.5 | 106.5 | 102.2 | 100.4 | 111.9 | 103.5 | 102.6 | 102.7 | 101.3 |
| Utah | 100.0 | 100.4 | 109.6 | 102.5 | 104.5 | 115.0 | 104.8 | 103.8 | 104.9 | 103.2 |
| Vermont | 100.0 | 101.3 | 114.0 | 104.1 | 103.2 | 114.0 | 103.6 | 102.0 | 100.4 | 99.9 |
| Virginia | 100.0 | 100.9 | 107.9 | 103.7 | 103.4 | 112.3 | 103.8 | 103.1 | 102.7 | 101.8 |
| Washington | 100.0 | 101.2 | 109.4 | 105.2 | 103.7 | 113.4 | 107.2 | 105.4 | 104.7 | 102.8 |
| West Virginia | 100.0 | 100.6 | 115.7 | 103.6 | 102.5 | 118.0 | 105.3 | 103.7 | 104.4 | 103.2 |
| Wisconsin | 100.0 | 100.2 | 109.0 | 101.8 | 103.2 | 113.2 | 103.5 | 102.8 | 101.7 | 101.1 |
| Wyoming | 100.0 | 99.4 | 105.4 | 97.8 | 98.5 | 107.9 | 99.8 | 98.1 | 98.5 | 97.0 |

Source: Bureau of Economic Analysis and Center of the American Experiment

TABLE 3

Real per capita Personal Income from labor and capital sources growth, 2019:Q4 = 100

(Sorted by 2020:Q2)

| | 2019:Q4 | 2020:Q1 | 2020:Q2 | 2020:Q3 | 2020:Q4 | 2021:Q1 | 2021:Q2 | 2021:Q3 | 2021:Q4 | 2022:Q1 |
|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Utah | 100.0 | 100.2 | 99.5 | 100.2 | 103.8 | 102.1 | 101.9 | 101.9 | 103.3 | 102.3 |
| South Dakota | 100.0 | 102.2 | 99.3 | 101.2 | 109.1 | 104.9 | 108.9 | 107.0 | 105.2 | 105.2 |
| District of Columbia | 100.0 | 100.8 | 98.8 | 100.3 | 102.9 | 102.8 | 103.5 | 104.8 | 105.0 | 104.4 |
| Arizona | 100.0 | 100.6 | 98.3 | 100.6 | 102.8 | 100.7 | 101.3 | 101.8 | 102.3 | 101.3 |
| Idaho | 100.0 | 101.2 | 97.5 | 100.4 | 103.7 | 101.4 | 101.5 | 100.8 | 101.9 | 101.5 |
| Nebraska | 100.0 | 100.3 | 97.4 | 99.1 | 105.1 | 102.6 | 106.2 | 104.3 | 102.6 | 102.9 |
| Washington | 100.0 | 101.1 | 97.1 | 100.7 | 102.2 | 102.0 | 103.2 | 103.1 | 103.4 | 101.9 |
| Minnesota | 100.0 | 100.6 | 97.0 | 98.1 | 101.5 | 100.0 | 102.3 | 101.2 | 100.2 | 99.9 |
| Virginia | 100.0 | 100.6 | 97.0 | 99.2 | 101.3 | 100.0 | 99.8 | 100.0 | 100.4 | 99.7 |
| Arkansas | 100.0 | 100.4 | 96.8 | 98.2 | 100.9 | 100.6 | 101.8 | 101.9 | 100.9 | 100.6 |
| Maryland | 100.0 | 100.9 | 96.8 | 99.9 | 100.9 | 101.5 | 99.7 | 100.1 | 100.0 | 99.5 |
| Missouri | 100.0 | 100.6 | 96.7 | 98.8 | 101.7 | 100.9 | 101.3 | 100.8 | 100.3 | 99.9 |
| Montana | 100.0 | 99.5 | 96.7 | 98.3 | 102.9 | 101.1 | 102.5 | 100.8 | 101.3 | 100.4 |
| Colorado | 100.0 | 100.9 | 96.6 | 98.3 | 100.6 | 100.4 | 101.5 | 101.9 | 103.5 | 102.8 |
| Maine | 100.0 | 101.1 | 96.6 | 99.0 | 102.7 | 100.9 | 101.7 | 101.9 | 102.1 | 101.3 |
| North Dakota | 100.0 | 101.0 | 96.5 | 97.3 | 102.7 | 101.0 | 106.4 | 105.1 | 100.5 | 101.0 |
| Wisconsin | 100.0 | 99.9 | 96.3 | 98.2 | 101.7 | 99.6 | 99.9 | 100.4 | 99.9 | 99.7 |
| Alaska | 100.0 | 100.0 | 96.3 | 96.8 | 99.3 | 96.1 | 96.4 | 96.8 | 97.3 | 95.9 |
| Kansas | 100.0 | 99.8 | 96.1 | 98.3 | 102.4 | 99.9 | 101.9 | 101.2 | 100.4 | 99.7 |
| Florida | 100.0 | 100.4 | 96.1 | 99.8 | 100.0 | 99.5 | 101.3 | 102.0 | 102.9 | 101.7 |
| New Hampshire | 100.0 | 101.3 | 96.0 | 98.7 | 102.8 | 100.6 | 105.1 | 105.6 | 105.7 | 105.3 |
| Iowa | 100.0 | 99.9 | 95.9 | 98.1 | 103.0 | 100.9 | 103.8 | 102.8 | 100.6 | 100.9 |
| Oregon | 100.0 | 100.7 | 95.9 | 99.2 | 101.1 | 100.3 | 100.8 | 102.2 | 101.8 | 101.2 |
| California | 100.0 | 101.2 | 95.8 | 100.1 | 103.2 | 103.4 | 104.3 | 105.3 | 105.7 | 105.5 |
| North Carolina | 100.0 | 100.8 | 95.8 | 99.3 | 101.0 | 100.8 | 100.9 | 101.4 | 102.2 | 101.6 |
| Louisiana | 100.0 | 99.7 | 95.7 | 99.0 | 98.7 | 98.1 | 100.1 | 100.3 | 99.6 | 98.8 |
| West Virginia | 100.0 | 100.2 | 95.7 | 98.0 | 100.4 | 98.9 | 99.8 | 99.9 | 100.7 | 100.1 |
| Massachusetts | 100.0 | 101.1 | 95.7 | 97.9 | 101.8 | 100.6 | 101.4 | 102.9 | 102.5 | 102.4 |
| South Carolina | 100.0 | 100.3 | 95.6 | 99.7 | 100.7 | 99.9 | 100.3 | 100.3 | 100.4 | 99.7 |
| Illinois | 100.0 | 100.3 | 95.6 | 99.1 | 100.9 | 101.3 | 102.2 | 102.1 | 103.3 | 102.4 |
| Ohio | 100.0 | 100.7 | 95.6 | 99.5 | 101.0 | 100.2 | 100.5 | 100.4 | 100.5 | 100.2 |
| Oklahoma | 100.0 | 98.9 | 95.5 | 95.7 | 98.1 | 96.0 | 97.3 | 97.2 | 97.9 | 96.9 |
| Rhode Island | 100.0 | 100.6 | 95.4 | 99.6 | 101.2 | 99.1 | 101.6 | 101.3 | 101.4 | 100.9 |
| Alabama | 100.0 | 100.4 | 95.4 | 99.8 | 100.7 | 99.9 | 100.1 | 100.1 | 100.0 | 99.4 |
| Georgia | 100.0 | 100.0 | 95.4 | 99.7 | 100.3 | 100.0 | 101.5 | 101.3 | 101.2 | 100.4 |
| New Mexico | 100.0 | 100.5 | 95.0 | 97.2 | 98.7 | 96.5 | 96.9 | 97.9 | 98.7 | 98.3 |
| Kentucky | 100.0 | 100.0 | 95.0 | 98.5 | 100.8 | 100.0 | 100.3 | 100.7 | 100.3 | 100.0 |
| Connecticut | 100.0 | 100.2 | 95.0 | 97.7 | 99.8 | 98.6 | 99.0 | 99.2 | 98.7 | 98.3 |
| Mississippi | 100.0 | 100.5 | 95.0 | 99.8 | 101.7 | 100.8 | 102.1 | 102.4 | 101.1 | 100.9 |
| New Jersey | 100.0 | 101.1 | 94.8 | 98.8 | 100.1 | 100.0 | 99.8 | 100.6 | 100.8 | 100.2 |
| Indiana | 100.0 | 100.8 | 94.8 | 99.7 | 102.3 | 102.0 | 102.5 | 102.5 | 102.9 | 102.7 |
| Pennsylvania | 100.0 | 100.5 | 94.7 | 98.1 | 100.3 | 99.2 | 99.5 | 99.7 | 100.4 | 100.1 |
| New York | 100.0 | 100.6 | 94.7 | 97.8 | 99.3 | 99.9 | 100.3 | 101.3 | 102.2 | 101.8 |
| Vermont | 100.0 | 101.3 | 94.6 | 98.2 | 100.5 | 99.0 | 98.8 | 99.4 | 99.2 | 98.9 |
| Texas | 100.0 | 99.1 | 94.3 | 96.7 | 97.9 | 97.4 | 98.5 | 99.4 | 100.1 | 99.5 |
| Delaware | 100.0 | 101.2 | 94.2 | 98.4 | 100.3 | 98.9 | 98.8 | 99.0 | 100.3 | 99.7 |
| Tennessee | 100.0 | 100.4 | 93.8 | 98.3 | 100.4 | 100.7 | 100.9 | 101.5 | 102.0 | 101.7 |
| Wyoming | 100.0 | 98.8 | 93.7 | 94.3 | 96.7 | 95.3 | 95.7 | 95.0 | 95.8 | 94.4 |
| Michigan | 100.0 | 100.2 | 92.5 | 98.9 | 100.2 | 99.1 | 100.9 | 99.9 | 99.1 | 98.9 |
| Hawaii | 100.0 | 99.6 | 92.2 | 93.3 | 94.6 | 93.7 | 96.2 | 98.4 | 96.0 | 94.8 |
| Nevada | 100.0 | 101.5 | 88.2 | 94.6 | 95.6 | 94.8 | 97.6 | 99.4 | 99.4 | 99.2 |

Source: Bureau of Economic Analysis and Center of the American Experiment

2020 peak, Total Nonfarm employment in the United States plunged by 14.4 percent by April.²⁶

Figure 6 shows how total employment changed in 51 jurisdictions from the national peak in February 2020 to the trough in April. Employment in Nevada fell by 31.9 percent while the drop in Wyoming was just 3.4 percent. Minnesota, where the decline was 9.2 percent, was the joint eighth best performing jurisdiction over this period.

