

**Executive Office of the President  
Office of Management and Budget**



**In consultation with the Council of Economic Advisers, the Department of the Treasury, and the Small Business Administration**



**The Economic Impact of Coronavirus Response Funds**

**Second Quarterly Report**

**November 13, 2020**

# THE ECONOMIC IMPACT OF CORONAVIRUS RESPONSE FUNDS SECOND QUARTERLY REPORT

## EXECUTIVE SUMMARY

As part of the accountability and transparency provisions included in the Coronavirus Aid, Relief, and Economic Security (CARES) Act, the Office of Management and Budget, in consultation with the Department of the Treasury, the Council of Economic Advisers, and the Small Business Administration, is charged with providing quarterly reports on the effects of certain Coronavirus response funds to the Congress and the public.<sup>1</sup> This report will provide evidence regarding the effects of these funds, including a limited discussion of those stemming from funds in Division A of the CARES Act, through mid-October that are critical to accurately assessing the impact of the extraordinary actions taken by the Administration and the Congress on employment, estimated economic growth, and other key economic indicators, including information about impacted industries.

It must be emphasized that evaluating the impact of Coronavirus response funds is fundamentally a difficult assessment due to the magnitude of the crisis. The results presented are therefore preliminary and current as of mid-October. At the time of writing, there has not yet been any direct reporting by recipients of response funds on job retention and creation. Direct reporting by recipients will be incorporated when it becomes available.

This report estimates the impact of the Coronavirus response funds using high-frequency data sources.<sup>2</sup> The analysis indicates that the response funds have had a substantial positive impact on the growth of real gross domestic product (GDP) and on employment in the early months since the passage of the CARES Act, and that these effects have persisted through the third quarter.

Among the key findings of the study are:

- The CARES Act and other response funds improved economic growth and reduced unemployment substantially. This conclusion is supported by the body of current evidence that strongly suggests that the combined effects of job retention and income support staved off much larger declines in output and employment.
- Measures designed to maintain employment, most notably the Paycheck Protection Program (PPP), are helping to stabilize labor markets and facilitate recovery by allowing firms to retain workers and rehire them as conditions improve. This directly contributed to the estimate that up to 75 percent of layoffs since February are likely to be temporary rather than permanent. While many temporary layoffs have been reversed during this dramatic labor market recovery, we

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<sup>1</sup> This report looks at the aggregate impact of all Coronavirus response funds, which is beyond the scope of “large covered funds” subject to section 15011 reporting.

<sup>2</sup> Please note, the estimates provided in this report are originally available as a CEA report titled, “Evaluating the Effects of the Economic Response to COVID-19.” See the report for a more extensive analysis of CARES Act programs. The report is available here: <https://www.whitehouse.gov/wp-content/uploads/2020/08/Evaluating-the-Effects-of-the-Economic-Response-to-COVID-19.pdf>.

estimate the fraction of unemployed workers on temporary leave in September was as high as 44 percent, which suggests there remains room for further rapid labor market improvement.

- Coupled with other relief provisions, the employee retention measures likely helped avert small business bankruptcies in April to September. Instead of a predicted spike of 213.1 percent in the third quarter, small business bankruptcies increased 63.6 percent year-over-year. Small business bankruptcies remain 38.4 percent below the 2009 peak.
- We further find that extraordinary efforts by the Administration to facilitate income replacement cushioned the shock to household incomes, as real disposable income increased 3.9 percent since February, largely due to expanded unemployment insurance (UI), Economic Impact Payments, and recovering non-transfer income. Forbearance measures further aided household balance sheets.
- The USDA's Coronavirus Food Assistance Program provided \$16 billion in direct payments to suffering farmers, which we find stabilized forecasts for net farm incomes.

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## Introduction

Before February 2020 the United States was in the midst of an economic boom. For the first time on record, job openings exceeded the number of unemployed workers. The unemployment rate had reached a 50-year low, and wage growth for the bottom tenth of the income distribution was growing faster from the first quarter of 2018 to the first quarter of 2020 than at any time since the Bureau of Labor Statistics (BLS) began reporting those data. In fact, wage growth for the bottom tenth of the income distribution was growing faster than wages at the 50th, 75th and 90th percentiles.

The Trump Administration responded with unprecedented scale and speed to the public health and economic crisis, stopping a potential Depression in its tracks, increasing personal income, and causing an increase in jobs after only two months rather than accepting an overwhelming consensus of continued significant losses. Within a week of the first reported Coronavirus Disease 2019 (COVID-19) fatality, the Congress passed, and President Trump signed into law, the Coronavirus Preparedness and Response Supplemental Appropriations Act. Within four weeks, the Congress passed, and the President signed into law, three further pieces of legislation, including the CARES Act, which alone provided \$2.1 trillion in direct financial support to American businesses, households and individuals, medical establishments, and State and local governments. Concurrently, the Federal Reserve expanded its balance sheet by more than \$3 trillion to ensure sufficient liquidity in financial markets. As we discuss below, the Administration implemented the provisions of the CARES Act at record speed, accomplishing more in weeks than had been accomplished in months after the Great Recession.

Six months later, buoyed by the Administration's rapid implementation of Coronavirus response legislation, the American economic recovery continues to beat expectations. In March, the S&P 500 Index was facing its worst decline since the financial crisis and the median private sector forecaster was projecting unemployment to reach 19.0 percent in May, its highest level since the Great Depression and almost twice its peak in the aftermath of the 2008-2009 crisis. In May, real output was projected to contract by as much as 8 percent in 2020.<sup>3</sup> By September, the unemployment rate had fallen to 7.9 percent and the economy had regained 11.4 million jobs, a record-shattering achievement for five months of recovery, and more jobs than had been regained in five years of labor market recovery after the previous recession. By October, expectations for real output contractions in 2020 had eased to a maximum of 4.8 percent and the S&P 500 Index had notched new all-time highs.

As part of the accountability and transparency provisions included in the CARES Act, the Office of Management and Budget, in consultation with the Council of Economic Advisers (CEA), the Department of the Treasury (Treasury), and the Small Business Administration (SBA), is charged with providing to the Congress, and the public, quarterly reports on the effects of certain Coronavirus response funds, specifically "large covered funds."<sup>4</sup> Although Division A programs in the CARES Act are not "covered funds"

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<sup>3</sup> In May, the average of the most pessimistic quintile of forecasters from the Blue Chip Panel of professional forecasters predicted real GDP would fall 8.2 percent in 2020 and that the fourth quarter would average a 15.1 percent unemployment rate. The panel of professional forecasters is composed of top business economists that regularly produce macroeconomic forecasts.

<sup>4</sup> CARES Act § 15011.

required to be reported,<sup>5</sup> this report will provide estimates of the effects of certain Coronavirus response funds through mid-October, including a limited discussion of those falling in Division A of the CARES Act that are critical to accurately assessing the impact of the extraordinary actions taken by the Administration and the Congress on employment, estimated economic growth, and other key economic indicators, including information about impacted industries.

As we outlined in our first report, without direct evidence of what would have happened in the absence of the Coronavirus response funds, we cannot say with certainty the precise impact the funds had on the economy. Additionally, the difference between local responses and decisions by some states to maintain restrictions on some small businesses impacts the overall data for the Nation. Therefore, results presented in this paper should be regarded as preliminary and subject to substantial margins of error.

In this report, we find that the historic policy responses taken by the Administration to the adverse shock of COVID-19 mitigated what was on pace to be a macroeconomic contraction on par with the Great Depression. In particular, measures designed to maintain employment, most significantly the PPP, played an essential role in allowing firms to retain workers.

We also find that the Administration's efforts to ensure income replacement and cost mitigation helped to cushion the shock to household incomes and thereby facilitate a stabilization and recovery in consumer spending, which alone comprises 70 percent of the U.S. economy. We find that income replacement rates were highest at the lower end of the income distribution, indicating that relief was targeted toward households that were more vulnerable to an adverse income shock.

We begin by outlining the timeline of the COVID-19 shock and associated public health responses, noting that at the peak of shutdowns more than 90 percent of Americans were subject to shelter-in-place orders. Employing high-frequency economic data, as well as real-time forecasts, we also quantify the magnitude of the economic disruption and situate it within its historical context, with comparisons to past economic and financial crises. We then proceed, in the next section, to analyze the effects of the Coronavirus response funds on halting the deterioration in the outlook for output, unemployment and financial markets. Two more sections go on to describe how the Coronavirus response funds worked to attenuate the negative effects of the pandemic on small businesses and households.

This report is the second in a series that the Office of Management and Budget will produce, in consultation with CEA, Treasury, and SBA, on the effect of Coronavirus response funds. Future reports will incorporate new analyses that become feasible with more macroeconomic indicators and recipient-reported jobs data.

## Evidence of the Effect on the Macroeconomy

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<sup>5</sup> The statutory text of the CARES Act includes only Division B within its definition of "covered funds," and mandates reporting only on "large" "covered funds." See CARES Act, §§ 3, 15010(a)(6)(A), 15011. Division A programs are not "covered funds." For example, the Paycheck Protection Program (PPP), Treasury's Economic Impact Payments and expansions to Unemployment Insurance are Division A programs, and therefore, not "covered funds."

On January 7, Chinese researchers announced the discovery of a new virus, Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), which causes the disease COVID-19, in the travel hub city of Wuhan.<sup>6</sup> On January 21, the first case of a person contracting the new COVID-19 virus after traveling from Wuhan was reported in the United States.<sup>7</sup> By late-February, the Centers for Disease Control and Prevention (CDC) had confirmed the first possible instance of community transmission in the United States.<sup>8</sup>

The Trump Administration responded by promptly putting in place non-pharmaceutical intervention policies to contain the virus.<sup>9</sup> Travel restrictions on China were imposed on January 31, with the restrictions subsequently expanded to 26 countries in Europe and several other countries by mid-March.<sup>10</sup> On March 13, President Trump declared COVID-19 a national emergency.<sup>11</sup> The adoption of a host of social distancing measures, which included school closures, bans on group gatherings, and closures of restaurants, became prevalent across States shortly thereafter. By March 23, State-wide school closures and restrictions on bars and restaurants had affected over 90 percent of the U.S. population (Figure 1). By March 30, 30 States had issued stay-at-home orders, and an additional 13 States had orders in parts of the State. By early April, over 90 percent of the U.S. population lived in a State that had issued a stay-at-home order.<sup>12</sup> While many shelter orders have been lifted, limits on bars and restaurants and school closures are still in effect across large parts of the country.

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<sup>6</sup> Chinese researchers isolated and confirmed a novel Coronavirus after identifying a cluster of acute respiratory illnesses in Wuhan on December 31, 2019 (Patel and Jernigan 2020).

<sup>7</sup> The CDC announced the first case in the United States when a traveler sought treatment after returning from Wuhan to Washington State a few days earlier. <https://www.cdc.gov/media/releases/2020/p0121-novel-coronavirus-travel-case.html>

<sup>8</sup> The first case of COVID-19 with no prior travel to infected regions was confirmed by the CDC on February 26. <https://www.cdc.gov/media/releases/2020/s0226-Covid-19-spread.html>

<sup>9</sup> The CDC defines non-pharmaceutical interventions as actions, apart from vaccination and taking medicine that people and communities can take to slow the spread of illnesses like the COVID-19 pandemic.

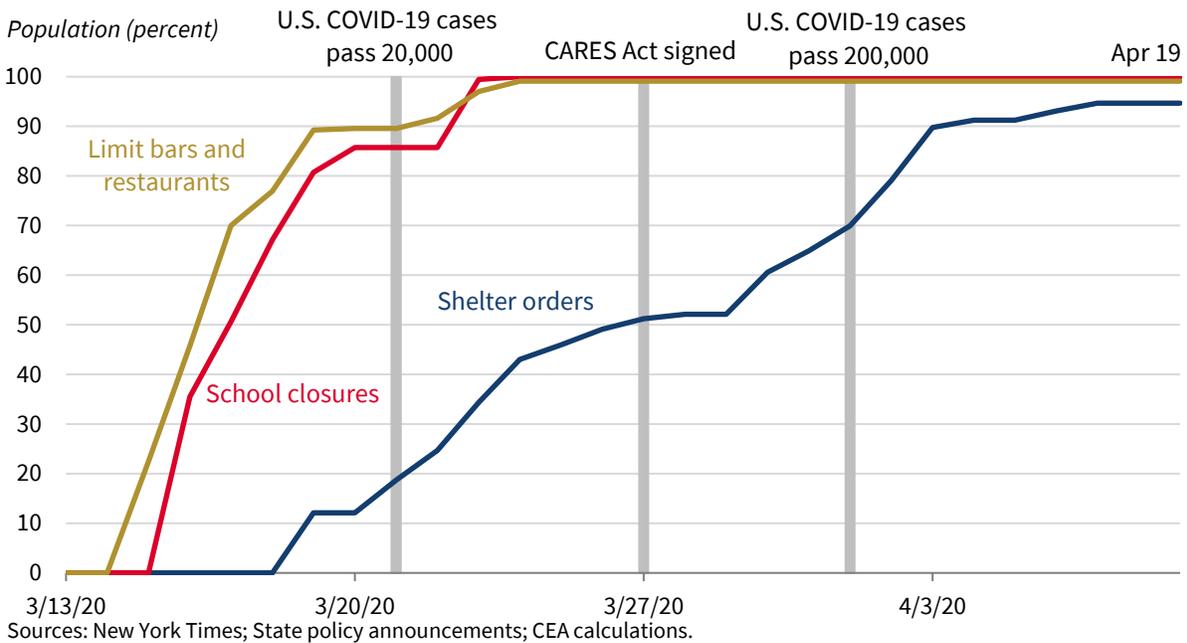
<sup>10</sup> Proclamation on suspending non-U.S. citizen travelers from China: <https://www.whitehouse.gov/presidential-actions/proclamation-suspension-entry-immigrants-nonimmigrants-persons-pose-risk-transmitting-2019-novel-coronavirus/>

Expansion of travel ban to the Schengen Area: <https://www.whitehouse.gov/presidential-actions/proclamation-suspension-entry-immigrants-nonimmigrants-certain-additional-persons-pose-risk-transmitting-2019-novel-coronavirus/>

<sup>11</sup> COVID-19 declared a national emergency: <https://www.whitehouse.gov/presidential-actions/proclamation-declaring-national-emergency-concerning-novel-coronavirus-disease-covid-19-outbreak/>

<sup>12</sup> Following the Administration's efforts to inform the American public, States began introducing restrictive mandates and regulations dictating protective behavior. CEA found that 67 percent to 100 percent of the observed total increases in a variety of protective behaviors appear to be driven by the American people's voluntary decisions and the Administration's efforts to encourage these voluntary decisions, and only 33 percent accounted for by restrictive State mandates.