Figure 7 shows the change in total employment in the 51 jurisdictions from that trough in April 2020 to June 2022, the recovery period. Unsurprisingly, we see that the states which saw the steepest fall in employment from peak to trough – Nevada, Michigan, and Hawaii – have led the way in the recovery: they had more scope for job creation given the scale of the previous job destruction. This goes a long way towards explaining Minnesota’s performance: losing fewer jobs from February to April 2020 compared to other states means Minnesota needed to recover fewer jobs to regain its pre-pandemic employment levels. It now ranks eleventh from bottom in terms of job creation over the course of the recovery.

Figure 8 puts these changes together to see how total employment has changed since the pre-pandemic peak. This shows that 28 out of 51 jurisdictions – including Wisconsin and South Dakota – had higher levels of employment in June 2022 than they did in February 2020 while 23 – including Minnesota, Iowa, and North Dakota – had lower levels: they had yet to regain their pre-COVID-19 peak levels of employment.

How do we square this with Minnesota’s historically low rate of unemployment which, at 1.8 percent in June 2022, was the lowest ever recorded by a state in over half a century of

recordkeeping?

The Bureau of Labor Statistics (BLS) divides Minnesota’s population up into those in the labor force and those who are not. In turn, those who are in the labor force are divided between those who are employed and those who are unemployed but looking for work. The

unemployment rate is calculated by dividing the number of people who are unemployed but looking for work by the total number of people in the labor force. Crucially, people who are unemployed and not looking for work are not counted in the labor force. Because of this, it is possible for the unemployment rate to fall without the number of people employed rising if people simply give up looking for work. So, to properly assess the employment situation in Minnesota, we need to look at three things: changes in the number of people unemployed, changes in the number of people employed, and changes in the

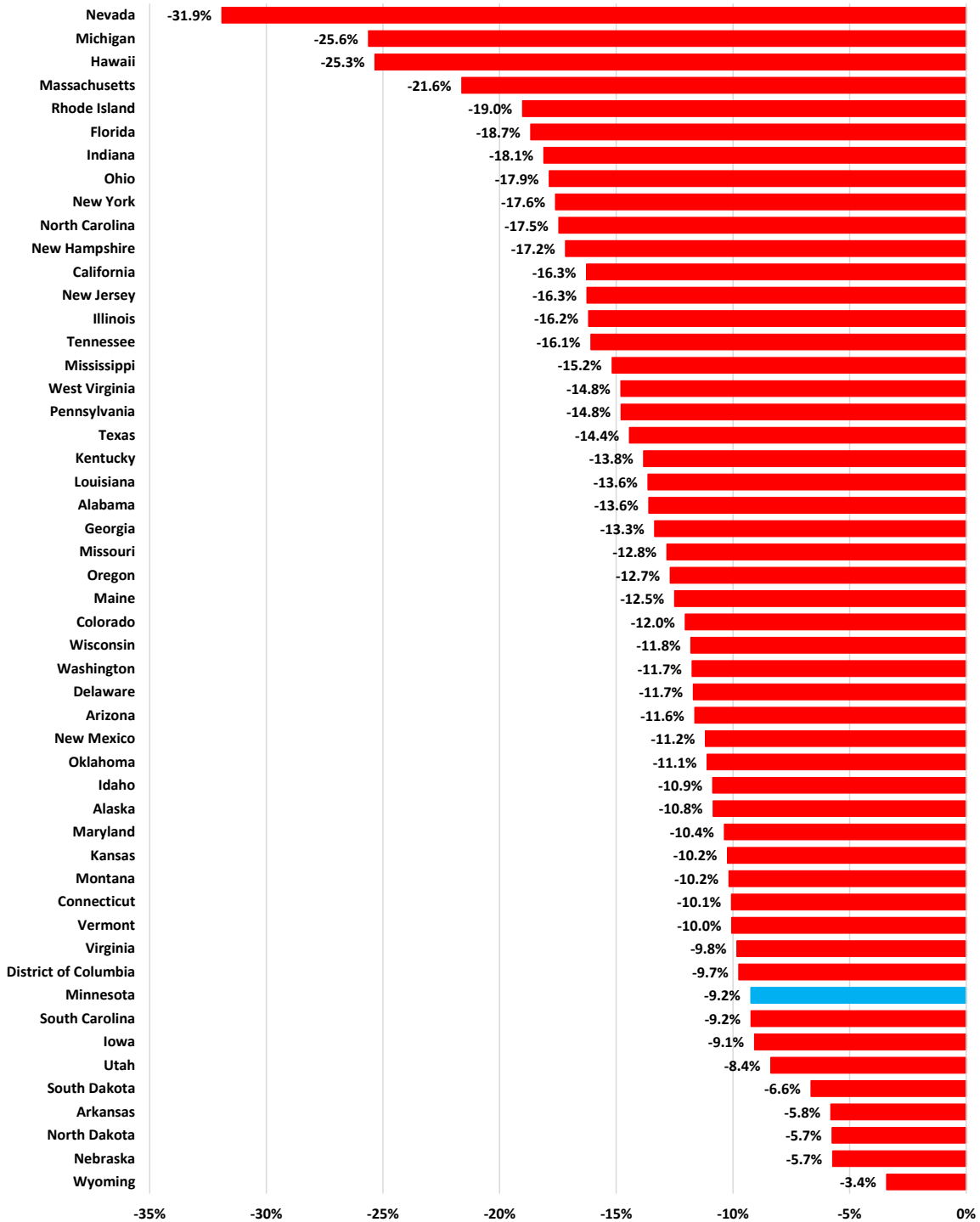
number of people not in the labor force at all.

Figure 9 shows the change in the number of people unemployed in each state and the District of Columbia since the pre-pandemic peak in employment in February 2020. It shows that Minnesota has seen the steepest drop in the country in the number of people counted as unemployed, by 53.5 percent. But, as Figure 8 shows, this is not the result of employment rising over the period – it is down by 0.2 percent. Instead, it is the result of Minnesotans leaving the labor force completely. As Figure 10 shows, the number of Minnesotans who were not in the labor force rose by 8.6 percent between February 2020 and June 2022, the eighth largest increase across the 51 jurisdictions. In short, Minnesota’s falling unemployment rate is entirely down to people leaving the labor force.

“Crucially, people who are unemployed and not looking for work are not counted in the labor force. Because of this, it is possible for the unemployment rate to fall without the number of people employed rising if people simply give up looking for work.”

FIGURE 6

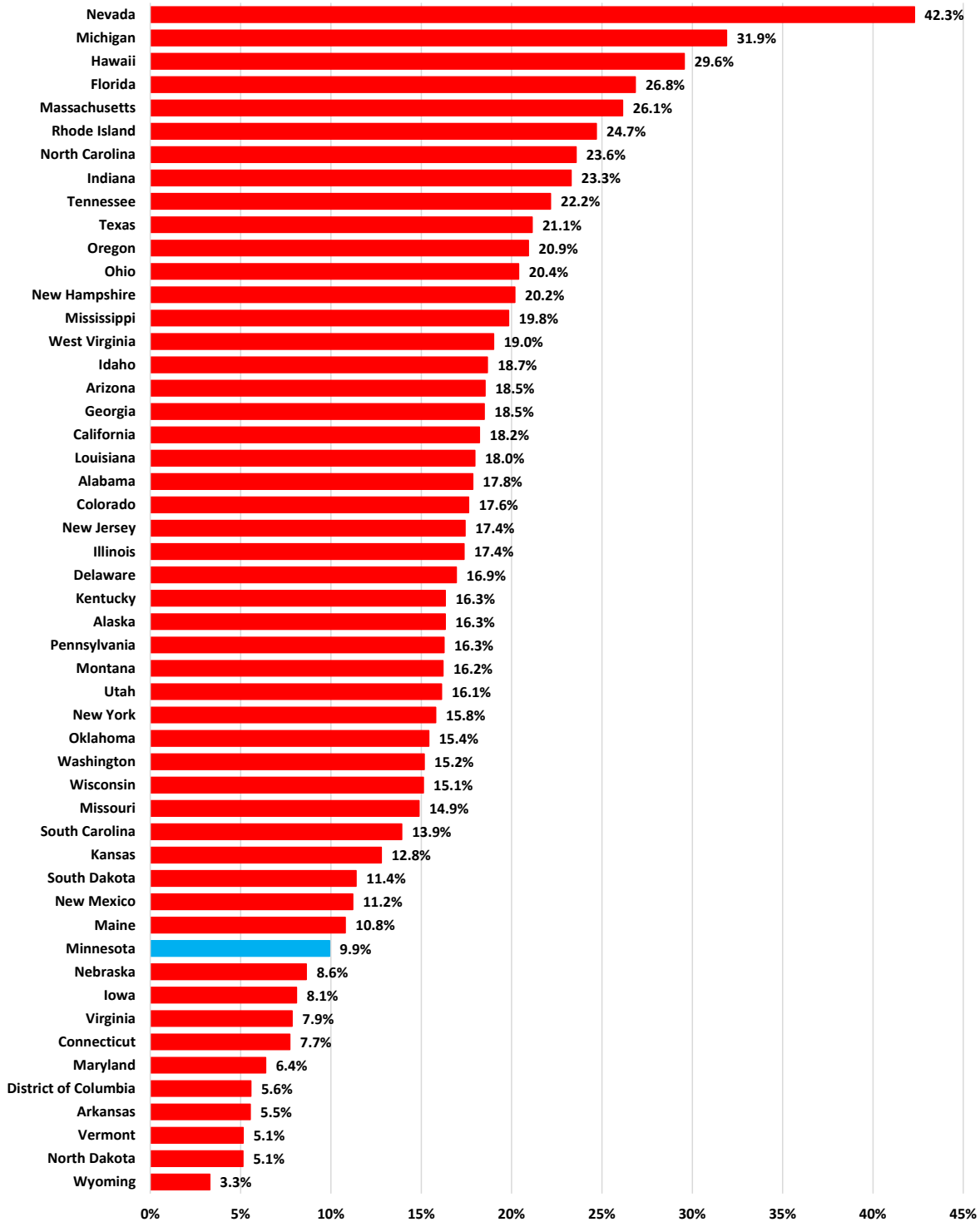
Change in Total Employment, February 2020 to April 2020



Source: Bureau of Labor Statistics and Center of the American Experiment

FIGURE 7

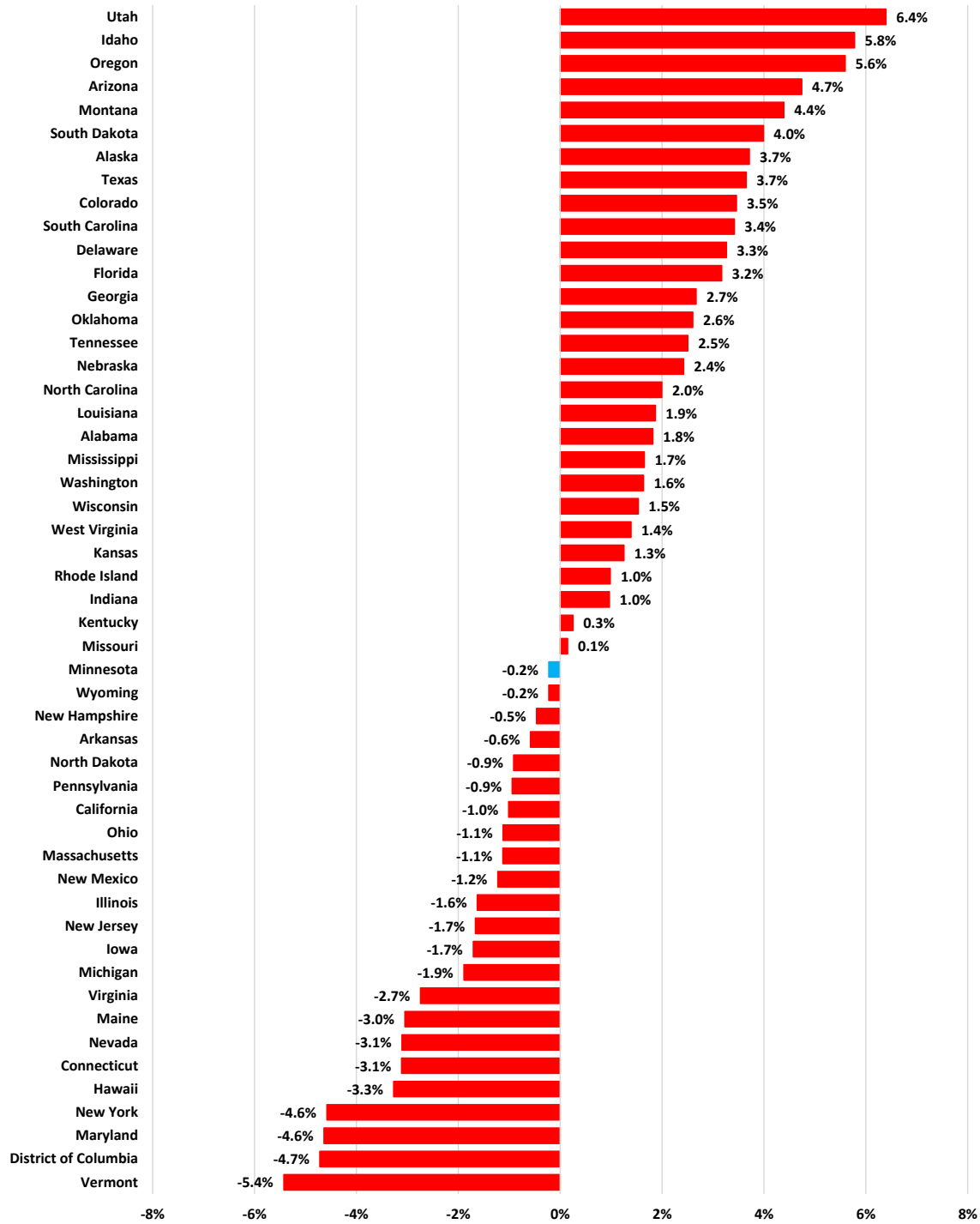
Change in Total Employment, April 2020 to June 2022



Source: Bureau of Labor Statistics and Center of the American Experiment

FIGURE 8

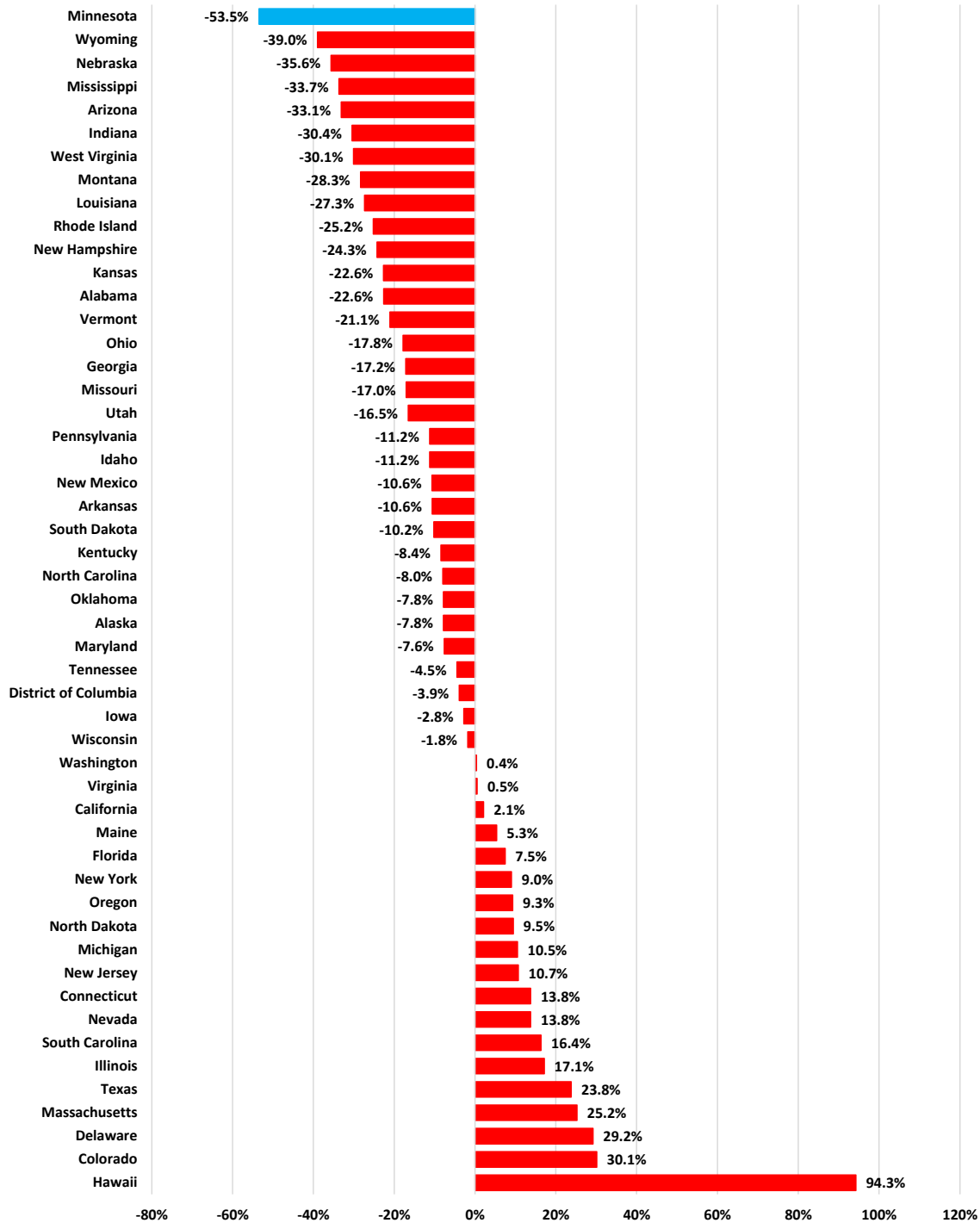
Change in Total Employment, February 2020 to June 2022



Source: Bureau of Labor Statistics and Center of the American Experiment

FIGURE 9

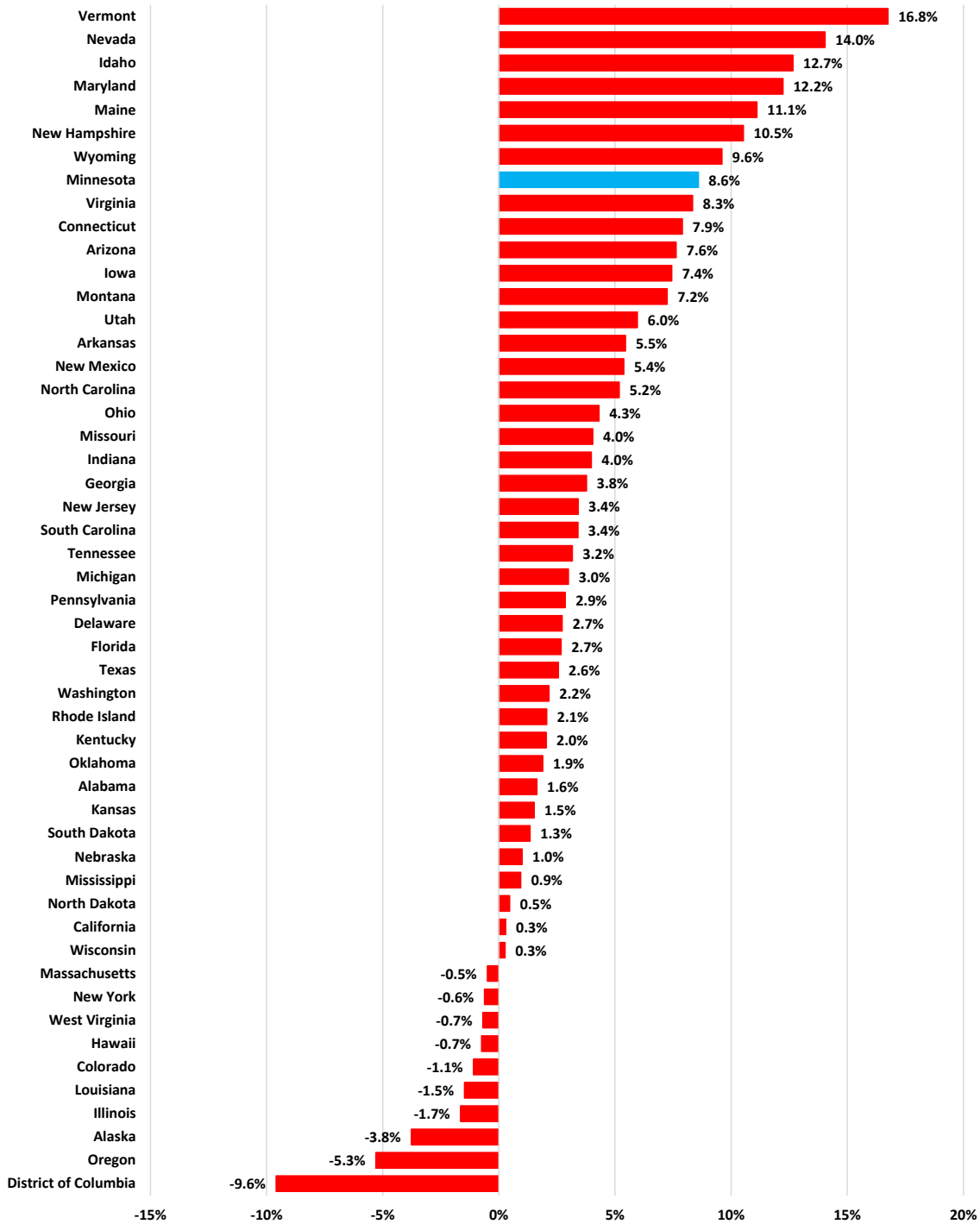
Change in total Unemployed, February 2020 to June 2022



Source: Bureau of Labor Statistics and Center of the American Experiment

FIGURE 10

Change in total not in the labor force, February 2020 to June 2022



Source: Bureau of Labor Statistics and Center of the American Experiment



(Governor Walz) Photo Courtesy: Lorie Shaull/Flickr.com

Section III: How much of the cost was due to government measures?