**Figure 1. Percent of U.S. Population Under Statewide Restrictions, 2020**



Studies on the economic impact of past pandemics have indicated that there are three main channels through which pandemics affect economic activity<sup>13</sup>: (1) increased mortality, (2) illness and absenteeism, and (3) avoidance behavior to reduce infection. These shocks reduce the size of the labor force, aggregate productivity and aggregate demand. Consistent with those observations, the economy has experienced sudden, large, and simultaneous shocks to both supply and demand since the COVID-19 outbreak in the United States. On the supply side, many businesses were shuttered by social distancing measures that were put in place or voluntarily adopted by businesses to stop the spread of the virus and “flatten the curve.”<sup>14</sup> Those that remained open faced supply disruptions that prevented them from operating normally. On the demand side, many consumers faced stay-at-home orders or voluntarily limited their economic activity to reduce the risk of contracting the disease.<sup>15</sup> Consumers also changed the composition of their demand; for example, they replaced restaurant meals with home-cooked meals and increased their demand for cleaning supplies.

High-frequency indicators that proxy for demand across various economic activities show the downturn began in early March, in some cases before statewide social distancing measures were implemented, and reached its trough at the end of April. Daily credit card spending started plunging in mid-March, bottomed out at a -30 percent year-over-year growth rate at the end of March, and has since recovered to slightly

<sup>13</sup> Jonas (2013); Kilbourne (2006); Burns (2006); Verikios (2011); Sidorenko and McKibbin (2006); CEA (2019); McKibbin (2009).

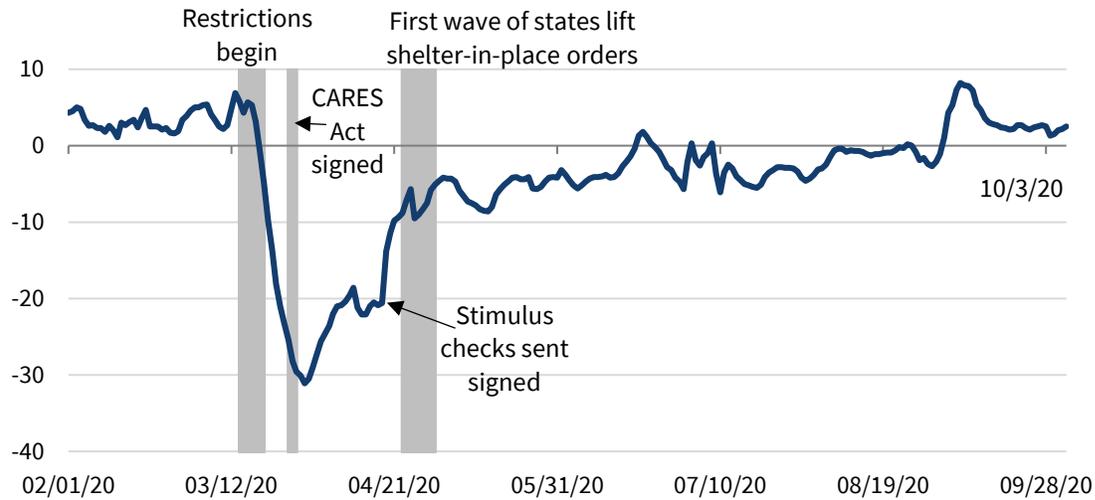
<sup>14</sup> For example, on March 11 (before President Trump’s announcement of COVID-19 as a national emergency), the NBA had already suspended games indefinitely. The following day, the MLB delayed the start of their season, NHL suspended games, and March Madness was cancelled.

<sup>15</sup> Baqaee and Farhi (2020) model the distinct shocks to supply and demand and study how the combination of supply and demand shocks explains the data. They argue that without the negative shock to aggregate demand, the United States could have experienced stagflation, or a combination of rising unemployment and rising prices. Instead, the negative shock to aggregate demand has limited inflation.

above zero percent growth in October (see Figure 2). Seated diners (Figure 3) across all States had already dropped over 20 percent compared with the same time a year before when restaurants were limited and shelter-in-place orders extended, and had begun to recover in late April. As of October, seated diners have recovered to 40 percent below 2019 levels nationwide. Similarly, weekly hotel occupancy had dropped 56 percent year-over-year in the week these measures began, and has improved to a 30 percent year-over-year decline in early October (see Figure 4).

**Figure 2. Retail Spending, 7-Day Average, 2020**

*Year-over-year change (percent)*

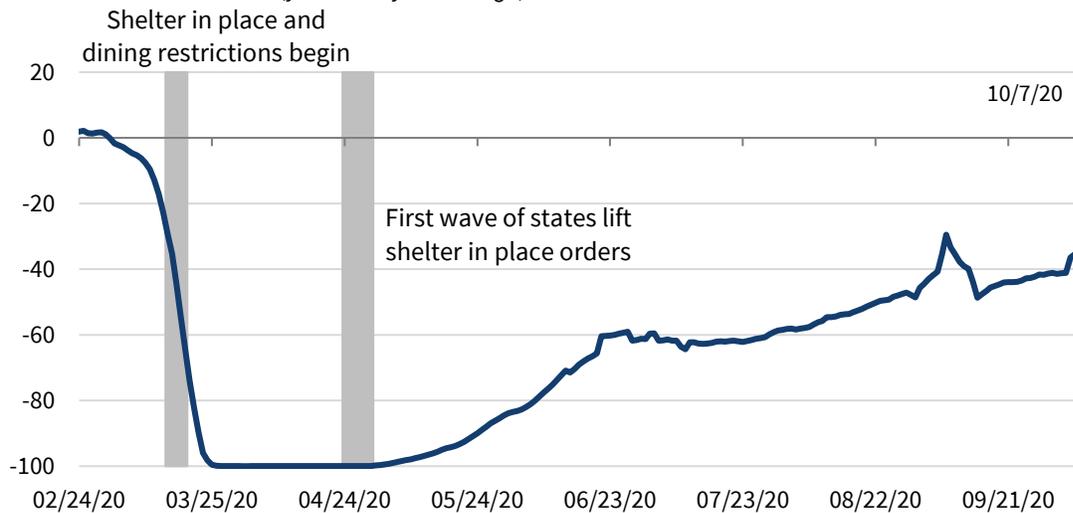


Source: Proprietary spending data.

Note: "Restrictions" refer to shelter-in-place and dining restrictions. The CARES Act was signed into law on 3/27.

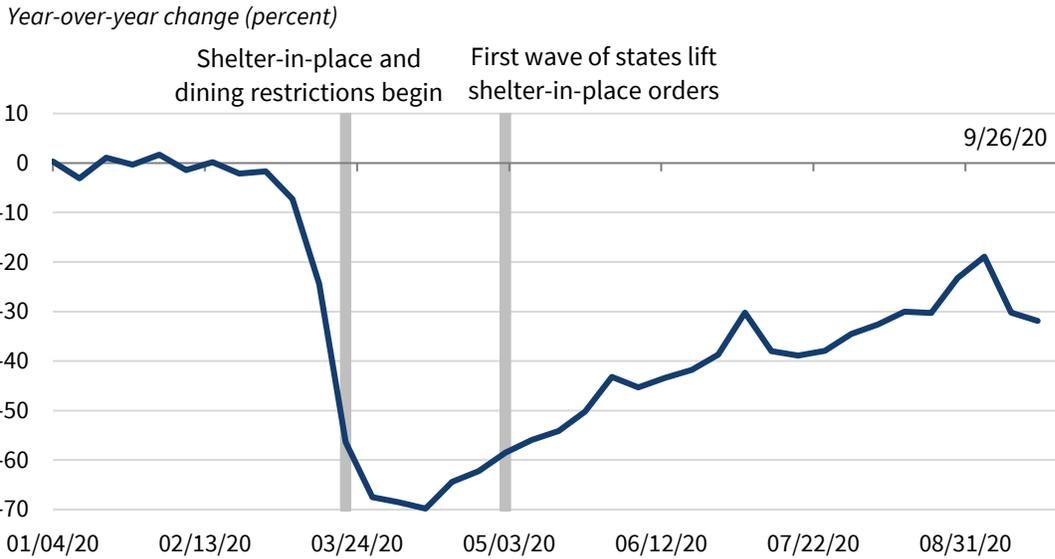
**Figure 3. OpenTable Restaurant Seated Diners in the United States, 7-Day Average, 2020**

*Restaurant Seated Diners (year-over-year change)*



Sources: OpenTable; New York Times; CEA calculations.

**Figure 4. Weekly U.S. Hotel Occupancy Rate, 2020**



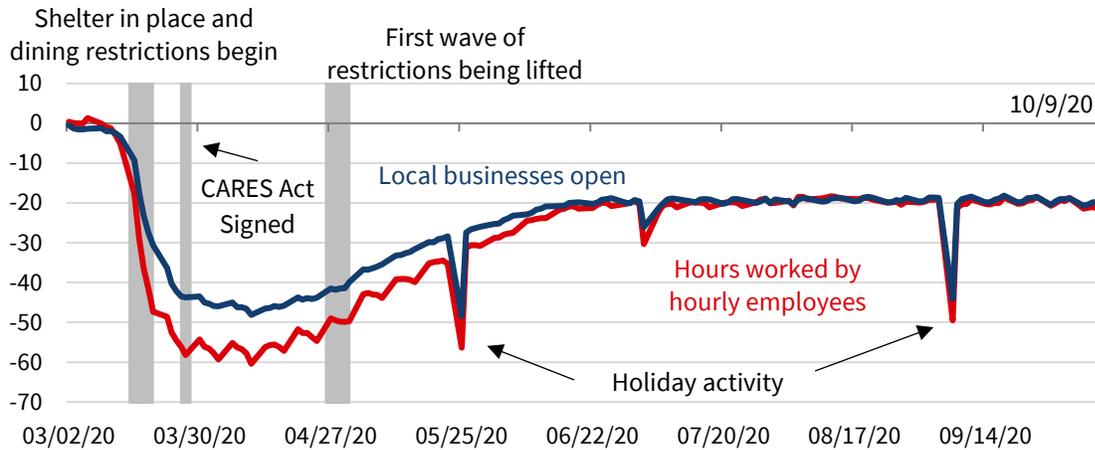
Sources: STR; CEA calculations.

Supply indicators—the number of small businesses open, number of hourly employees working, and number of hours worked—also saw the steepest year-over-year contractions in March and April. Figure 5 illustrates these indicators compared to a January pre-COVID-19 baseline, as reported by Homebase.<sup>16</sup> After shelter-in-place orders became widespread in mid-March, the number of employees working fell from about 15 percent below normal conditions to about 55-60 percent below normal conditions. As States begin to lift their shelter-in place orders, hourly employees are beginning to go back to work. As of October 9, the number of employees working at small businesses using Homebase is approximately 20 to 25 percent below normal conditions.

<sup>16</sup> Homebase is a company that provides software to help small business owners manage employee timesheets. Since the start of the pandemic, Homebase has maintained a database of US small business employment using data from more than 60,000 businesses that use their software. The data covers more than 1 million employees that were active in the United States in January 2020. Most Homebase customers are businesses that are individually owned or operator managed in restaurant, food & beverage, retail and services.

## Figure 5. Percent Change in Small Businesses Open and Hourly Employees Working, 2020

Percent change (relative to January base)



Source: Homebase.