Different states pursued different policies in response to COVID-19. Figure 11 shows the daily stringency index compiled by the Blavatnik School of Government at Oxford University for Minnesota and its neighbors from January 1, 2020, to March 31, 2021. We see that all states tightened stringency significantly in March 2020, although the peaks differed somewhat. After that, the stringency values fall at different times and rates and reasonably large differences persist with Minnesota and Wisconsin generally more stringent than Iowa or the Dakotas.

Did these differences in policy response account for differences in the observed economic outcomes? If so, how much of these differences were they responsible for? Our hypothesis is that more stringent measures caused greater economic damage in terms of lower per capita GDP. Our null hypothesis, then, is that there is no relationship between levels of stringency and changes in real GDP.

“Our hypothesis is that more stringent measures caused greater economic damage in terms of lower per capita GDP.”

Variables

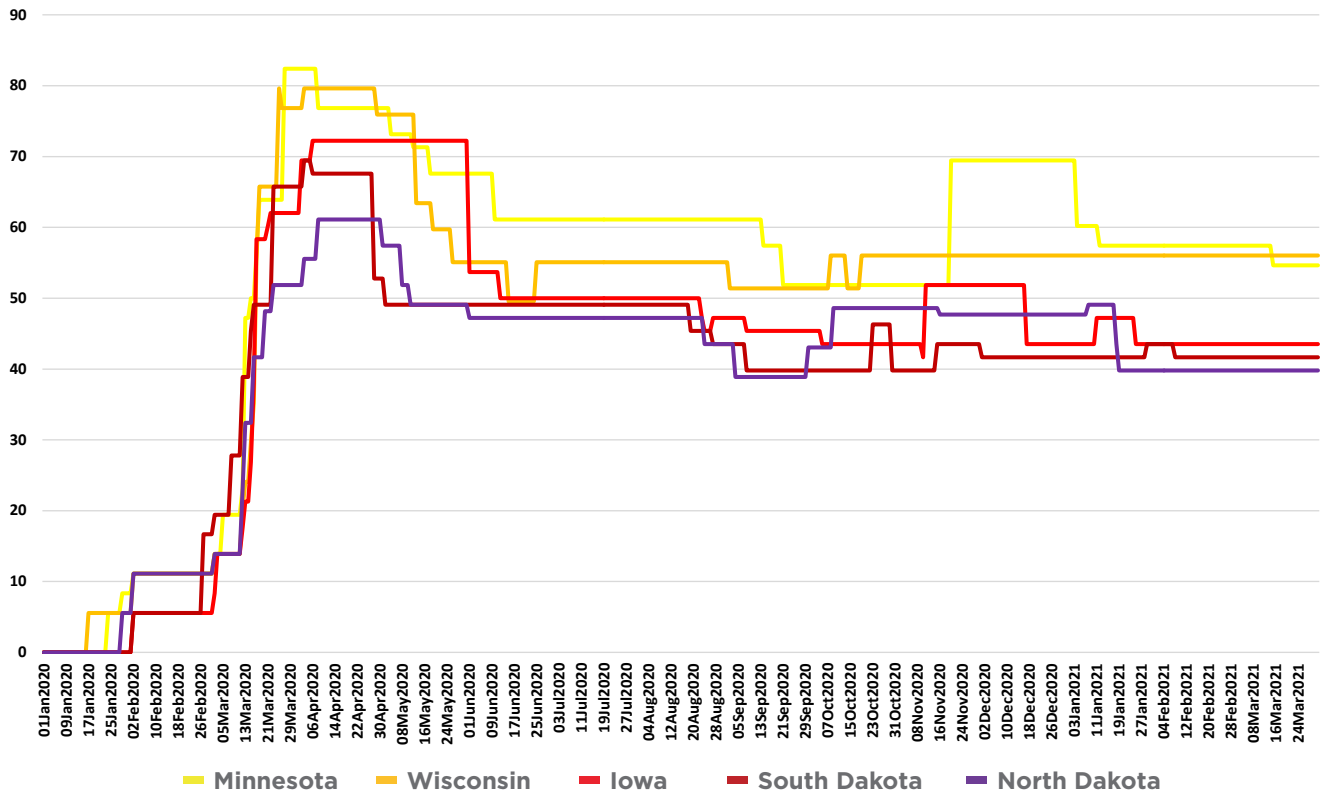
We will focus our analysis on GDP, a standard measure of a state’s economic health. Our response (or outcome) variable will be:

REALGDP – This is the percentage change in real GDP from quarter to quarter for the five quarters 2020:Q1, 2020:Q2, 2020:Q3, 2020:Q4, and 2021:Q1 using seasonally adjusted data from the Bureau of Economic Analysis, as shown in Table 4.²⁷

To try to explain the changes in REALGDP, we use four explanatory (or factor) variables.

STRINGENCY – To quantify the different state responses we use the Coronavirus Government Response Tracker compiled by the Blavatnik School of Government at Oxford University. This gave the 50 states and District of Columbia a daily index number up to April 28, 2021, quantifying the stringency of their policy response to COVID-19.²⁸ We will use the average daily stringency score over the quarter, shown in Table 5.

FIGURE 11
COVID-19 stringency index



Source: Blavatnik School of Government at Oxford University and Center of the American Experiment

CASES – State government anti-COVID-19 policies were not the only influence working on state economies over this period. Foremost among these was the virus itself. We can hypothesize that, to some extent, people reacted to it by staying home even without the government telling them to.²⁹ This imposed some economic cost independent of any actions taken by state government. But how do we quantify the virus to test this? There are three possible measures: cases, hospitalizations, and deaths, all adjusted for population. There are drawbacks to using cases as a measure as there were many asymptomatic cases of COVID-19 where those infected never knew they had been.³⁰ The only data we have for cases then is for diagnosed cases, which is not the same thing, and could

be a function of a more extensive testing regime rather than of an increased prevalence of the virus.³¹ Newly diagnosed cases was, nevertheless, the number generally reported so, to the extent that people reacted to this news, it seems reasonable to use this — the average daily number of new cases in a quarter taken from the CDC — as an explanatory variable, shown in Table 6.³²

TAXES – Fiscal policies also differ across states and this, too, could account for some of the differences in the observed economic outcomes. The Tax Foundation’s State Business Tax Climate Index awards each jurisdiction a score, and we can use these scores for 2020 and 2021 as an explanatory variable, shown in Table 7.³³

ARTS & LEISURE GDP – It is also clear from Figure 3 that, at both the national and local level in Minnesota, the economic impacts of COVID-19 were much heavier in two sectors of the economy than in others: arts, entertainment, and recreation and accommodation and food services. Nationally, the decline in arts, entertainment, and recreation GDP from the fourth quarter of 2019 to the second quarter of 2020 was 58.8 percent, more than double the decline in the third most heavily impacted sector nationally, which was transportation and warehousing declining by 24.7 percent. The second worst hit sector nationally in that period, accommodation and food services, saw a decline of 48.0 percent, nearly double the decline of transportation and warehousing. It seems reasonable to assume, then, that jurisdictions with higher shares of their overall GDP in these sectors going into the pandemic would have been more heavily impacted. Indeed, while the share of United States GDP derived from arts, entertainment, recreation, accommodation, and food services was 3.9 percent in 2019, for Hawaii it was 11.1 percent and for Nevada it was 15.2 percent, as Figure 12 shows. As Table 1 shows, these were the two worst hit states between the fourth quarter of 2019 and the first quarter of 2022. So, another explanatory variable will be the share of the jurisdiction’s economy accounted for by the arts, entertainment, recreation, accommodation, and food services sector in 2019, provided by the Bureau of Economic Analysis, shown in Figure 12.³⁴

TABLE 4
Real GDP growth rates

| % CHANGE IN REAL GDP | | | | | |
|----------------------|---------|---------|---------|---------|---------|
| | 2020:Q1 | 2020:Q2 | 2020:Q3 | 2020:Q4 | 2021:Q1 |
| Alabama | -1.1 | -9.0 | 9.0 | 0.5 | 0.6 |
| Alaska | -1.6 | -9.6 | 2.9 | 3.1 | -1.8 |
| Arizona | -1.2 | -6.3 | 6.6 | 2.1 | 0.1 |
| Arkansas | -0.7 | -6.9 | 7.2 | 0.6 | 1.7 |
| California | -1.3 | -8.9 | 7.8 | 1.4 | 2.6 |
| Colorado | -0.9 | -8.5 | 6.1 | 0.9 | 1.8 |
| Connecticut | -2.2 | -10.1 | 7.4 | 1.1 | 0.3 |
| Delaware | -2.5 | -6.7 | 6.5 | 0.6 | -0.5 |
| District of Columbia | -0.7 | -6.0 | 3.1 | 1.6 | -0.2 |
| Florida | -1.2 | -8.4 | 8.0 | 0.5 | 1.6 |
| Georgia | -1.9 | -8.1 | 6.9 | 0.7 | 1.7 |
| Hawaii | -2.7 | -14.2 | 3.7 | 1.4 | 1.2 |
| Idaho | -0.2 | -7.5 | 8.5 | 1.5 | 1.7 |
| Illinois | -1.9 | -9.0 | 6.9 | 0.9 | 2.4 |
| Indiana | -0.8 | -10.0 | 10.6 | 1.1 | 2.4 |
| Iowa | -1.8 | -6.9 | 7.1 | 1.5 | 2.6 |
| Kansas | -1.0 | -8.4 | 8.0 | 0.9 | 1.0 |
| Kentucky | -1.1 | -9.9 | 10.1 | 0.5 | 1.3 |
| Louisiana | -2.2 | -9.6 | 6.7 | 0.1 | 0.2 |
| Maine | -0.5 | -7.8 | 7.6 | 2.0 | 0.6 |
| Maryland | -1.3 | -8.6 | 6.4 | 0.1 | 2.4 |
| Massachusetts | -0.8 | -9.5 | 7.1 | 2.0 | 1.3 |
| Michigan | -1.1 | -12.3 | 12.2 | 0.6 | 0.7 |
| Minnesota | -1.6 | -8.2 | 6.4 | 1.2 | 1.4 |
| Mississippi | -0.6 | -9.6 | 9.4 | 1.3 | 0.6 |
| Missouri | -1.3 | -8.0 | 7.3 | 1.4 | 1.1 |
| Montana | -1.3 | -6.0 | 6.8 | 1.3 | 2.7 |
| Nebraska | -1.0 | -7.6 | 7.8 | 2.7 | 2.3 |
| Nevada | -0.5 | -17.8 | 12.4 | 1.2 | 1.6 |
| New Hampshire | 0.4 | -9.8 | 9.2 | 2.8 | 0.6 |
| New Jersey | -0.6 | -11.6 | 8.7 | 0.8 | 1.8 |
| New Mexico | -0.1 | -9.1 | 5.2 | 0.7 | 0.9 |
| New York | -1.5 | -9.6 | 6.8 | 0.8 | 1.7 |
| North Carolina | -1.1 | -8.8 | 8.0 | 1.2 | 2.3 |
| North Dakota | 0.5 | -8.1 | 3.3 | -0.1 | 2.2 |
| Ohio | -1.2 | -9.6 | 9.0 | 1.0 | 0.8 |
| Oklahoma | -2.3 | -8.6 | 5.9 | 0.2 | -0.1 |
| Oregon | -1.0 | -8.8 | 6.9 | 0.9 | 2.0 |
| Pennsylvania | -1.3 | -10.7 | 8.5 | 1.3 | 0.7 |
| Rhode Island | -1.3 | -9.2 | 8.8 | 1.1 | -0.9 |
| South Carolina | -1.4 | -8.0 | 9.2 | 0.9 | 1.3 |
| South Dakota | 1.6 | -7.3 | 6.3 | 2.5 | 1.7 |
| Tennessee | -0.7 | -12.3 | 11.0 | 2.0 | 3.3 |
| Texas | -1.8 | -8.0 | 6.4 | 1.3 | 1.0 |
| Utah | -1.5 | -4.5 | 6.0 | 2.7 | 1.3 |
| Vermont | -0.3 | -11.5 | 9.1 | 0.9 | 0.7 |
| Virginia | -1.3 | -7.3 | 6.1 | 1.6 | 0.3 |
| Washington | -0.7 | -6.5 | 7.9 | -0.4 | 2.0 |
| West Virginia | -0.9 | -8.8 | 7.4 | 2.1 | 0.0 |
| Wisconsin | -2.3 | -8.2 | 7.6 | 1.3 | 0.4 |
| Wyoming | -2.3 | -9.4 | 4.0 | -0.2 | 1.2 |

Source: Bureau of Economic Analysis and Center of the American Experiment

TABLE 5

Average daily stringency

| STRINGENCY | | | | | |
|----------------------|---------|---------|---------|---------|---------|
| | 2020:Q1 | 2020:Q2 | 2020:Q3 | 2020:Q4 | 2021:Q1 |
| Alabama | 14.9 | 65.9 | 47.4 | 43.5 | 45.5 |
| Alaska | 22.7 | 70.3 | 57.5 | 59.1 | 56.4 |
| Arizona | 15.8 | 61.6 | 60.5 | 54.9 | 57.7 |
| Arkansas | 14.3 | 68.1 | 60.9 | 56.5 | 54.8 |
| California | 22.2 | 73.6 | 66.0 | 61.7 | 61.1 |
| Colorado | 16.9 | 75.0 | 60.2 | 57.0 | 57.1 |
| Connecticut | 20.8 | 76.3 | 67.0 | 66.5 | 64.5 |
| Delaware | 20.9 | 81.1 | 63.7 | 56.2 | 57.8 |
| District of Columbia | 16.2 | 83.5 | 71.8 | 67.0 | 62.9 |
| Florida | 18.6 | 76.2 | 66.3 | 40.0 | 48.1 |
| Georgia | 12.7 | 72.3 | 64.2 | 59.3 | 56.4 |
| Hawaii | 17.4 | 73.9 | 78.7 | 76.4 | 76.5 |
| Idaho | 14.6 | 69.7 | 55.3 | 56.6 | 51.7 |
| Illinois | 19.3 | 78.2 | 56.6 | 57.9 | 58.0 |
| Indiana | 18.4 | 66.5 | 48.8 | 46.4 | 54.0 |
| Iowa | 14.7 | 65.1 | 48.3 | 46.8 | 44.1 |
| Kansas | 15.2 | 71.3 | 57.2 | 55.6 | 55.6 |
| Kentucky | 20.9 | 83.2 | 65.8 | 60.2 | 58.5 |
| Louisiana | 16.6 | 70.3 | 66.2 | 59.7 | 61.1 |
| Maine | 18.9 | 88.6 | 79.4 | 63.8 | 57.0 |
| Maryland | 17.9 | 85.0 | 57.1 | 60.1 | 59.8 |
| Massachusetts | 18.7 | 72.9 | 61.7 | 60.5 | 70.5 |
| Michigan | 20.7 | 66.5 | 56.0 | 58.5 | 60.0 |
| Minnesota | 20.0 | 70.6 | 59.8 | 59.9 | 57.5 |
| Mississippi | 13.0 | 72.0 | 57.5 | 52.2 | 50.1 |
| Missouri | 18.0 | 65.6 | 45.3 | 48.0 | 52.0 |
| Montana | 17.0 | 70.5 | 57.0 | 52.4 | 51.4 |
| Nebraska | 17.4 | 72.5 | 54.5 | 51.4 | 47.9 |
| Nevada | 16.1 | 69.5 | 58.7 | 52.5 | 56.2 |
| New Hampshire | 17.6 | 78.0 | 47.2 | 46.4 | 47.6 |
| New Jersey | 18.8 | 77.4 | 60.3 | 54.7 | 53.7 |
| New Mexico | 18.1 | 85.1 | 80.7 | 74.5 | 66.6 |
| New York | 22.3 | 79.5 | 73.1 | 72.7 | 65.8 |
| North Carolina | 16.3 | 72.8 | 64.5 | 64.5 | 68.0 |
| North Dakota | 15.2 | 52.7 | 44.4 | 47.7 | 41.5 |
| Ohio | 23.0 | 73.4 | 63.6 | 56.4 | 56.3 |
| Oklahoma | 18.3 | 62.7 | 42.9 | 42.3 | 46.2 |
| Oregon | 16.5 | 70.5 | 62.7 | 60.1 | 61.1 |
| Pennsylvania | 18.2 | 72.7 | 62.2 | 57.7 | 51.1 |
| Rhode Island | 21.6 | 78.0 | 67.0 | 66.8 | 61.1 |
| South Carolina | 18.9 | 69.8 | 53.3 | 52.4 | 47.2 |
| South Dakota | 16.8 | 54.7 | 45.7 | 41.6 | 41.9 |
| Tennessee | 15.2 | 69.3 | 59.3 | 55.5 | 58.3 |
| Texas | 15.7 | 65.2 | 57.3 | 54.2 | 51.4 |
| Utah | 16.6 | 59.9 | 52.5 | 52.4 | 40.9 |
| Vermont | 20.3 | 75.6 | 65.5 | 65.7 | 69.1 |
| Virginia | 14.8 | 74.5 | 56.2 | 53.5 | 60.0 |
| Washington | 18.3 | 72.4 | 63.7 | 61.7 | 61.1 |
| West Virginia | 17.0 | 71.7 | 57.8 | 52.9 | 52.4 |
| Wisconsin | 19.1 | 66.1 | 53.9 | 55.4 | 56.0 |
| Wyoming | 18.1 | 70.6 | 59.5 | 60.2 | 62.7 |

Source: Blavatnik School of Government at Oxford University and Center of the American Experiment

TABLE 6

Average newly diagnosed cases of COVID-19 per 100,000

| CASES | | | | | |
|----------------------|---------|---------|---------|---------|---------|
| | 2020:Q1 | 2020:Q2 | 2020:Q3 | 2020:Q4 | 2021:Q1 |
| Alabama | 0.3 | 8.2 | 25.0 | 45.0 | 33.8 |
| Alaska | 0.2 | 1.2 | 10.3 | 56.2 | 22.4 |
| Arizona | 0.3 | 11.9 | 21.1 | 45.7 | 49.8 |
| Arkansas | 0.3 | 7.4 | 22.7 | 51.0 | 38.8 |
| California | 0.3 | 6.0 | 16.2 | 39.1 | 37.6 |
| Colorado | 0.7 | 5.7 | 7.3 | 51.7 | 23.6 |
| Connecticut | 1.2 | 13.2 | 3.3 | 38.7 | 38.6 |
| Delaware | 0.5 | 12.4 | 9.7 | 40.7 | 41.2 |
| District of Columbia | 1.0 | 15.7 | 7.9 | 21.5 | 25.0 |
| Florida | 0.4 | 7.6 | 27.0 | 31.3 | 36.5 |
| Georgia | 0.6 | 7.9 | 25.7 | 33.5 | 40.7 |
| Hawaii | 0.3 | 0.5 | 8.7 | 6.4 | 6.3 |
| Idaho | 0.4 | 3.3 | 21.1 | 58.3 | 23.7 |
| Illinois | 0.7 | 11.9 | 12.9 | 56.8 | 24.4 |
| Indiana | 0.5 | 7.0 | 11.9 | 62.7 | 28.9 |
| Iowa | 0.2 | 9.8 | 20.4 | 65.4 | 24.5 |
| Kansas | 0.2 | 5.2 | 16.8 | 60.2 | 30.3 |
| Kentucky | 0.2 | 3.9 | 13.9 | 48.4 | 37.9 |
| Louisiana | 1.6 | 12.5 | 25.6 | 34.5 | 31.0 |
| Maine | 0.4 | 2.3 | 1.7 | 16.4 | 20.5 |
| Maryland | 0.4 | 11.7 | 10.1 | 26.8 | 24.2 |
| Massachusetts | 1.3 | 15.2 | 4.1 | 37.6 | 41.2 |
| Michigan | 2.8 | 11.5 | 12.7 | 37.5 | 23.1 |
| Minnesota | 0.2 | 6.9 | 11.9 | 60.2 | 20.1 |
| Mississippi | 1.1 | 11.4 | 25.2 | 44.3 | 31.7 |
| Missouri | 0.6 | 4.1 | 19.8 | 55.2 | 21.4 |
| Montana | 0.3 | 0.8 | 12.4 | 68.2 | 23.5 |
| Nebraska | 0.1 | 10.6 | 14.7 | 67.4 | 24.8 |
| Nevada | 0.5 | 6.2 | 21.4 | 50.5 | 28.2 |
| New Hampshire | 0.4 | 4.3 | 2.0 | 28.2 | 32.4 |
| New Jersey | 2.9 | 18.2 | 4.4 | 37.2 | 45.6 |
| New Mexico | 0.2 | 6.1 | 8.9 | 58.2 | 25.6 |
| New York | 2.3 | 7.9 | 2.0 | 18.0 | 26.4 |
| North Carolina | 0.2 | 6.7 | 15.1 | 35.1 | 38.0 |
| North Dakota | 0.2 | 4.9 | 26.0 | 98.4 | 15.0 |
| Ohio | 0.3 | 4.6 | 9.4 | 50.4 | 29.9 |
| Oklahoma | 0.6 | 4.8 | 20.7 | 63.4 | 32.8 |
| Oregon | 0.2 | 2.1 | 6.4 | 20.6 | 13.4 |
| Pennsylvania | 0.5 | 7.3 | 6.2 | 40.5 | 32.8 |
| Rhode Island | 0.6 | 15.5 | 7.6 | 61.2 | 45.7 |
| South Carolina | 0.3 | 7.4 | 23.9 | 35.7 | 51.3 |
| South Dakota | 0.2 | 8.2 | 19.1 | 94.1 | 23.3 |
| Tennessee | 0.4 | 6.4 | 23.7 | 60.2 | 36.7 |
| Texas | 0.2 | 5.9 | 21.9 | 35.0 | 39.1 |
| Utah | 0.4 | 7.3 | 16.7 | 67.4 | 36.9 |
| Vermont | 0.6 | 1.4 | 0.8 | 9.1 | 19.0 |
| Virginia | 0.2 | 7.8 | 10.8 | 25.9 | 34.2 |
| Washington | 1.0 | 3.9 | 7.9 | 22.0 | 17.1 |
| West Virginia | 0.1 | 1.7 | 7.9 | 42.2 | 35.0 |
| Wisconsin | 0.3 | 5.7 | 18.0 | 72.2 | 21.8 |
| Wyoming | 0.3 | 2.6 | 8.4 | 72.4 | 22.9 |