Note: All the rates compare that day vs. the median for the day of the week for the period Jan. 4, 2020 - Jan. 31, 2020. The number of hourly employees working traces hours worked by hourly employees.

As the indicators discussed above show, the restrictions on mobility and the shift towards social distancing played a major role in defining the state of economic activity. As restrictions have eased, and the move towards reopening has begun, employees are returning to work, businesses that were the hardest hit, such as restaurants, have started to take customers again, and people are starting to travel, stay in hotels, and spend again.

### Comparison to Prior Shocks

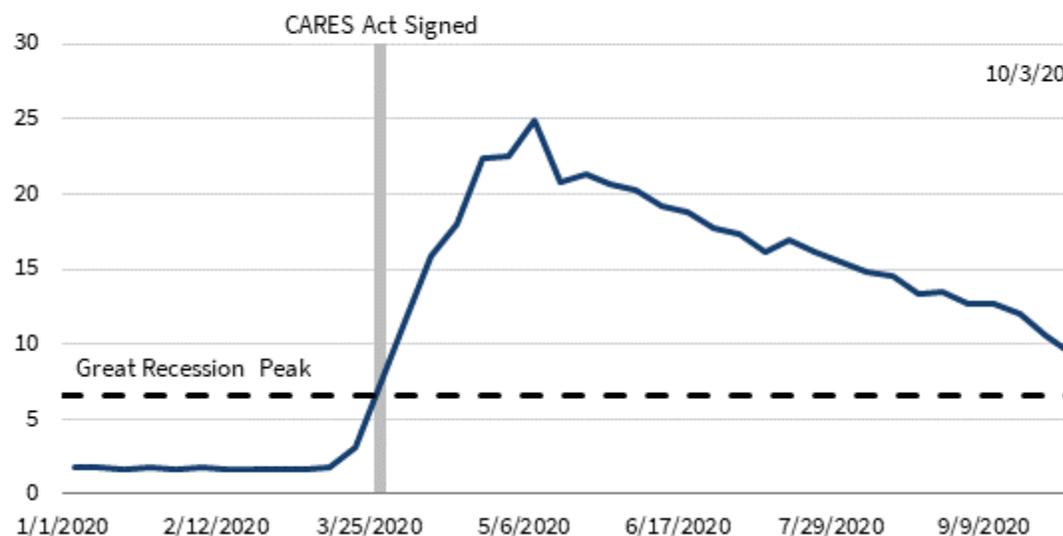
While the long-term effects of COVID-19 on the economy are uncertain and depend on how the virus progresses, the initial negative shock was unprecedented. Due to their short reporting lag, initial claims for unemployment insurance (UI) provide timely information on how the COVID-19 pandemic and containment measures are affecting the labor market. In March, job losses occurred at a level not seen since the Great Depression, with weekly UI claims spiking from 282,000 the week ending March 14 to 6.9 million two weeks later. This rapid peak in UI claims dwarfs the Great Recession's peak. However, UI claims during the Great Recession rose much more gradually, taking more than a year after the recession began to peak and several years after to return to pre-crisis levels. During the pandemic, the total number of individuals receiving regular UI benefits peaking at 24.9 million on May 9, representing over 16 percent of the 155 million non-self-employed civilian labor force reported in February 2020, and has since fallen below 10 million (Figure 6). These unemployment numbers do not include individuals receiving assistance through Pandemic Unemployment Assistance (PUA) in the CARES Act.<sup>17</sup> Although the unemployment rate reached 14.7 percent in April, the highest rate since official data were first collected in 1948, the

<sup>17</sup> The Department of Labor has recognized reporting issues with the PUA program, which has also impacted the accuracy of regular UI initial claims data. We note here that recent data on layoffs in the Job Openings and Labor Turnover Survey (JOLTS) have now moved lower than pre-pandemic levels. Also, the 12.6 million unemployed workers in the September Employment Report from the BLS is in line with the measured level of insured unemployment in UI claims data from mid-September.

unemployment rate declined to 13.3 percent in May despite expectations of an increase. Since May, the unemployment rate has declined in every month, falling to 7.9 percent in September. In particular, we estimate that up to 75 percent of the increase in unemployment from February to August was likely due to temporary rather than permanent layoffs after incorporating workers who were counted as employed but not at work—indicating they may be on temporary layoff—and adding in the excess number of workers who are not in the labor force but want a job. As of September, we estimate that up to 44 percent of remaining unemployed workers are still on temporary layoff. Notably, there were just 4.5 million workers in September who lost their job and are not on temporary layoff, far less than the peak of 8.3 million workers in the same category following the Great Recession.

### Figure 6. Insured Unemployment by Week, 2020

*Insured unemployment, regular programs (millions)*



Source: Department of Labor; CEA calculations.

Data on total economic output also reflect the enormous negative shock the COVID-19 pandemic and containment measures had on the economy. Second quarter GDP declined 31.4 percent (annualized rate), which followed the first quarter fall in GDP of 5.0 percent (annualized rate). However, a sharp rebound occurred in the third quarter, as the economy grew at an annual rate of 33.1 percent.

Still, the COVID-19 pandemic and containment measures have dealt the economy a significant blow. The OECD estimates that the COVID-19 pandemic and containment measures will decrease U.S. real GDP by 3.8 percent in 2020. This forecast is more optimistic than those provided by the CBO, the IMF, and the Blue Chip survey of the private sector (Table 1). All forecasts now expect the initial effect to be somewhere between the 8.6 percent decline in GDP at the onset of the Great Depression in 1930 and the more modest 0.1 percent decline experienced in 2008 at the onset of the Great Recession. Some of these forecasts do not incorporate any further policy stimulus through the course of the year, which may alter their predictions.

Unlike during the Great Depression, however, GDP is presently projected to rebound the following year, with the OECD projecting 4.0 percent growth in 2021. This level of rebound would imply that GDP would return to pre-COVID-19 levels by the end of 2021. The estimates from the private sector (3.9 percent), the

IMF (3.9 percent), and the CBO (4.8 percent) are in line with the OECD projection, but each predicts a sharper 2020 decline. As a result, the level of GDP in 2021 would fall below pre-COVID-19 levels. Most forecasters do not yet provide predictions of GDP growth in 2022. However, based on the initial decline and rebound predicted by CBO and Blue Chip, an annualized increase of at least 0.9 percent would be necessary to return GDP to pre-COVID-19 levels by 2022. As we discuss below, the economic recovery to date has surpassed almost all expectations, and there is scope for it to continue to do so.

**Table 1. GDP Growth Impacts of Previous Shocks, 1919–2021**

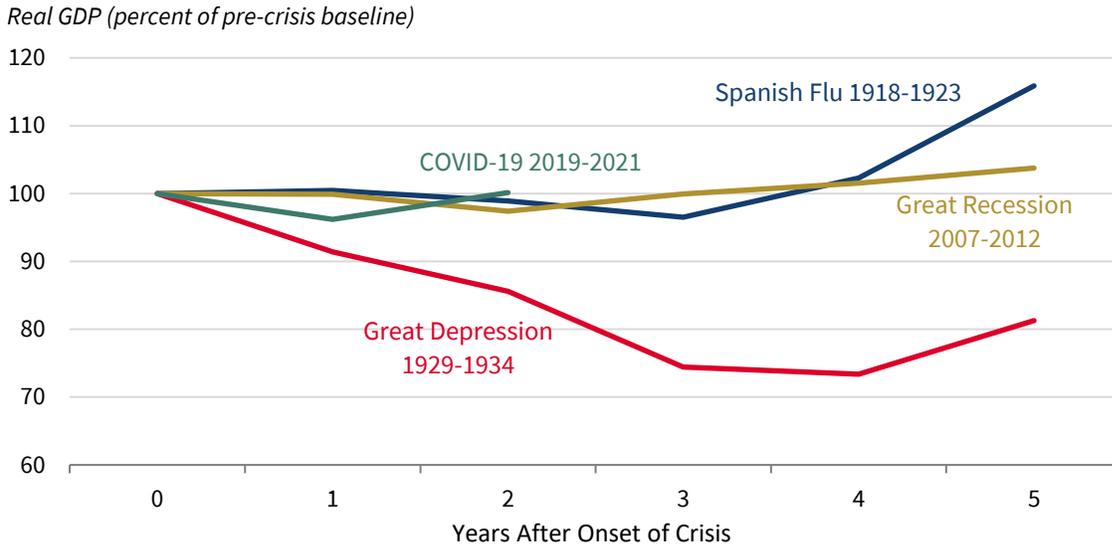
<i>Event</i>	<i>First year considered</i>	<i>Real GDP growth</i>	
		<i>Year 1</i>	<i>Year 2</i>
Spanish Flu	1919	0.4%	-1.5%
Great Depression	1930	-8.6%	-6.4%
Great Recession	2008	-0.1%	-2.5%
COVID-19 (CBO forecast)	2020	-5.1%	4.8%
COVID-19 (Blue Chip consensus forecast)	2020	-4.0%	3.9%
COVID-19 (OECD)	2020	-3.8%	4.0%
COVID-19 (IMF)	2020	-3.9%	3.9%

Sources: FRED; OECD; IMF; HISTSTAT; CBO; Blue Chip; CEA calculations.

The recession induced by COVID-19 is fundamentally different from the Great Recession and the Great Depression because it had a non-economic cause. The closest epidemiological analogue, the 1918 Spanish Flu, had a much smaller effect on GDP, with growth rates of 0.4 percent and -1.5 percent in 1919 and 1920, respectively (Figure 7). Further comparisons to the Spanish Flu are complicated by the the context of World War I and the changes that the U.S. economy has undergone in the past century. For example, the increase in women’s labor force participation has increased the proportion of dual-earner households, which exacerbates the economic impact of the decision to close schools. The composition of jobs in the economy has also shifted dramatically, away from manufacturing and towards service-sector jobs. This shift has meant that the disruption to non-essential businesses has had a much larger negative impact on the economy than the closing of retail during the Spanish Flu.

In terms of the public health response, the non-pharmaceutical interventions in 1918 and 1919 were in many ways similar to those of today. Action was primarily taken at a local rather than a national level, with cities as the primary actors. In an analysis of 43 cities’ responses, Markel et al. (2007) find that all cities adopted some form of intervention, including 79 percent that implemented concurrent school closures and bans on public gatherings. That combination of policies was in place for between one and ten weeks with a median duration of four weeks, which is shorter on average than the duration of similar policies put in place for COVID-19. Such intervention was associated with reductions in excess deaths, with cities that implemented policies earlier and kept them in place longer experiencing fewer deaths. Moreover, because the pattern of mortality rates by age for the Spanish Flu showed more deaths among school-aged children than current data suggest is true for COVID-19, the public health benefits of school closures may have been greater.

## Figure 7. GDP Recovery from Previous Crises



Source: FRED; HISTSTAT; OECD; CEA calculations.

Note: COVID-19 projection is based on the OECD forecast.

The preceding sections show that the immediate U.S. economic losses of COVID-19 were concentrated in the second quarter 2020, when shutdowns were widely practiced in the United States. One way that short-term damage could stretch into the longer term is if what began as a liquidity crisis becomes a solvency crisis for many U.S. businesses, resulting in waves of firm bankruptcies, a stubbornly higher level of unemployment, and, ultimately, a lower level of production. The timely Federal response to provide liquidity to households and firms through the prompt passage and implementation of the CARES Act was designed to address this risk, and evidence presented in this section suggests that it has mitigated the damage to GDP and ultimately the livelihoods of Americans.

It should be noted that, relative to the Great Recession, the COVID-19 economic downturn was more rapid, and the Trump Administration has responded with greater speed and coordination and with an even more expansive suite of policies. The total cost of the response was \$2.4 trillion compared to \$940 billion during the Great Recession. During the Great Recession, fiscal stimulus rolled out in phases over the course of a year: the Economic Stimulus Act in February 2008, the Emergency Economic Stabilization Act in October 2008, and the American Reinvestment and Recovery Act (ARRA) in February 2009. By contrast, the Federal Government during COVID-19 passed the Families First Coronavirus Response Act and the CARES Act both within March 2020. Moreover, the CARES Act is slated to deliver roughly \$2.1 trillion in stimulus compared to a bit over \$800 billion by the ARRA.

### Impact on GDP

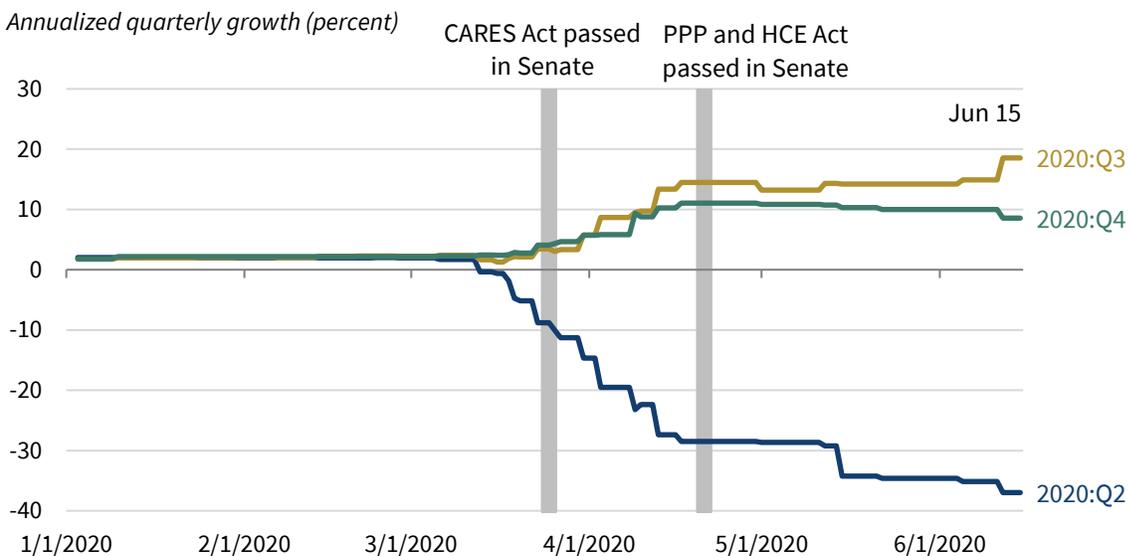
A growing economics literature is studying the impact of the COVID-19 pandemic and containment measures on the U.S. economy. Some of this literature seeks to project the impact on 2020 GDP, in light of social distancing and other mitigation measures. Economic models include predictions for the impact on end-of-year GDP that range broadly depending on modeling assumptions. See, for example, Alvarez, Argente and Lippi (2020); Baker, Bloom, Davis and Terry (2020); and Eichenbaum, Rebelo, and Trabandt

(2020). Eichenbaum, Rebelo, and Trabandt (2020) develop a model that predicts GDP losses of anywhere from 7 percent to 22 percent that increase with the severity of containment measures.

While the aforementioned academic studies did not incorporate the impact of the CARES Act in their projections, market forecasts do and are frequently revised to reflect changes in policies. As of mid-October, the consensus market forecast is more optimistic than the projections in those academic studies. The Wall Street Journal median consensus forecast (out of a sample of 60 economists) expects GDP to fall 3.6 percent for 2020 (as of October), and the Blue Chip Consensus forecast (as of October) projects -4.0 percent growth for 2020.

Figure 8 shows the weekly evolution of these market forecasts around the passage of Coronavirus relief legislation. The outlook for 2020:Q2 deteriorated throughout the spring, and forecasts were continually revised down after mid-March as social distancing practices became prevalent and as analysts took into account new information provided by high-frequency economic indicators pointing to the steeper depth of the downturn. On the other hand, market analysts continued to revise the forecasts for 2020:Q3, 2020:Q4 and 2021 upward, particularly after the passage of the CARES Act (Figures 8 and 9).

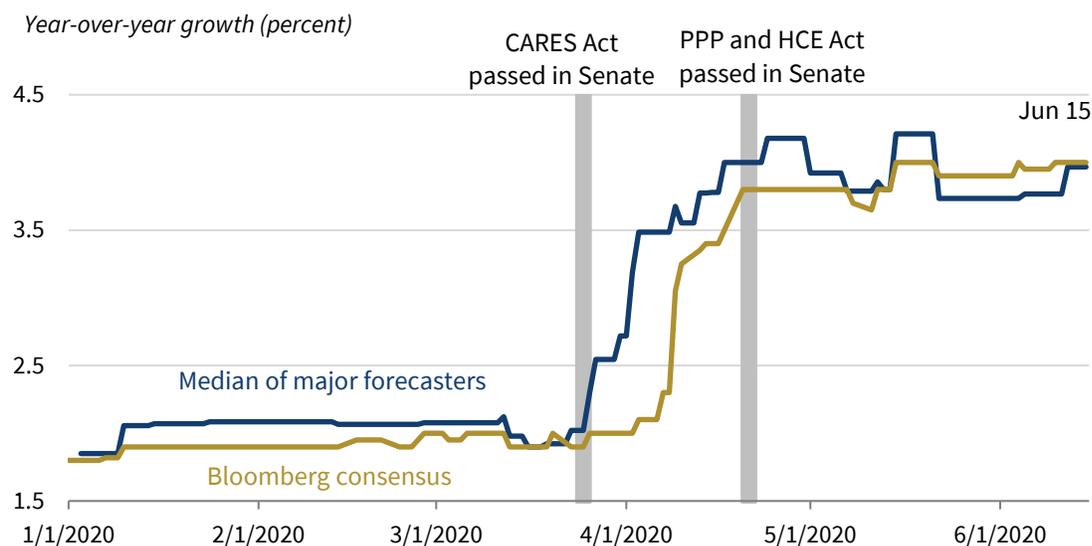
**Figure 8. Evolution of Median Forecasts for 2020 Quarterly GDP**



Source: Bloomberg.

Note: PPP and HCE Act = Paycheck Protection Program and Health Care Enhancement Act.

**Figure 9. Evolution of Forecasts for GDP in 2021**



Source: Bloomberg.

Note: PPP and HCE Act = Paycheck Protection Program and Health Care Enhancement Act.

Many have asked how much worse the GDP outlook would be in the absence of the CARES Act. The evolution of the GDP forecasts by market analysts are also consistent with the assertion that the CARES Act helped to raise the GDP outlook beyond the second quarter. In the weeks preceding the CARES Act vote, as analysts revised down the forecast for 2020:Q2, they also made only small upward revisions to 2020:Q3 and 2020:Q4, and marked down the growth rate for 2021 (Figures 8 and 9).<sup>18</sup> This suggests that analysts were generally pessimistic about the recovery even as they saw a steeper downturn in 2020:Q2. Once the CARES Act cleared the crucial Senate vote, market analysts began to sharply revise up GDP growth in 2020:Q3, 2020:Q4, and 2021. In the week after the passage of the bill, the median market forecast by leading economic forecasters for 2020:Q3 and 2020:Q4 GDP growth was revised up by 6.5 and 3.1 percentage points, respectively, compared with just before the passage of CARES Act. The projection for 2021 GDP growth was also revised up by 1.5 percentage points (from around 2.0 percent to 3.5 percent), corresponding to approximately \$300 billion in dollar terms. Though these upward revisions could in part be due to the rebound effect from continual downward revisions in 2020:Q2 GDP, we find a positive and significant effect of the CARES Act on revisions for 2020:Q4 and 2021 even after controlling for the rebound effect.<sup>19</sup>

There are some outside estimates of the economic impact of the Coronavirus response legislation, but we believe there remains too much economic uncertainty and too little understanding of the economic dynamics during the pandemic to support any current estimates. For example, the CBO produced its own estimate of the economic impact of pandemic-related legislation in September, estimating that second and third quarter GDP growth improved 11.6 and 13.1 percentage points, respectively, as a result of the

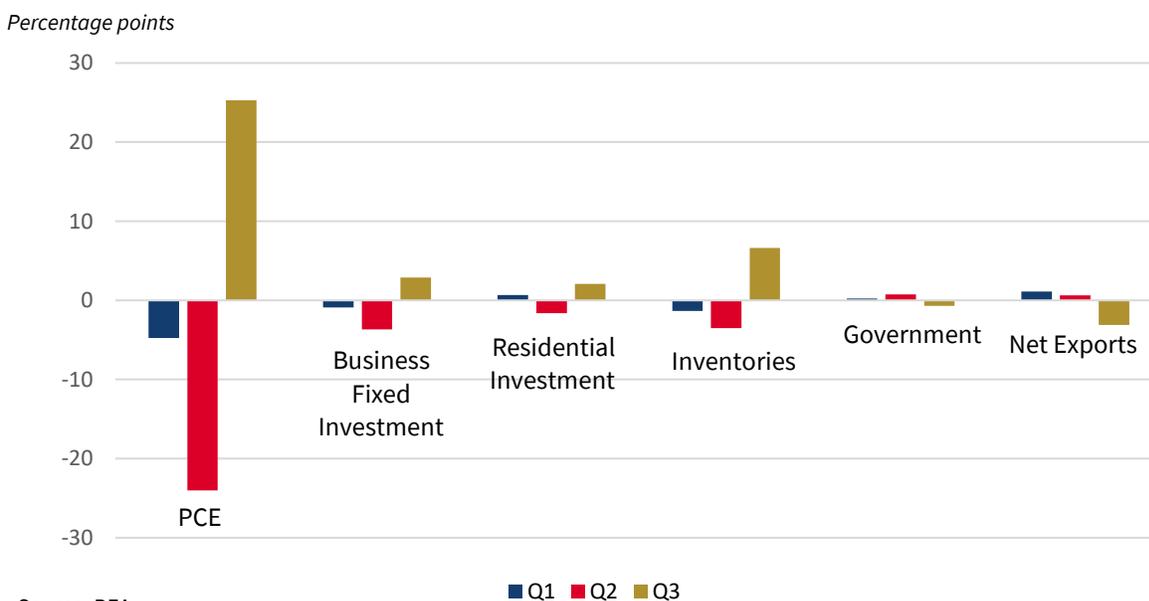
<sup>18</sup> The sample in our survey of private banks consists of forecasts reported by the research team of nine major banks: Barclays, Wells Fargo, Goldman Sachs, UBS, Deutsche Bank, IHS Markit, Bank of America, JP Morgan Chase, and Citigroup.

<sup>19</sup> The dependent variable of the regression is the weekly forecast revisions for the GDP growth rate horizon under consideration. The controls included concurrent revisions for the previous quarter, changing economic fundamentals as proxied by weekly credit card spending changes, and a dummy for the passage of the CARES Act.

legislation. With a cushioned economic decline, the subsequent recovery in the fourth quarter of 2020 is estimated to be 7.2 percentage points slower, and growth in 2021 is estimated to be 1.5 percentage points slower. However, the CBO analysis relies on the use of fiscal multipliers for different parts of the relief legislation. Estimates of the CBO multipliers largely rely on the existing economic literature, which likely does not apply to the current environment, and in some cases (such as for PPP) omit measuring large economic effects that would accrue from the programs, thus making these multipliers unreasonable.

A closer examination of the contributions to the percent change in real GDP through the pandemic shows that the shutdown during the second quarter had the largest impact on the largest component of real GDP, personal consumption expenditures (Figure 10). The impact of the Coronavirus response legislation can be seen in the rebound in personal consumption expenditures in the third quarter. American workers have utilized the Economic Impact Payments and expanded unemployment insurance to bring about a large third-quarter increase in retail spending as the labor market continues to recover. Durable goods purchases have increased dramatically after sharp declines in March and April, surpassing their level from February. Spending on non-durable goods have also recovered past February levels after a less severe drop. Spending on services, however, has yet to return to pre-pandemic levels, dragged down by lower spending on healthcare, transportation, recreation, and food and accommodation.

**Figure 10: Contributions to Percent Change in Real GDP**



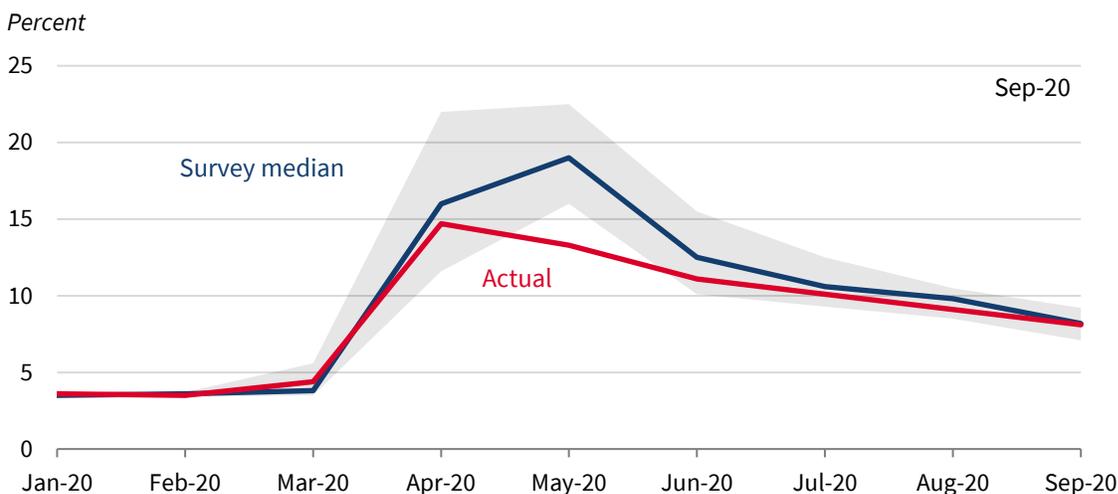
### Impact on Unemployment

As early signs of labor market turmoil became apparent in late March, forecasters began revising their expectations of unemployment upwards. As States continued to pursue lockdown measures, unemployment continued to rise as expected. After March’s jobs report showed evidence for a labor market collapse, forecasters quickly revised their expectations upwards to levels not seen since the Great Depression. After the unemployment rate rose to 14.7 percent in April, some economists were expecting unemployment rates to soar above 20 percent in May (Figure 11). The market consensus forecast for

May’s unemployment rate was 19.0 percent, with the most optimistic forecasters still projecting a 16.0 percent unemployment rate.