Source: Centers for Disease Control and Prevention and Center of the American Experiment

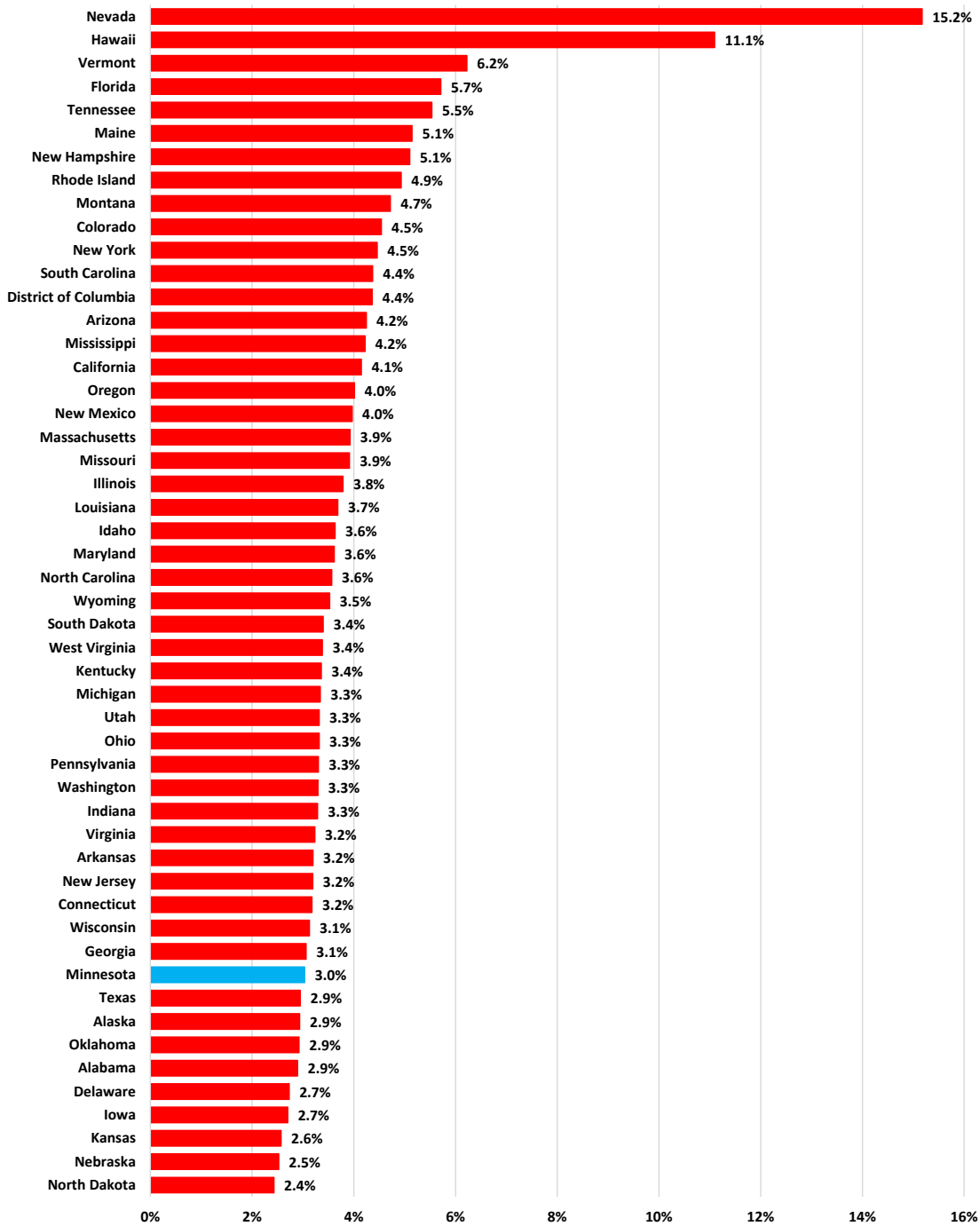
TABLE 7
State Business Tax Climate Index score

| TAXES | | |
|----------------------|------|------|
| | 2020 | 2021 |
| Alabama | 4.50 | 4.47 |
| Alaska | 7.27 | 7.28 |
| Arizona | 5.15 | 5.13 |
| Arkansas | 4.37 | 4.39 |
| California | 4.01 | 4.00 |
| Colorado | 5.19 | 5.18 |
| Connecticut | 4.21 | 4.24 |
| Delaware | 5.47 | 5.44 |
| District of Columbia | 4.30 | 4.32 |
| Florida | 6.86 | 6.89 |
| Georgia | 4.93 | 4.97 |
| Hawaii | 4.67 | 4.66 |
| Idaho | 5.22 | 5.20 |
| Illinois | 4.80 | 4.75 |
| Indiana | 5.59 | 5.58 |
| Iowa | 4.34 | 4.50 |
| Kansas | 4.83 | 4.88 |
| Kentucky | 5.22 | 5.23 |
| Louisiana | 4.47 | 4.46 |
| Maine | 4.98 | 4.99 |
| Maryland | 4.44 | 4.42 |
| Massachusetts | 4.91 | 4.92 |
| Michigan | 5.41 | 5.42 |
| Minnesota | 4.26 | 4.26 |
| Mississippi | 4.96 | 4.96 |
| Missouri | 5.36 | 5.45 |
| Montana | 6.08 | 6.07 |
| Nebraska | 5.01 | 5.00 |
| Nevada | 5.91 | 5.90 |
| New Hampshire | 6.04 | 6.05 |
| New Jersey | 3.29 | 3.34 |
| New Mexico | 5.09 | 5.17 |
| New York | 4.03 | 4.06 |
| North Carolina | 5.51 | 5.51 |
| North Dakota | 5.28 | 5.29 |
| Ohio | 4.66 | 4.64 |
| Oklahoma | 4.98 | 4.97 |
| Oregon | 5.75 | 5.42 |
| Pennsylvania | 5.00 | 5.01 |
| Rhode Island | 4.65 | 4.68 |
| South Carolina | 4.91 | 4.92 |
| South Dakota | 7.42 | 7.42 |
| Tennessee | 5.27 | 5.25 |
| Texas | 5.50 | 5.46 |
| Utah | 5.62 | 5.60 |
| Vermont | 4.43 | 4.45 |
| Virginia | 5.08 | 5.04 |
| Washington | 5.34 | 5.33 |
| West Virginia | 5.18 | 5.17 |
| Wisconsin | 5.05 | 5.06 |
| Wyoming | 7.62 | 7.72 |

Source: The Tax Foundation

FIGURE 12

Arts, entertainment, recreation, accommodation, and food services share of total GDP, 2019



Source: Bureau of Economic Analysis and Center of the American Experiment

TABLE 8

| Dependent Variable: REALGDP | | | | |
|--|-------------|--------------------|-------------|-----------|
| Method: Panel EGLS (Period random effects) | | | | |
| Date: 07/05/22 Time: 13:32 | | | | |
| Sample: 2020Q1 2021Q1 | | | | |
| Periods included: 5 | | | | |
| Cross-sections included: 51 | | | | |
| Total panel (balanced) observations: 255 | | | | |
| Swamy and Arora estimator of component variances | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| TAXES | -0.044814 | 0.165274 | -0.271148 | 0.7866 |
| STRINGENCY | -0.050983 | 0.018937 | -2.692262 | 0.0077 |
| ARTSLEISURE | -0.075835 | 0.066868 | -1.134096 | 0.2581 |
| CASES | -0.000413 | 0.013022 | -0.031744 | 0.9747 |
| C | 3.164246 | 1.498916 | 2.111022 | 0.0360 |
| Effects Specification | | | | |
| | | | S.D. | Rho |
| Cross-section fixed (dummy variables) | | | | |
| Period random | | | 0.000000 | 0.0000 |
| Idiosyncratic random | | | 1.915132 | 1.0000 |
| Weighted Statistics | | | | |
| R-squared | 0.903598 | Mean dependent var | | -0.057255 |
| Adjusted R-squared | 0.877569 | S.D. dependent var | | 5.476652 |
| S.E. of regression | 1.916288 | Sum squared resid | | 734.4322 |
| F-statistic | 34.71551 | Durbin-Watson stat | | 2.125190 |
| Prob(F-statistic) | 0.000000 | | | |
| Unweighted Statistics | | | | |
| R-squared | 0.903598 | Mean dependent var | | -0.057255 |
| Sum squared resid | 734.4322 | Durbin-Watson stat | | 2.125190 |

Results

Table 8 shows the results of a multiple panel regression measuring the impact of our chosen explanatory (or factor) variables on the growth rate of real GDP.³⁵

The Prob(F-statistic) tells us whether or not the model as a whole is statistically significant. In this case, the p-value is less than 0.05: in other words, there is a less than 5 percent chance that the null hypothesis is true indicating we

can reject it. This indicates that our explanatory variables combined have a statistically significant association with real GDP growth rates.

The individual p-values (Prob.) tell us whether or not each explanatory variable is significant. We can see that, while STRINGENCY is statistically significant ($p < 0.05$), none of the other explanatory variables are ($p > 0.05$). This addresses concerns about multicollinearity, the possibility that stringency and cases might rise

and fall together. Multicollinearity usually just reduces the power of the significance test on those variables, so it does not appear to be a problem.

The Adjusted R Square value of 0.877 indicates that 87.7 percent of the variation in real GDP growth rates can be explained by differences in taxes, stringency, the share of employment in arts and leisure in 2019, and cases.