However, the unprecedented speed of the Administration’s implementation of relief efforts proved stronger than consensus expectations, and May’s unemployment rate unexpectedly declined to 13.3 percent as the economy reopened and businesses recalled workers.<sup>20</sup> This is consistent with the idea that the CARES Act helped workers stay connected to firms and helped those firms be in a position to hire workers back as lockdown measures continue to be lifted. In the first five months of recovery, 11.4 million jobs lost were regained, per the BLS’ Current Employment Statistics. This record-shattering pace of recovery has been the fastest since BLS began reporting employment data in 1939, beating the previous record from just after the Second World War. Moreover, in early May the Blue Chip Consensus Forecast for unemployment was 10.3 percent at year-end; by July, the recovery had already beat the year-end forecast, five months ahead of schedule. In September, the unemployment rate has fallen to just 7.9 percent.

**Figure 11. Consensus Market Forecast for the Unemployment Rate, 2020**



Source: Bloomberg.

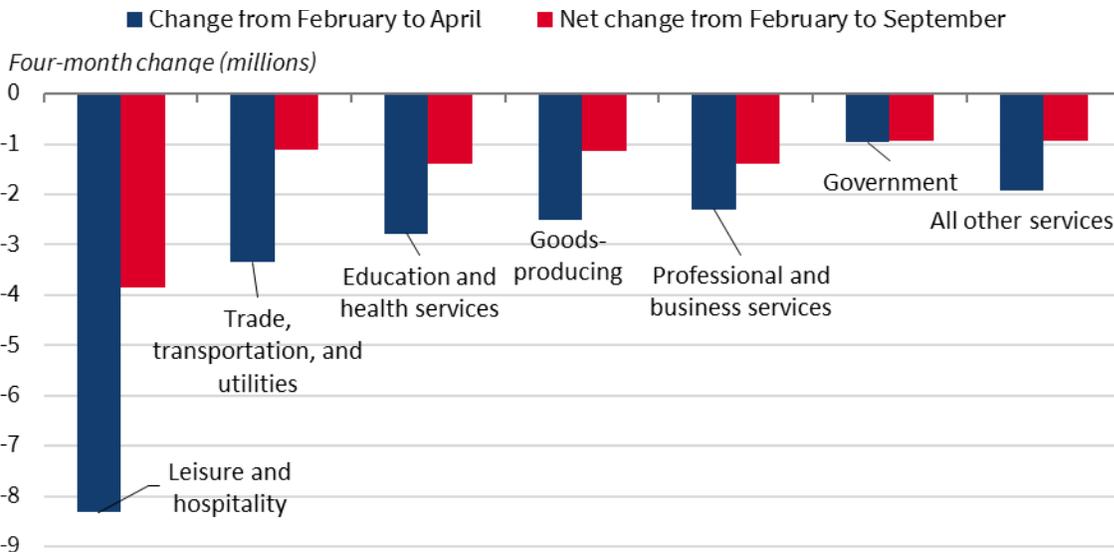
Note: Gray shading denotes the market forecast range.

The September employment report also highlights the recovery in jobs in all private industries. The recovery has been the largest in the industries most impacted by the pandemic. Over 8 million jobs in the leisure and hospitality industry were lost in March and April, and more than half have been recovered from May to September (Figure 12). The same is true for the over 3 million jobs lost in the trade, transportation and utilities industries. These sectors have been aided by the reopening of the economy, and the jobs remained available with the support provided by the CARES Act. In summary, the most recent employment downturn has so far been limited to two months of job losses versus approximately two years of job losses experienced during the Great Recession. This astounding accomplishment has only

<sup>20</sup> We believe the impact was actually even larger, when correcting for a misclassification of workers in the BLS reports. The decline from April to May would have been from 19.6 percent to 16.4 percent, a drop of 3.2 percentage points.

been made possible by the unprecedented actions taken by the Administration to implement critical relief efforts in record timing.

**Figure 12. Payroll Job Losses by Sector Since February 2020**



Sources: Bureau of Labor Statistics; CEA calculations.

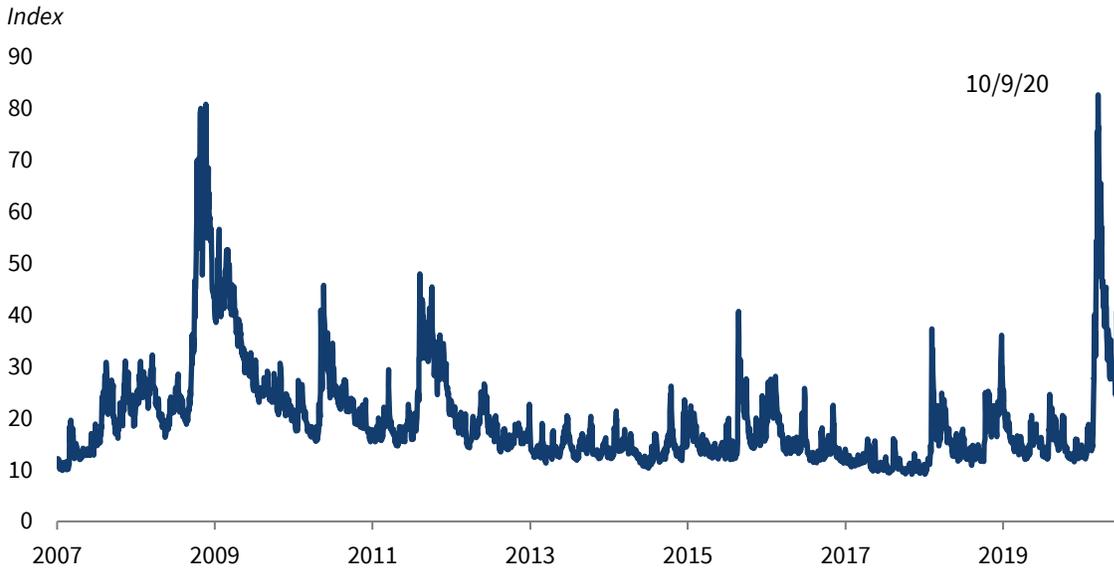
Note: All other services is the sum of the financial activities, information, and "other services" categories.

### Impact on the Financial Sector

A variety of indicators of financial distress increased significantly early in the COVID-19 epidemic period but have since receded. Preliminary findings indicate the monetary and public policy responses have mitigated the epidemic’s impact on financial markets.

The VIX, an index of expected stock market volatility derived from options prices, spiked from 27 in late February to a peak of 83 on March 16 (Figure 13). It has fallen since then back to pre-pandemic levels (as of the end of October, the VIX was 38).

**Figure 13. Market Volatility Index (VIX), 2007–20**



Source: Wall Street Journal.

Similarly, corporate bond spreads such as the spread between BBB bonds relative to Treasury notes show a similar pattern peaking around March 23 and then receding (Figure 14).

**Figure 14. BBB Corporate Bond and 10-Year Treasury Note Spread, 2006–20**



Source: Bloomberg.

The stock market itself, as measured by the S&P 500 index, fell from its February 19 peak of 3,386 to a March 20 low of 2,237 (-33.9 percent or 1,149 points), but by September 30 had recovered to 3,363 (a rebound of 1,126 points, or a recovery of nearly 98 percent of its earlier loss).

The trends in these indicators, and others, suggest that these programs have played an important role in easing market strain and ensuring access to liquidity for businesses, households, and communities.

Finally, the extraordinary Federal Reserve response to the COVID-19 pandemic, which has played a vital role in improving liquidity and restoring market function, was made possible by the speed with which the Administration approved and provided financial support for emergency lending facilities to several sectors of the economy. The Federal Reserve, with the approval and financial support of by the Department of the Treasury, quickly announced plans for the Commercial Paper Funding Facility (CPFF), Money Market Mutual Fund Liquidity Facility (MMLF), the Primary Market Corporate Credit Facility (PMCCF), the Secondary Market Corporate Credit Facility (SMCCF), the Term Asset-backed Securities Loan Facility (TALF), the Municipal Liquidity Facility (MLF), and the Main Street Lending Program (MSLP). These emergency lending facilities were established under section 13(3) of the Federal Reserve Act and include equity or credit protection provided by the Treasury Department to protect the Federal Reserve from losses. Treasury also authorized the creation of the Primary Dealer Credit Facility (PDCF) and Paycheck Protection Program Liquidity Facility (PPPLF). The CPFF, MMLF, and PDCF function as backstops for these critical short-term funding markets by providing liquidity for commercial paper issuers, market intermediaries, and buyers of money fund assets, reversing the fear-driven outflows that occurred in March. The PMCCF, SMCCF, TALF, PPPLF, MLF and MSLP function to support longer-term funding and credit markets, preventing otherwise-solvent borrowers from facing financing pressures because of a broader downturn in liquidity. In turn, these backstops are critical to businesses, and thereby underpin employment and the broader economy. Through these efforts, the Administration continues to support the flow of credit to American workers, businesses and municipalities.

## Evidence of the Effect on Businesses

In this section, we focus on provisions specifically aimed at businesses that improved access to financial resources and allowed businesses to weather the crisis. We explore how the availability of forgivable loans and grants has allowed small businesses to retain employment, re-open, and recover revenues. In a positive development, the small business optimism index compiled by the National Federation of Independent Business showed a 13.1 point improvement in September, relative to April. The combined index is a combination of several sub-indexes, of which most showed an improved outlook when it came to sales, capital investments, and hiring. Of the businesses surveyed in September, a net of about 23 percent more businesses were optimistic about creating jobs than not. This represents a 22 percentage point increase from April. Small businesses have begun to increase compensation and plan to continue to do so; a net 23 percent more surveyed firms reported increasing compensation for their employees than reported decreasing compensation for employees over the past three months, while 16 percent more firms planned to increase compensation over the next three months in September.

### Impact on Small Business Bankruptcies

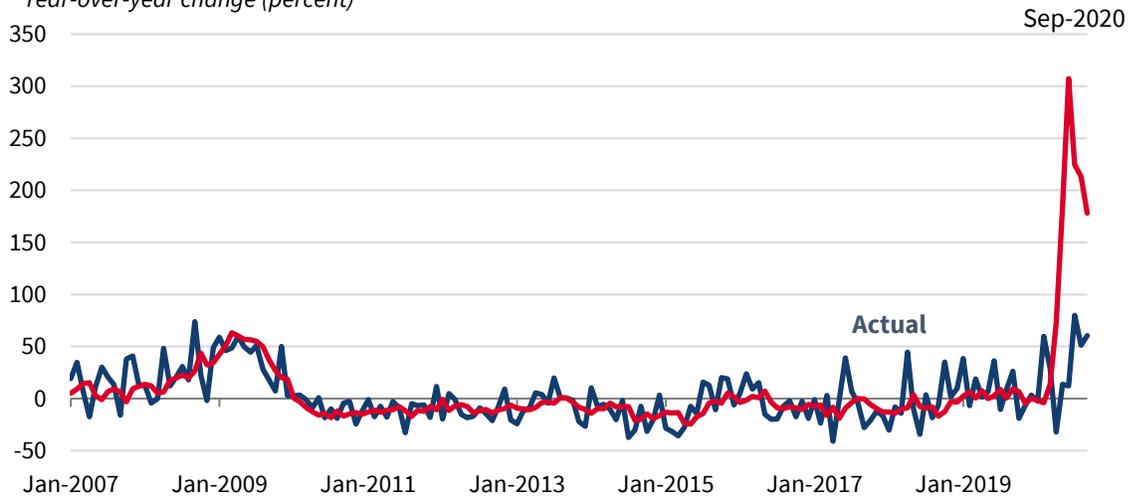
A concern in any crisis is the impact on business bankruptcies and failures, which can then lead to even higher levels of sustained unemployment. In this section, we attempt to model whether COVID-19 has led to high rates of small business failures, and whether the passage and prompt implementation of the CARES Act may have mitigated the impact of COVID-19 on insolvencies. Real-time forecasting of the small business bankruptcy rate during COVID-19 is complicated by a number of factors. First, some broad, more reliable measures of macroeconomic activity like GDP are reported infrequently and with a lag. Initial UI claims can potentially serve as a proxy for a macroeconomic shock, as they are the highest frequency labor market indicator.

However, issues of reverse causality arise; increasing unemployment could fuel bankruptcies as income and demand fall and businesses close and lay off workers, but layoffs also help businesses stay afloat. Moreover, historical relationships between unemployment and bankruptcies may not hold true during COVID-19 because of social distancing measures that delay filings, as well as a greater share of unemployed workers that are only on temporary furlough. The latter can be seen as a successful consequence of the swift passage and implementation of historically large fiscal relief through the CARES Act.

One way to forecast small business Chapter 11 bankruptcies is through a vector autoregression (VAR) estimate of UI claims with three-month lags from January 2006 to December 2019. An advantage of this approach is that it can determine the lag between the negative economic shock and its effect on bankruptcies. In the figure below, the gap between actual and predicted bankruptcies represents “averted bankruptcies.” Small business bankruptcies for the second quarter as a whole were predicted to increase by 154.9 percent, while actual filings decreased by 1.8 percent in the second quarter. The analysis predicts Chapter 11 small business filings would spike by 307.2 percent in June alone, but the actual change in June was 12.2 percent (Figure 15). In the third quarter, the change in year-over-year bankruptcies accelerated to 63.6 percent, but the increase was still well below the third-quarter prediction of 213.1 percent.

**Figure 15. Actual versus Predicted Chapter 11 Small Business Bankruptcy Filings, 2007-20**

*Year-over-year change (percent)*



Sources: Department of Justice; Department of Labor; CEA calculations.

Note: Predicted filings are based on VAR results of a 3 month lag using initial UI claims.

It is important to point out that this gap between predicted and actual bankruptcies could arise from a number of factors. First, the social distancing mechanisms may have affected filing rates, both for the court systems and debtors. If business owners are unable to connect with lawyers or face difficulties submitting electronic filings, this could lead to filing delays that would show up as higher filings later in the data. At the same time, courts' ability to take on cases might be affected by State restrictions.

The findings in this section suggest that the Administration's prompt implementation of the CARES Act will lead to improved prospects for the U.S. economy over the next year and a half compared with the pre-CARES Act trajectory. By providing a short-term financial bridge to American households and businesses, businesses and households were able to stay afloat longer than might have been expected, contributing toward a more resilient recovery.

## How Small Businesses Have Responded to the Coronavirus Response Legislation

### *Small Business Employment Recovery*

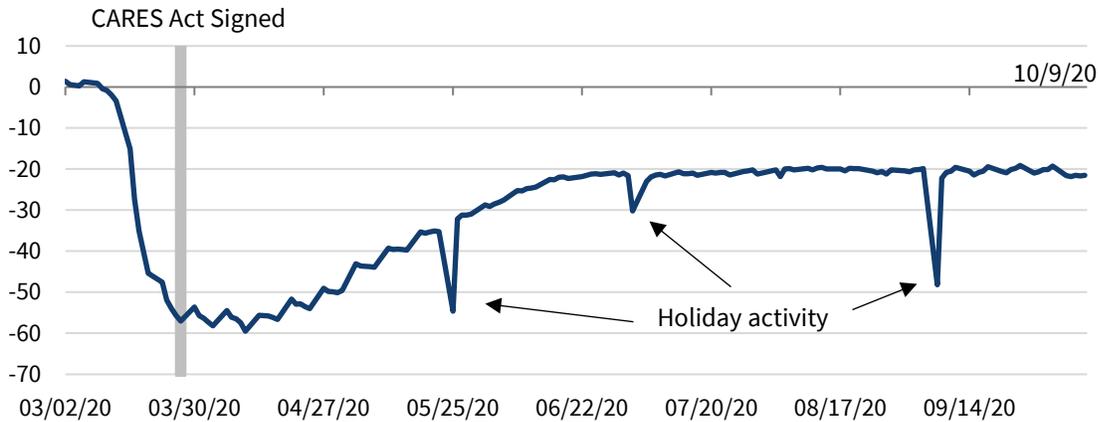
Small businesses may show other signs of distress, such as an inability to obtain loans, an increase in delinquencies, and a decline in employment and job openings. Several databases track conditions for small businesses nationwide. Here, we review data from Homebase and Opportunity Insights. The Homebase data and Opportunity Insights data indicate that many small businesses have reopened, with employees coming back to work.

Homebase is a company that provides software to help small business owners manage employee timesheets. Since the start of the pandemic, Homebase has maintained a database of U.S. small business employment using data from more than 60,000 businesses that use their software. The data covers more than 1 million employees that were active in the United States in January 2020. Most Homebase customers are businesses that are individually owned or operator managed in restaurant, food and beverage, retail, and services.

The Homebase data show the dramatic impact of the COVID-19 pandemic on small businesses. Figure 16 illustrates the daily change in the number of hourly employees working at small businesses using Homebase compared to a January baseline. After shelter-in-place orders became widespread in mid-March, the number of employees working fell to a level that is about 55-60 percent lower than normal conditions. As States raised their shelter-in-place orders, many hourly employees went back to work. As of mid-October, employees working at small businesses using Homebase are approximately 20 percent below normal conditions.

## Figure 16. Change in the Number of Small Business Hourly Employees Working, 2020

Percent change (relative to January base)



Source: Homebase.

Note: All the rates compare that day vs. the median for the day of the week for the period January 4, 2020 – January 31, 2020.

Much of this turnaround can be attributed to the innovative design and prompt implementation of the PPP by the Administration. Within only a week of the passage of the CARES Act, the PPP officially launched. As a result of Treasury and SBA’s public-private mobilization effort to distribute funds, the SBA processed more than 14 years’ worth of loans through a network of thousands of private lenders within 14 days, preventing a catastrophic wave of small business bankruptcies.<sup>21</sup> Through the closure of the PPP on August 8, SBA had approved more than 5.2 million PPP loans for a total of more than \$525 billion by nearly 5,500 lenders, helping to support an estimated 51 million jobs, which represents more than 80 percent of small business payrolls.

The vast majority of PPP loans—87.3 percent of them—were for under \$150,000. PPP Loans for under \$50,000 made up 68.6 percent of the PPP loans, demonstrating the accessibility of this program to even the smallest of small businesses. This is in spite of evidence by Neilson, Humphries and Ulyssea (2020) that small businesses were less aware of the PPP and less likely to apply than larger businesses.<sup>22</sup> Based on Census tract matching, we estimate that 27 percent of PPP funds went to businesses in low- and moderate-income (LMI) areas—a figure proportionate to the LMI share of the U.S. population, 28 percent. The PPP has provided funds to a wide variety of industries in all sectors of the economy, including construction (12.4 percent), manufacturing (10.3 percent), food and hospitality services (8.1 percent), health care (12.9 percent), and retail (7.7 percent), among many others. All of this demonstrates the broad diversity of PPP and its support for American workers and American small businesses across the country.

<sup>21</sup> For example, Bartik et al. (2020b) found that PPP loans led to a 14 to 30 percentage point increase in a business’s expected survival, with the largest impacts on survival for businesses with more employees.

<sup>22</sup> The authors also showed that, among businesses who applied for PPP loans, smaller businesses applied later, faced longer processing times, and were less likely to have their applications approved.

S&P U.S. Chief Economist Beth Ann Bovino estimates that PPP could have saved upwards of 13.6 million jobs, which is nearly identical to the 13.4 million workers employed at the 75 percent of firms which received the smallest PPP loans.<sup>23</sup> Although we cannot directly observe the cash flows of said firms, research by Farrell and Wheat (2016) finds that 75 percent of small businesses could not survive beyond 62 days without income given their small cash buffers.<sup>24</sup> The PPP has given these financially vulnerable small businesses a vital cash flow lifeline to fill in for the drastic reduction in revenues caused by the pandemic and economic shutdown, thereby facilitating their survival and shoring up millions of jobs; this is underlined by the failure of millions of small business bankruptcies to materialize. Indeed, far larger effects of PPP are claimed by JP Morgan's Jamie Dimon, who estimates that PPP saved 35 million jobs.<sup>25</sup>

### *Small Business Openings*

Opportunity Insights, a not-for-profit research center based at Harvard University, has also developed a dataset to track the impact of COVID-19 on small businesses since January 2020. They assemble data from different sources of "credit card processors, payroll firms, job posting aggregators, and financial services firms" to construct time series to track the impact of COVID-19. Figure 17 shows that by mid-April, the number of small businesses open had fallen over 40 percent compared to January. Since then, as States have reopened, the number has increased; it is currently about 25 percent below that of January 2020.

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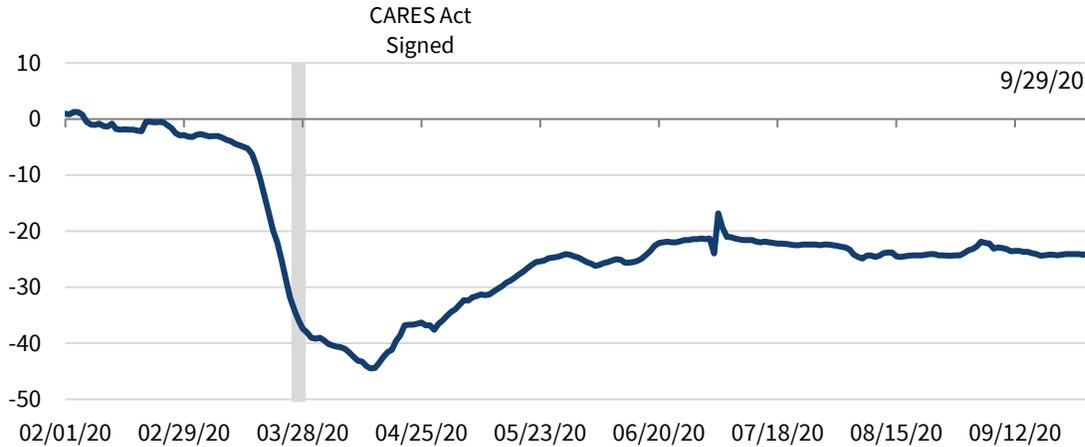
<sup>23</sup> See: [https://br.reuters.com/article/us-health-coronavirus-ppp-idUSKCN24T31C\\_](https://br.reuters.com/article/us-health-coronavirus-ppp-idUSKCN24T31C_)

<sup>24</sup> For purposes of external validity, Farrell and Wheat's sample comprised approximately 600,000 small businesses, of which 70 percent had five or fewer employees. Per PPP data, 70 percent of loans were made to firms we estimate to have seven or fewer employees. More recent research by Bartik et al. (2020a) shows a similar amount of cash on hand for small businesses as of March and April this year. The study suggested that three-quarters of the small businesses in their sample only had enough cash on hand to cover two months or less of business expenses; Recent research by Autor et al. (2020) using administrative payroll data from Automatic Data Processing, Inc. (ADP) finds that the PPP saved between 1.4 and 3.2 million jobs through just the first week of June. However, because PPP has also stemmed business closures, the total employment effect is likely to be considerably larger over time as those salvaged businesses re-hire furloughed workers. Moreover, this study focuses on exploiting the discontinuity in eligibility around 500 employees, and suffers a severe external validity problem because the overwhelming majority of PPP loans went to smaller small businesses. 75 percent of PPP recipients have nine or fewer employees, and statements about firms with hundreds of employees are not informative for this group. The study is also constrained by the lack of firm-level data on PPP loan receipt.

<sup>25</sup> See: <https://www.nbcnews.com/business/economy/ppp-likely-saved-35-million-jobs-says-jpmorgan-chase-ceo-n1236341>.

## Figure 17. Change in the Number of Small Businesses Open 7-Day Average, 2020

Percent change (relative to January base)

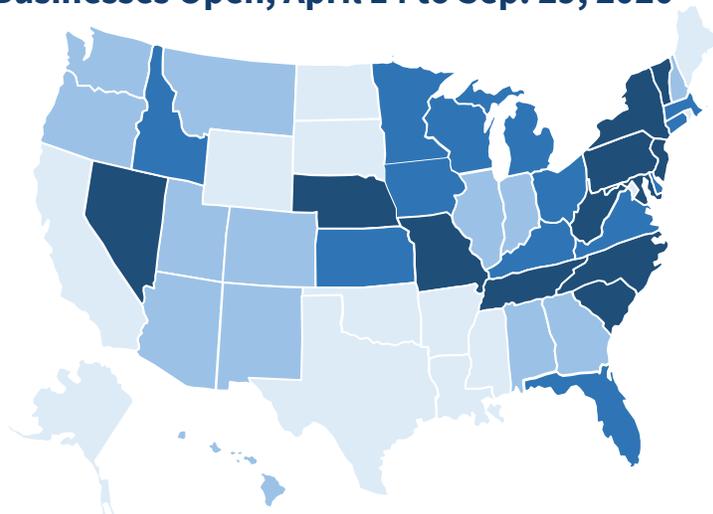


Source: Opportunity Insights.

Note: All the rates compare that day vs. the median for the day of the week for the period January 4, 2020 – January 31, 2020.

The Opportunity Insights data also captures how the impact of COVID-19 on small business varies by State. By April 10, all shelter-in-place orders had been announced; this date marks the nadir of the nationwide level of business activity. Figure 18 shows the states with the highest percent recovered of number of small businesses open since April 10, as of September 29. States in the east and northeast are the ones that have seen the largest gains from the nationwide trough.

## Figure 18. Percent Recovered of Number of Small Businesses Open, April 14 to Sep. 29, 2020



Source: Opportunity Insights.

Note: Percent recovered is the percent below pre-COVID levels on September 29 divided by percent below pre-COVID levels on April 14.