The Coefficients of each explanatory variable tell us the average expected change in the growth rate of real GDP, assuming the other explanatory variables remain constant, for each point increase in the stringency index. In this case, for each point increase in the stringency index, the growth rate of real GDP is expected to decrease by 0.05 percentage points.

We can use this coefficient to make a quantitative estimate of the impact of stringency — government policy responses to COVID-19 — on real GDP growth.

First, we calculate the effect of stringency with the following equation:

$$\text{stringency effect} = -0.05 \times \text{change in stringency}$$

So, where Minnesota’s stringency score in Q1:2020 was 20.0 and in Q2:2020 it was 70.6, ceteris paribus the stringency effect on real GDP growth will have been:

$$-2.5 = -0.05 \times (70.6 - 20.0)$$

In other words, the increase in stringency from 20.0 in the first quarter of 2020 to 70.6 in the second quarter of 2020 lowered the growth rate of real GDP from the first quarter to the second by 2.5 percentage points.

We can then subtract the stringency effect from the observed change in real GDP to estimate what that would have been without these policy

responses, as the following equation shows:

$$\text{real GDP growth without response} = \text{real GDP growth rate} - \text{stringency effect}$$

Again, in Minnesota’s case, for the first to second quarters of 2020 this gives:

$$-5.7 = -8.2 - -2.5$$

This tells us that, without government policy responses to COVID-19, Minnesota’s real GDP growth from the first to the second quarter of 2020 could have been -5.7 percent instead of the -8.2 percent actually observed.

We can repeat this for each jurisdiction in each quarter to come up with estimated real GDP growth rates without government COVID-19 responses. We can apply these rates for the five quarters 2020:Q1, 2020:Q2, 2020:Q3, 2020:Q4, and 2021:Q1 to the level

of GDP in Q4:2019 to estimate what per capita GDP would have been without government policy responses to COVID-19.

Figure 13 shows the difference between actual GDP in the first quarter of 2021 and our estimate of GDP in that quarter without government policy responses to COVID-19. Hawaii suffered the greatest loss resulting from its government’s policy responses, with GDP lower by 4.2 percent (3.1 billion) in the first quarter of 2021 than it would have been without these responses. At the other end of the scale is Utah, whose government policy responses to COVID-19 imposed an economic cost of 2.1 percent of GDP (\$3.9 billion). Minnesota’s GDP in the first quarter of 2021 was 3.1 percent (\$10.6 billion) lower as a result of its government’s policy response to COVID-19, ranking it 25th.

Figure 14 puts this into some perspective, dividing these dollar losses by the population

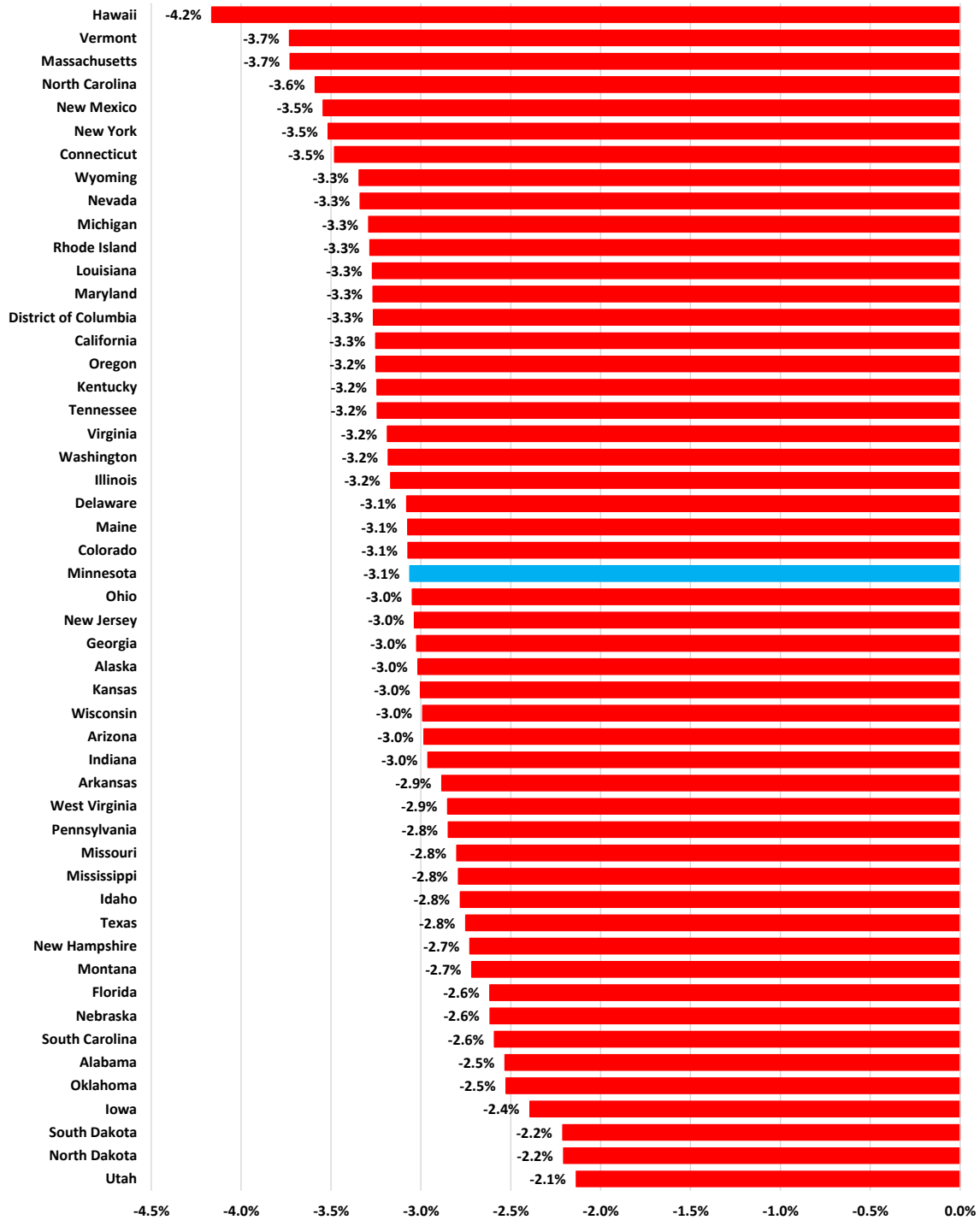
“Minnesota’s GDP in the first quarter of 2021 was 3.1 percent (\$10.6 billion) lower as a result of its government’s policy response to COVID-19, ranking it 25th.”

to derive a per capita loss. Here, the District of Columbia was by far the worst hit jurisdiction with a per capita GDP loss of \$6,152 by the first quarter of 2021 resulting from its government's COVID-19 policy response. This should be qualified, however, by noting that it is one of the easier jurisdictions to move out of while still working and producing GDP there. Its population decline — 2.5 percent from 2019 to 2021 — was the steepest among the 51 jurisdictions, indicating that a fall in the

denominator played a more significant role in the result of this equation than elsewhere. At the other end of the scale is Mississippi, whose government's COVID-19 policy responses imposed costs of "only" \$1,004 per person by the first quarter of 2021. Minnesota's government policy responses to COVID-19 cost each resident \$1,866 in lost GDP by the end of the first quarter of 2021, or \$7,464 for a family of four: this was the 15th biggest hit in the United States.

FIGURE 13

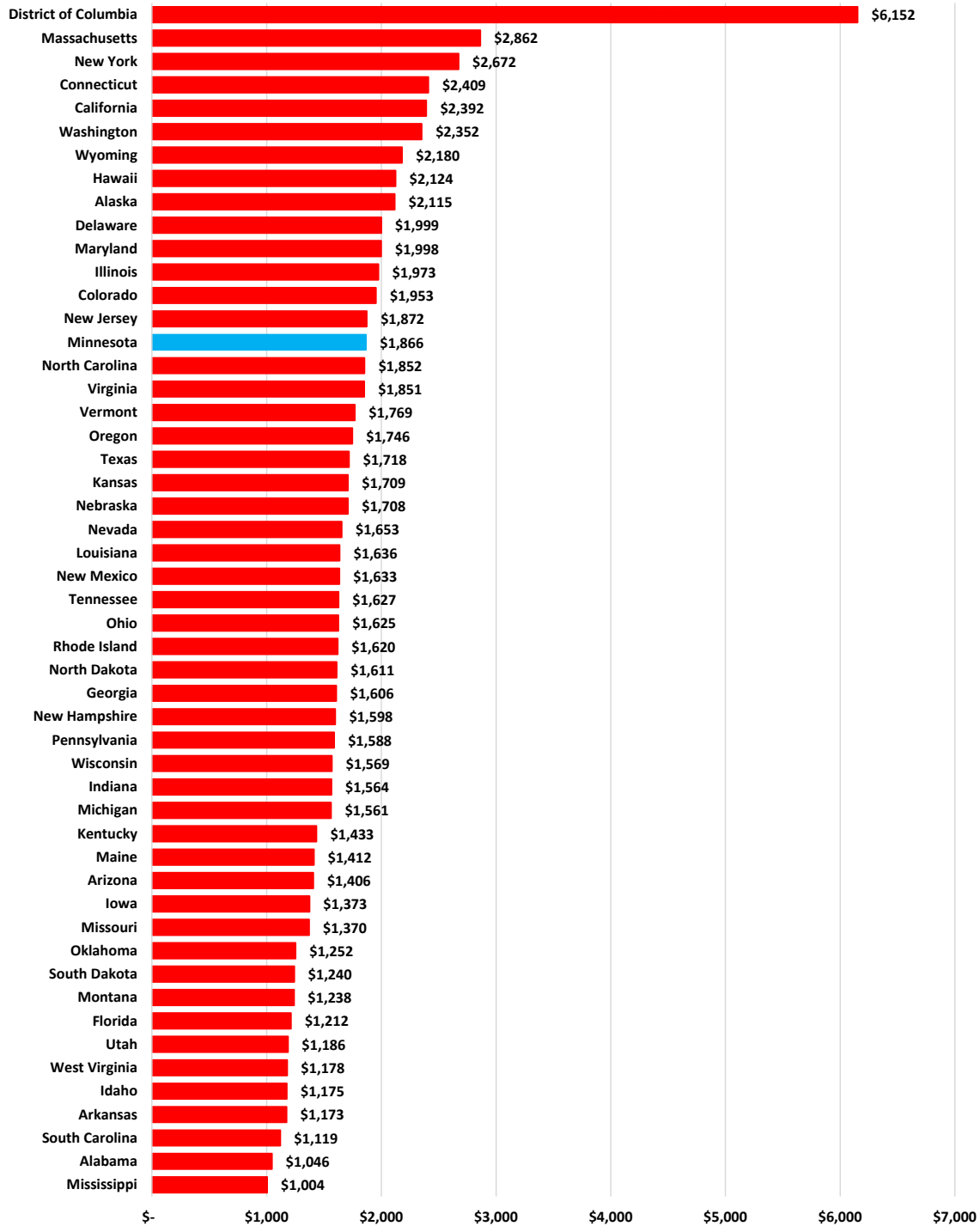
GDP loss resulting from state and local anti-COVID-19 measures, Q1:2021



Source: Center of the American Experiment

FIGURE 14

Per capita GDP loss resulting from state and local anti-COVID-19 measures, Q1:2021



Source: Center of the American Experiment

Conclusion

Public policy must be judged on its costs as well as its benefits. This paper attempts to quantify the economic costs of the unprecedented peacetime impositions on economic life by state and local governments in response to COVID-19. Such attempts are absolutely crucial to the evaluation of public policy.