## Evidence of the Effect on Households

To ensure sufficient liquidity for households in light of the crisis, the Congress put forward several sources of cash support targeted at those who are the most vulnerable and those who lost their jobs because of the pandemic lockdowns. The success of this approach is evident in the latest jobs report. As of the time of writing of this report, the unemployment rate declined from a high of 14.7 percent in April to an unexpectedly low 7.9 percent in September, per the BLS, as millions of workers went back to their employers as businesses re-opened. In parallel, there has been a continuing decline in the number of workers claiming regular UI benefits, falling from 25.1 million during the week ending May 9 to 11.8 million the week ending October 17.<sup>26</sup> We estimate the improvement in the unemployment rate since May was almost entirely due to some of those on temporary layoffs returning to work. In other words, the September jobs report showed most temporary layoffs went back to work rather than becoming permanent layoffs.<sup>27</sup>

The Congress provided additional benefits to Americans to protect against economic insecurity. Workers at firms with fewer than 500 employees (though firms who employ health care providers and emergency responders and those with fewer than 50 employees may exclude such employees) were provided expanded paid sick days and family and medical leave benefits so that they could take time off to quarantine due to the illness, look after those in their family who needed to quarantine, or care for children whose child care programs or schools were closed. In short, numerous aspects of the relief bills, particularly the CARES Act, were aimed at helping households cushion the economic impact of the lockdown. While it will be months, possibly years, before the country fully recovers from the COVID-19 downturn, it is important to track whether the economy is moving in the right direction.

### Impact on Household Income

Key components of the CARES Act provided income directly to Americans. Parolin, Curran, and Wimer (2020) estimate that these CARES Act provisions could lower the poverty rate to 11.3 percent if households have high access to these benefits, below the 12.5 percent pre-crisis poverty rate and the 16.3 percent poverty rate projected in the absence of the CARES Act. Han, Meyer, and Sullivan (2020) study income data and find that the policy response to the pandemic protected low-income workers from a significant shock and decreased poverty.

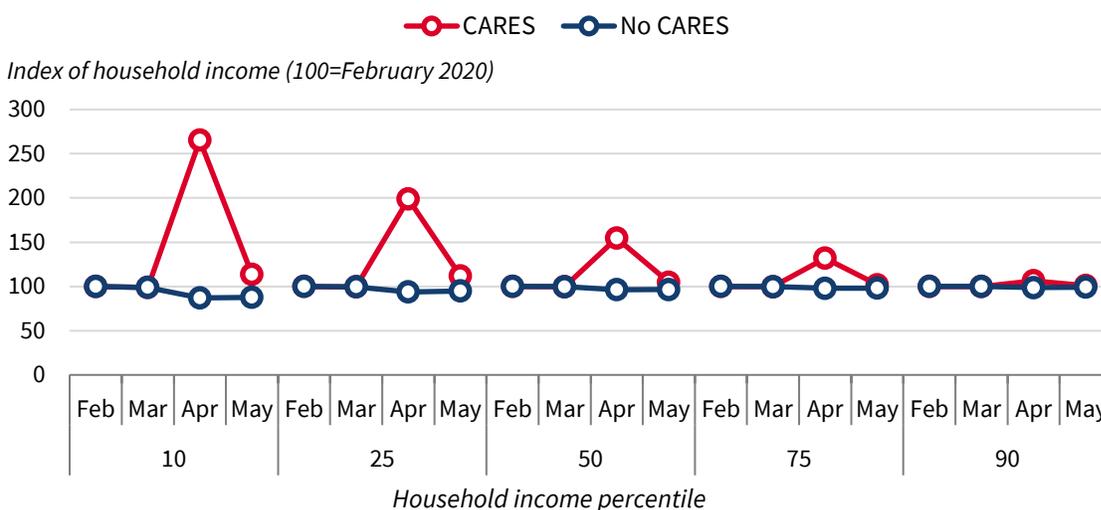
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<sup>26</sup> These totals reflect the sum of regular state-program insured employment, Pandemic Emergency Unemployment Compensation (PEUC), and Extended Benefits (EB). For the week ending October 17 total, a reporting lag requires PEUC and EB to be from the week ending October 10. These numbers do not include self-employed and gig-economy workers on the PUA program, but align closely with the number of unemployed workers reported in the monthly BLS Employment Report.

<sup>27</sup> We estimate that 19.3 million temporary layoffs were reversed from April to September, after incorporating those workers who were classified by the BLS as employed but not at work who may have actually been on temporary layoff and including workers who are not in the labor force but say they want a job. The total number of unemployed fell 16.4 million over the same period, suggesting the addition of 2.9 million more permanent unemployed workers. The same adjustment for misclassification would imply an unemployment rate of 19.6 percent in April and 8.9 percent in September, increasing the reduction in the unemployment rate over the last five months by 3.9 percentage points.

Figure 19 below simulates the trajectory of household income at different points of the income distribution. Without these CARES Act provisions, a household at the 10<sup>th</sup> percentile of the income distribution would have experienced a 13 percent reduction in income in March and April 2020 compared to their February 2020 level. However, their monthly income was 165 percent (\$1,901) higher in April and 14 percent (\$157) higher in May compared to February 2020. While the impact of the CARES Act is substantial for higher income households as well, it is relatively much smaller than that for the lowest income households. For example, absent the CARES Act, the 25<sup>th</sup> percentile household would have experienced a 6 percent and 5 percent decline in income in April and May, respectively, compared to February, and the 50<sup>th</sup> percentile household would have experienced a 4 percent decline in April and May. However, because of the CARES Act, their incomes substantially increased, especially in April.

**Figure 19. Index of Household Income by Percentile, 2020**



Sources: Census Bureau, Current Population Survey, Monthly and Annual Social and Economic Supplement; CEA calculations.

Note: See appendix for methodology.

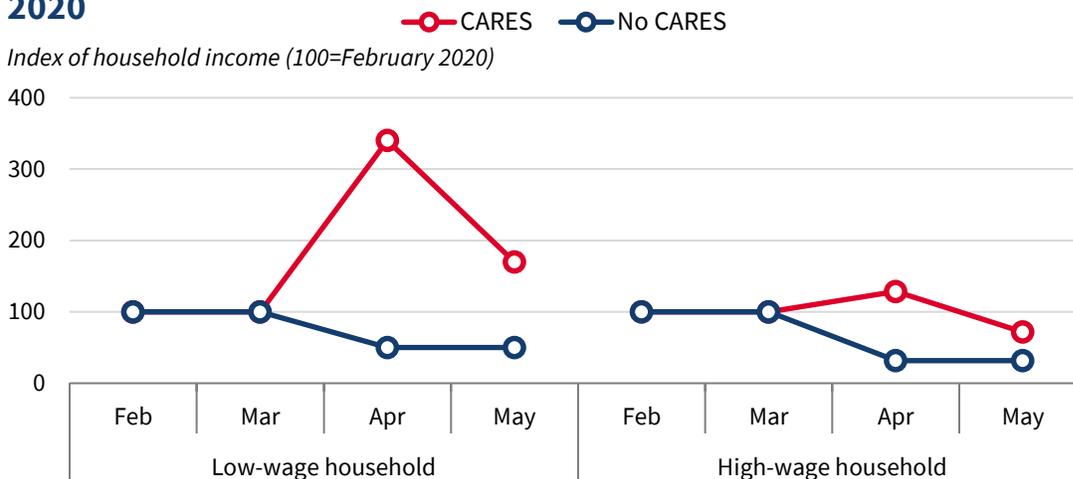
Because Figure 19 above includes all households, it does not show how important the CARES Act was in preserving the income of specific households experiencing job loss. Figure 20 below provides a more specific example of an illustrative household with two adults--one of whom works--and two children, with the worker losing his or her job starting in April 2020 and in which all income is assumed to come from earnings (see appendix for methodology). The worker in the “low-wage” household is assumed to earn \$500 per week, and the worker in the “high-wage” household is assumed to earn \$1,500 per week.<sup>28</sup>

The illustrative low-wage household would have experienced a 50 percent reduction in income in April and May, while the illustrative high-wage household would have experienced a 68 percent reduction in these two months. As a result of the CARES Act, the low-wage household instead experiences a 240 percent increase in income in April and a 70 percent increase in May, relative to February. The high-wage household instead experiences a 28 percent increase in April and a 28 percent decrease in May. Thus, the

<sup>28</sup> These values are chosen for illustrative purposes only, and do not represent specific points in the income distribution.

CARES Act in general provided greater income protection for low-wage households than for high-wage households.

**Figure 20. Index of Household Income for Example Households, 2020**



Sources: Census Bureau, Current Population Survey Monthly and Annual Social and Economic Supplement; CEA calculations.

Note: Low-wage household earns \$500 per week. High-wage household earns \$1,500 per week. See appendix for further details.

The above examples do not account for several other provisions that would have helped vulnerable households as well, such as those that expanded funding for SNAP, housing assistance, and other welfare programs. In the next section, we study the impact of the CARES Act on households in the aggregate.

### Increased Aggregate Disposable Personal Income

Absent a strong policy response, the COVID-19 recession would have likely caused a dramatic reduction in disposable personal income as workers lost jobs and businesses shut down. The April unemployment rate was 14.7 percent, the highest it has been since the Great Depression, and the rate for May was 13.3 percent.<sup>29</sup> In surveys, households reported high levels of concern about their financial security, with nearly half reporting significant losses of both income and wealth (Coibion, Gorodnichenko, and Weber 2020).

Yet, per data from the Bureau of Economic Analysis, real disposable personal income rose substantially in April after a large reduction in March and remained elevated above pre-pandemic levels from May through September. While employee compensation fell drastically in March and April, real disposable personal income experienced its largest one-month increase on record in April due to the unprecedented level of government transfers through the CARES Act. On May 8, 2020, Treasury and IRS announced that nearly 130 million Americans had received Economic Impact Payments, worth more than \$218 billion, in less than five weeks. So far, approximately 160 million Economic Impact Payments totaling about \$270 billion have been delivered. The Administration's efforts and success form a stark contrast with the last time a similar attempt was undertaken, when it took over two months to make 800,000 payments. The

<sup>29</sup> Some estimates put the rate at higher than the official U-3 rate. See, for example, Fairlie, Couch, and Xu (2020).

expansions to the unemployment insurance program have also propped up incomes. As of early October, \$348 billion has been received by households.

While incomes grew, real personal consumption saw a dramatic downturn in April, the largest one-month decline on record.<sup>30</sup> Real personal consumption rose in every month from May to August but remains 3.4 percent lower than pre-pandemic levels. The subdued personal consumption expenditures through August are most likely due to lockdown requirements, which restricted the number of spending opportunities, such as meals at restaurants. By contrast, retail sales, which have less exposure to services than do real personal consumption, were 1.9 percent higher in August than their February level. Personal saving saw its largest one-month increase on record in April, pushing personal saving as a percentage of real disposable income to 33 percent, a record high. Personal savings saw decreases between May and August but remain elevated. As lockdown requirements ease through the remainder of the year, savings rates will likely come down and the accumulated household liquidity spent.

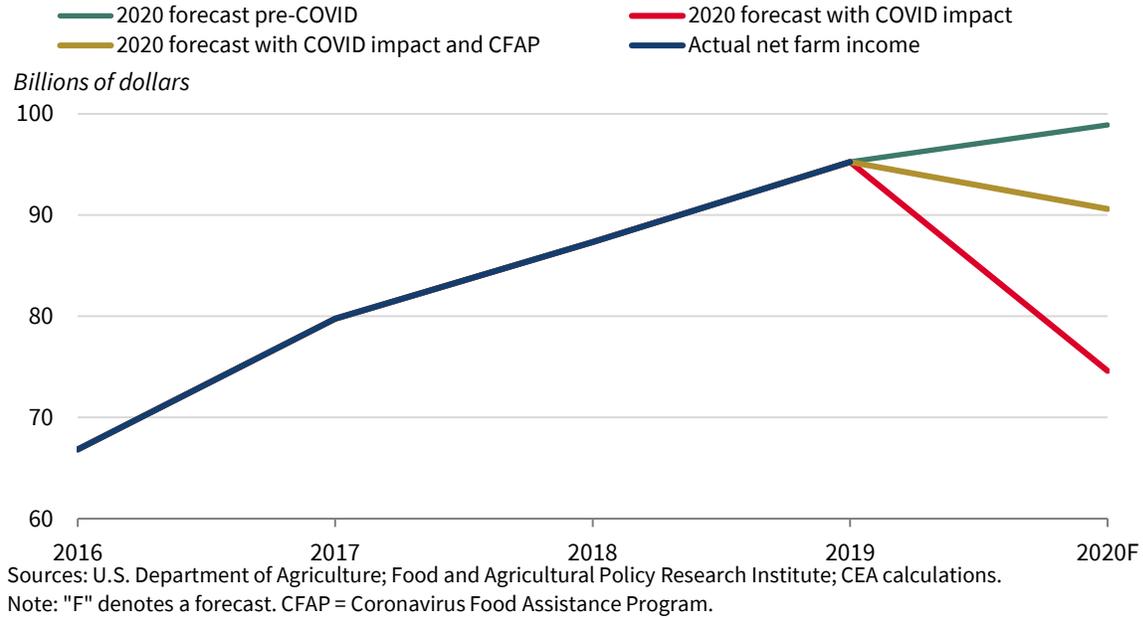
### Impact of the Coronavirus Food Assistance Program on Farm Incomes

The CARES Act authorized provisions to support farmers who were harmed by the consequences of the COVID-19 epidemic. These provisions took the form of USDA's Coronavirus Food Assistance Program (CFAP). The COVID-19 epidemic and the associated economic response disrupted food and agricultural markets, resulting in a dramatic drop in farm income for a wide array of agricultural products. CFAP makes available \$16 billion of financial assistance for producers of affected commodities, including \$9.5 billion to compensate for losses due to commodity price reductions between mid-January and mid-April 2020 and another \$6.5 billion for ongoing market disruptions. In early February 2020, before the extent of the impact on agricultural markets was understood, U.S. net farm income for 2020 was forecast to be \$99 billion, which would have been a 4 percent increase over 2019 and the highest net farm income since 2014. By June, as the magnitude of the epidemic became apparent, analysts had revised the forecast of 2020 net farm income down by more than \$24 billion (25 percent) when CFAP payments are excluded. Including the \$16 billion in emergency farm payments raises forecasts for net farm income to \$91 billion (Figure 21).