These estimates do not say whether these policy responses were right or wrong. To repeat, their benefits, as well as these costs, must be weighed to make that judgement. The question,

then, is what were the medical benefits of these policy responses, the lockdowns and shutdowns? This paper makes no attempt to answer that question, but, when such estimates are offered, we now have something to place in the other scale.³⁶ We can now begin to answer the question of whether the cost of these policy responses — \$7,464 for a family of four Minnesotans over the first year of the pandemic — were worth the benefits.

Acknowledgements

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Endnotes

- 1** Center of the American Experiment's coverage of the COVID-19 pandemic can be found here: <https://www.americanexperiment.org/tag/covid-19/>.
- 2** For a critique of the Walz administration's COVID-19 policies in the first year of the pandemic, see John Phelan, "Covid Confusion," *Thinking Minnesota*, Spring 2021, pp. 38-41.
- 3** U.S. Centers for Disease Control and Prevention website, "CDC Museum COVID-19 Timeline," at <https://www.cdc.gov/museum/timeline/covid19.html>.
- 4** Glenn Howatt, "Minnesota declares peacetime emergency to combat coronavirus as cases rise to 14," *Star Tribune*, March 14, 2020, at <https://www.startribune.com/minnesota-declares-peacetime-emergency-to-combat-coronavirus-as-cases-rise-to-14/568772352/>.
- 5** Bill Strande, "MN school closure starts on Wednesday; 35 cases of COVID-19," *Kare 11*, March 14, 2020, at <https://www.kare11.com/article/news/health/coronavirus/mn-schools-close-coronavirus/89-ebd39743-f5fb-4378-98e7-7ce30805867e>.
- 6** State of Minnesota, Executive Office of the Governor [Tim Walz], Emergency executive order 20-04: Providing for Temporary Closure of Bars, Restaurants, and Other Places of Public Accommodation. 17 Mar. 2020. https://mn.gov/governor/assets/2020_03_16_EO_20_04_Bars_Restaurants_tcm1055-423380.pdf.
- 7** News Release, Minnesota Department of Health, "Health officials confirm first death due to COVID-19 in Minnesota," March 21, 2020, available at <https://www.health.state.mn.us/news/pressrel/2020/covid032120.html>.
- 8** State of Minnesota, Executive Office of the Governor [Tim Walz]. Emergency executive order 20-20: Directing Minnesotans to Stay at Home. 27 Mar. 2020. https://mn.gov/governor/assets/3a.%20EO%2020-20%20FINAL%20SIGNED%20Filed_tcm1055-425020.pdf.
- 9** State of Minnesota, Executive Office of the Governor [Tim Walz]. Emergency executive order 20-18: Continuing the Closure of Bars, Restaurants, and Other Places of Public Accommodation. 25 Mar. 2020. <https://www.leg.mn.gov/archive/execorders/20-18.pdf>.
- 10** State of Minnesota, Executive Office of the Governor [Tim Walz]. Emergency executive order 20-19: Authorizing and Directing the Commissioner of Education to Implement a Distance Learning Period and Continue to Provide a Safe Learning Environment for Minnesota's Students. 30 Mar. 2020. <https://www.leg.mn.gov/archive/execorders/20-19.pdf>.
- 11** News Release, State of Minnesota, Office of Governor Tim Walz and Lt. Governor Peggy Flanagan, "Governor Walz Extends Stay Home Order for Minnesotans," 8 Apr. 2020. <https://mn.gov/governor/news/#/detail/appld/1/id/427372>.
- 12** State of Minnesota, Executive Office of the Governor [Tim Walz]. Emergency executive order 20-38: Allowing for Safe Outdoor Recreation. 18 Apr. 2020. https://mn.gov/governor/assets/EO%2020-38%20Final%20Signed%20and%20Filed_tcm1055-429089.pdf.
- 13** State of Minnesota, Executive Office of the Governor [Tim Walz]. Emergency executive order 20-48: Extending and Modifying Stay at Home Order, Continuing Temporary Closure of Bars, Restaurants, and Other Places of Public Accommodation, and Allowing Additional Workers in Certain Non-Critical Sectors to Return to Safe Workplaces. 3 May 2020. https://mn.gov/governor/assets/EO%2020-48%20Final_tcm1055-430499.pdf.
- 14** Peter Callaghan, "Walz to let Minnesota's stay-at-home order expire, extends state of emergency another 30 days," *Minn Post*, May 13, 2020, at <https://www.minnpost.com/state-government/2020/05/walz-to-let-minnesotas-stay-at-home-order-expire-extends-state-of-emergency-another-30-days/>.
- 15** State of Minnesota, Executive Office of the Governor [Tim Walz]. Emergency executive order 20-56: Safely Reopening Minnesota's Economy and Ensuring Safe Non-Work Activities during the COVID-19 Peacetime Emergency. 13 May 2020. https://mn.gov/governor/assets/EO%2020-56%20Final_tcm1055-433768.pdf.
- 16** News Release, State of Minnesota, Office of Governor Tim Walz and Lt. Governor Peggy Flanagan, "Governor Walz Announces Gradual Re-Opening of Indoor Dining, Gyms, Entertainment Venues," 5 June 2020. <https://mn.gov/governor/news/#/detail/appld/1/id/434917>.
- 17** Torey Van Oot and Jeremy Olson, "Gov. Tim Walz mandates face masks indoors across Minnesota," *Star Tribune*, July 23, 2020, at <https://www.startribune.com/walz-mandates-masks-indoors-across-state/571861471/>.
- 18** State of Minnesota, Executive Office of the Governor [Tim Walz]. Emergency executive order 20-99: Implementing a Four Week Dial Back on Certain Activities to Slow the Spread of COVID-19. 18 November 2020. https://mn.gov/governor/assets/EO%2020-99%20Final%20%28003%29_tcm1055-454294.pdf.

- 19** MPR News Staff, “May 28 update on COVID-19 in MN: New cases ebbing; statewide COVID curbs ending,” *MPR News*, May 28, 2021 at <https://www.mprnews.org/story/2021/05/28/latest-on-covid19-in-mn>.
- 20** When examining quarterly data series, we will take the pre-pandemic peak as being the fourth quarter of 2019, the quarter in which GDP for the United States peaked. Where a series is monthly, we will use February 2020 as the peak, the month when Total Nonfarm employment peaked in the United States.
- 21** Minnesota Department of Employment and Economic Development website, “Unemployment Insurance Statistics,” at <https://mn.gov/deed/data/current-econ-highlights/ui-statistics.jsp>.
- 22** FRED Economic Data, “Unemployment Rate in Minnesota” Bureau of Labor Statistics, Accessed September 1, 2022, <https://fred.stlouisfed.org/series/MNUR>.
- 23** U.S. Department of Commerce, Bureau of Economic Analysis website, “Regional Economic Accounts: Regional Definitions,” at <https://apps.bea.gov/regional/definitions/>.
- 24** Id.
- 25** FRED Economic Data, “Unemployment Rate” Bureau of Labor Statistics, Accessed September 1, 2022, <https://fred.stlouisfed.org/series/UNRATE>.
- 26** FRED Economic Data, “All Employees, Total Nonfarm” Bureau of Labor Statistics, Accessed September 1, 2022, <https://fred.stlouisfed.org/series/PAYEMS>.
- 27** U.S. Department of Commerce, Bureau of Economic Analysis website, “GDP by State,” at <https://www.bea.gov/data/gdp/gdp-state>.
- 28** Thomas Hale, Noam Angrist, Rafael Goldszmidt, Beatriz Kira, Anna Petherick, Toby Phillips, Samuel Webster, Emily Cameron-Blake, Laura Hallas, Saptarshi Majumdar, and Helen Tatlow. (2021). “A global panel database of pandemic policies (Oxford COVID-19 Government Response Tracker).” *Nature Human Behaviour*. <https://doi.org/10.1038/s41562-021-01079-8>. Blavatnik School of Government, University of Oxford, “Oxford COVID-19 Government Response Tracker,” <https://www.bsg.ox.ac.uk/research/research-projects/covid-19-government-response-tracker>.
- 29** John Phelan, “Minnesotans say they support the lockdown. Their actions suggest otherwise...,” Center of the American Experiment, May 26, 2020, <https://www.americanexperiment.org/minnesotans-say-they-support-the-lockdown-their-actions-suggest-otherwise/>.
- 30** John Phelan, “New research suggests 10 times more Minnesotans might have been infected with COVID-19 than we know of. Here’s why that’s good news,” Center of the American Experiment, July 23, 2020, <https://www.americanexperiment.org/new-research-suggests-10-times-more-minnesotans-might-have-been-infected-with-covid-19-than-we-know-of-heres-why-thats-good-news/>.
- 31** The ‘positivity rate’ accounts for this, but that was not a number very widely reported so is unlikely to have driven much of the behavioral response to COVID-19.
- 32** U.S. Centers for Disease Control and Prevention website, “COVID Data Tracker,” at <https://covid.cdc.gov/covid-data-tracker/#datatracker-home>.
- 33** Jared Walczak and Janelle Cammenga, *2021 State Business Tax Climate Index* (Tax Foundation, October 2020: available at <https://taxfoundation.org/2021-state-business-tax-climate-index/>).
- 34** U.S. Department of Commerce, Bureau of Economic Analysis website, “Employment by State,” at <https://www.bea.gov/data/employment/employment-by-state>.
- 35** This is a pooled estimator with fixed state effects and random time effects run on EViews.
- 36** A literature review and meta-analysis of the research into the effects of lockdowns on COVID-19 mortality found that: “lockdowns in Europe and the United States only reduced COVID-19 mortality by 0.2% on average. [shelter-in-place orders] were also ineffective, only reducing COVID-19 mortality by 2.9% on average.” See Jonas Herby, Lars Jonung, and Steve H. Hanke, “A literature review and meta-analysis of the effects of lockdowns on COVID-19 mortality,” Johns Hopkins Institute for Applied Economics, Global Health, and the Study of Business Enterprise Working Paper SAE./No.200/January 2022. <https://sites.krieger.jhu.edu/iae/files/2022/01/A-Literature-Review-and-Meta-Analysis-of-the-Effects-of-Lockdowns-on-COVID-19-Mortality.pdf>.





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