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<sup>30</sup> A recent paper by Chetty et al. (2020) shows that the largest declines in consumption spending came from the richest income households. As of June 10, high income households cut spending by 17 percent while those in low income households cut spending by only 4 percent. This is likely a function of stimulus payments as well as unemployment benefit receipt.

**Figure 21. U.S. Net Farm Income, 2016–20**



### Supplemental Nutrition Assistance Program

The Families First Coronavirus Response Act (FFCRA), which passed in March 2020, provided temporary benefit increases up to the maximum allotment for households not already receiving the maximum. The CARES Act provided over \$15 billion in additional contingency funding for increased costs associated with the FFCRA provisions, as well as anticipated increased participation in SNAP. As provided by the FFCRA and CARES Act, the Department of Agriculture also provided waivers of certain requirements so that nutrition programs could reach families and children while social distancing restrictions were in place. The FFCRA also suspended work requirements for non-disabled, childless adults through the month after the end of the COVID-19 public health emergency.

### Education

Between the first and third week of March, close to 100 percent of kindergarten, primary, and secondary schools were shut down. These closures have had a substantial negative effect both on the U.S. economy and on children themselves. Academic literature finds that children are likely to experience a persistent 2.3 – 3.7 percent decline in future earnings as a result of lower human capital accumulation from the

shortened school year.<sup>31</sup> The loss of human capital accumulation will also have deleterious effects on long-term growth for the country.

Meanwhile, the absence of parents from workplaces due to childcare duties induced by school closures and distance learning results in lost economic output. Those parents are likely to experience a persistent 1 percent drop in lifetime earnings because of lost job experience, as well.<sup>32</sup> We estimate that 18 percent of the workforce may fall into this category. Overall, data indicate that only about 30 percent of workers are likely to be able to telecommute.

Assuming that school closures and distance learning reduce work experience for even just four months, affected workers—as a lower bound, 70 percent of the one-quarter of the workforce with young children at home—are estimated to lose 1 percent of lifetime earnings. Furthermore, mothers—and single mothers especially—are less able to telecommute. Whereas 45 percent of married men with children can telecommute, the number falls to 42 percent for married women and dramatically to 21 percent for single women. The effects are likely to be particularly severe for early-career single mothers, who will experience not just lower earnings but also less secure job prospects. Moreover, keeping schools closed and implementing distance learning disproportionately harms lower-income families, who are less able to obtain additional help with child care, and are less able to obtain additional tutoring or instruction to supplement distance learning. These families are the most vulnerable to shocks, since they are the least likely to be able to work from home, and least likely to have accumulated savings.

## Conclusion

This report provides initial estimates of the economic impact of the suite of Coronavirus response legislation passed in March and April 2020. While the results reported here remain preliminary, it is clear that the immediate and extraordinary actions taken by the Administration and the Congress to mitigate the negative impacts of the pandemic on the economy and consumers have been successful at keeping businesses afloat and money in Americans' pockets. These actions, coupled with a historically strong economy prior to COVID-19, have allowed millions of Americans to maintain consumer spending and ties to their workplace.

Moreover, surges of liquidity and income replacement through Economic Impact Payments have greatly mitigated what was on pace to become the largest macroeconomic contraction since the Great Depression, increasing disposable income by nearly 4 percent since February. Small business bankruptcy levels for September remain far lower than what we would expect from the economic shock experienced, suggesting that relief measures may have played an important role in staving off business failures.

This report documents the potential effects of those fiscal and monetary actions thus far, accounting for what may have occurred in the absence of such a response, and finds that millions of Americans have been provided the liquidity to maintain their livelihoods and bolster economic recovery. It is important to

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<sup>31</sup> The range of decline in future earnings is derived from prorating full-year earnings declines to the three-month reduction in the school year caused by COVID-19. Sources for the range are Angrist and Krueger (1992) and Bhuller et al. (2017).

<sup>32</sup> Estimate derived from prorating the drop in lifetime earnings for each one year of lost job experience, as estimated in Altonji and Williams (2005).

note, however, that the crisis is not over. As the Nation continues its path to recovery, the Administration remains committed to taking the necessary steps needed to protect and improve the livelihoods of all Americans.

# Appendix

## Household Income Figures

### *Figure 19*

Household income is imputed in February 2020 as follows: Each household in February 2020 is ranked based on the reported family income category of the household head over the past 12 months – rankings within the same income category are assigned randomly. Specific income values are then assigned to each household in February 2020 according to its rank and the distribution of household income during calendar year 2018 based on the CPS-ASEC.

The same procedure is used to assign March, April and May household income values, which are then modified to incorporate income replacement programs.

Individuals who are unemployed in these three months are assumed to have been employed in February (this slightly overstates the number of individuals assumed to have lost their job since February since some were already unemployed in February, but it may also understate the number of individuals losing their job since some job losers may be out of the labor force due to temporary layoffs). The lost earnings for these individuals are then imputed by regressing the natural logarithm of weekly wages for workers in all months of the 2019 monthly CPS on worker characteristics including State of residence, family income, age, sex, race, Hispanic ethnicity, and educational attainment. These regression results are then used to predict typical weekly earnings for unemployed workers in March, April and May of 2020. Monthly estimates of lost earnings for unemployed workers are formed by multiplying these weekly earnings estimates by four.

### *Figure 20*

The low-wage household has \$2,000 in monthly income (all of which comes from earnings). The high-wage household has \$6,000 in monthly income (all of which comes from earnings). Each household has two married adults and two children. The working adult loses her job beginning in April.

## Coronavirus Response Funding Overview

### Phase 1: Coronavirus Preparedness and Response Supplemental Appropriations Act, 2020 (P.L. 116-123)

In total, this act provided \$7 billion in emergency funding for Federal agencies' response. Highlights include:

- Public Health and Social Services Emergency Fund, to fund countermeasures and support for emergency response and healthcare entities.
- CDC-wide public health response activities, including some global health efforts. In addition, the act provided funds for CDC's Infectious Diseases Rapid Response Reserve Fund.
- National Institutes of Health research and development of therapeutics, vaccination, and diagnostics for COVID-19.
- State and international assistance programs to prevent, prepare for, and respond to the virus.

Phase 2: Families First Coronavirus Response Act (P.L. 116-127)

In total, provided \$192 billion. Highlights include:

- Refundable tax credits for private-sector employers who provide required paid sick and family leave.
- Public Health and Social Services Emergency Fund, to pay claims of providers to provide COVID-19 testing and related services for uninsured individuals.
- Emergency transfers to State agencies for unemployment compensation administration expenses.
- Farmers to Families Food Box donation and distribution program.
- Nutrition programs, including Women, Infants, and Children (WIC) nutrition benefits and State and local agency operations, food banks through The Emergency Food Assistance Program (TEFAP), territory nutrition assistance grants, and such sums authority for the SNAP P-EBT program to support families while schools are closed.
- Emergency Medicaid Federal Medical Assistance Percentage (FMAP) increase of 6.2 percentage points for States that meet certain requirements, to provide fiscal relief and help States manage increased enrollment and health care costs. This increase will also support other Federal/State programs including the Children's Health Insurance Program, as well as foster care and adoption assistance programs.
- Department of Veterans Affairs (VA), to provide support for the VA medical care and information technology response, along with small amounts for other VA needs, chiefly personal protective equipment (PPE).

Phase 3: Coronavirus Aid, Relief, and Economic Security (CARES) Act (P.L. 116-136)

In total, provided \$2.1 trillion to respond to the COVID-19 outbreak and its impact on the economy, public health, State and local governments, individuals, and businesses. Highlights include:

- Economic stabilization, supporting trillions in Federal Reserve lending to business and State/local governments, including loans to airlines, related businesses, and businesses critical to national security.
- Paycheck Protection Program loans to small businesses, and certain non-profits, veterans' organizations, and Tribal business concerns, that can be fully forgiven if the funds are used for approved payroll and non-payroll costs (such as utilities and rent).
- Economic Impact Payments for individuals to provide \$1,200 per eligible individual plus \$500 per qualifying child. These amounts phase out for higher-income taxpayers.
- Coronavirus Relief Fund to provide general economic support to States, localities, and tribal governments. These funds can be used to address medical or public health needs related to COVID-19, as well as unemployment or business closures.
- Tax provisions, including,
  - Increases deductibility of charitable contributions through calendar year 2020;
  - Modifies limitation on losses for taxpayers other than corporations;
  - Establishes temporary employee retention tax credit, to encourage businesses to keep employees on payroll;
  - Increases utilization of net operating losses arising in tax years 2018 through 2020;

- Increases deductibility of business interest expenses for tax years 2018 through 2020;
- Accelerates refundability of corporate minimum tax credits;
- Suspends aviation excise taxes through the rest of calendar year 2020;
- Delays payment of certain employer payroll taxes through the end of calendar year 2020 and allows employers to pay them over the next two years; and
- Retroactively permits 100-percent bonus depreciation for qualified improvement property acquired and placed in service after September 17, 2017.
- Pandemic unemployment assistance and other emergency unemployment compensation measures.
- Public Health and Social Services Emergency Fund for countermeasures and support for emergency response and healthcare entities.
- Emergency increase in unemployment compensation.
- Disaster Relief Fund for emergency protective measures including: PPE and medical supplies, temporary medical facilities and personnel, sheltering, and 100 percent of National Guard Title 32 costs until June 24, 2020.
- Transportation: Transit Infrastructure Grants and Grants in Aid for Airports. The transit grants cover capital and operating expenses to maintain service, and to reimburse lost revenue due to the public health emergency. The airport grants cover operating and capital expenses at over 3,000 airports. Both grants reflect nearly three times the level of funding provided for these programs in FY 2020.
- Payroll support to the airline industry to maintain employment and avoid job cuts.
- Education Stabilization Fund to support States, school districts, and institutions of higher education to prevent, prepare for, and respond to COVID-19, as well as direct financial assistance to students that can be used to cover education, food, housing, healthcare, and child care expenses.
- Temporary relief for most Federal student loan borrowers, by pausing payments, with 0 percent interest, for all Department of Education-held student loans.
- Nutrition Programs: Supplemental Nutrition Assistance Programs (SNAP), the Food Distribution Program on Indian Reservations (FDPIR), nutrition assistance block grants to territories, Child Nutrition programs, Older Americans Nutrition Programs, and TEFAP funding for food banks. Support for these programs has been expanded to serve more individuals and to fund innovative ways to deliver meals to children while schools are closed.
- Department of Veterans Affairs, to provide support for the VA medical care and information technology response, along with small amounts for other VA needs, chiefly PPE.
- Coronavirus Food Assistance Program, a package of assistance to specialty crop, dairy, livestock, and row crop producers that includes funds provided through both the CARES Act and the Commodity Credit Corporation.
- Department of Defense (DOD), including for: medical care for service members, dependents, and retirees; diagnostics and medical research; PPE for medical and non-medical personnel; procurement of vaccines and anti-virals; National Guard and Reserve support for DOD missions; DOD private sector care costs; and Defense Production Act purchases.
- Funding for Economic Injury Disaster Loan (EIDL) Advances (grants), a new program that provided interim funding to EIDL lending program applicants, could be used for a wide range obligations such as rent, payroll, debt payments, and healthcare benefits.
- Additional borrowing authority for the United States Postal Service. The funds are to be extended by Treasury if the Postal Service determines that it is unable to fund operating expenses due to COVID-19 related changes.

- Department of Justice grants to support State, local, and tribal law enforcement in the response to COVID-19.

Phase 3.5: Paycheck Protection Program and Health Care Enhancement Act (P.L. 116-139)

In total, provided \$493 billion in additional funding for small business loans, health care providers, and testing. Highlights include:

- Additional funds for the Paycheck Protection Program.
- Additional funds for the Public Health and Social Services Emergency Fund.
- Additional funds for the Small Business Administration EIDL lending program, and additional funds for EIDL Advances (grants).

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