Executive Office of the President
Office of Management and Budget

In consultation with the Council of Economic Advisers, the U.S. Department of the Treasury, and the U.S. Small Business Administration

The Economic Impact of Coronavirus Response Funds

Fourth Quarterly Report

June 23, 2021

THE ECONOMIC IMPACT OF CORONAVIRUS RESPONSE FUNDS
FOURTH 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 (OMB), in consultation with the U.S. Department of the Treasury (Treasury), the Council of Economic Advisers (CEA), and the U.S. Small Business Administration, is charged with providing quarterly reports on the effects of certain Coronavirus response funds to the Congress and the public. This report provides evidence regarding the effects of these funds through mid-April that are critical to accurately assessing the impact of the relief funds 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 therefore remain preliminary and current as of mid-April.

This report estimates the impact of the Coronavirus response funds using high-frequency data sources.[1] The report does not fully reflect the impact of the American Rescue Plan Act of 2021 (ARP), which was signed into law in March 2021. The analysis indicates that the response funds have had a positive impact on the growth of real gross domestic product (GDP) and on employment in the months since the passage of the CARES Act, but that the pandemic continued to weigh on the recovery through mid-April of 2021. Early data from March, however, suggest a strong rebound in consumer spending as well as increases in measures of consumer and business optimism about the economy.

Among the key findings of the study are:

- The CARES Act and other response measures passed during 2020 helped improve economic growth and reduce unemployment. However, the pace of the recovery remained below the rate necessary to pull us out of the pandemic jobs deficit in a timely way, with the jobs recovery in industries hardest hit by the pandemic having stalled as of January 2021. The Congressional Budget Office (CBO) projected as of February 2021 that without additional funding to support the recovery that the unemployment rate would remain above its pre-pandemic projections until 2024.
- We find that efforts to facilitate income replacement cushioned the shock to household incomes, as aggregate real disposable income did not decline between February 2020 and March 2021,

[1] Please note, many of 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.

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 direct payments to suffering farmers that stabilized forecasts for net farm incomes.
- Measures designed to support small businesses and maintain employment helped temporarily stabilize labor markets and facilitate recovery, though small business bankruptcy levels increased over the second half of 2020. These increases slowed in the first quarter of 2021.
- Early data from March shows that the ARP has provided and will continue to provide critical support needed for a robust economic recovery while combatting the historic challenges in public health and education.

In sum, the CARES Act provided necessary funds during the early stages of the crisis. As the effects of the pandemic continued to be felt throughout 2020, it became clear that more stimulus and a renewed push to fight the pandemic was necessary; the pace of the recovery had slowed and key indicators of economic health were stuck below pre-pandemic levels. Early data indicate that the ARP has already provided an important lifeline to households and businesses—but more work remains.

Contents

Introduction 5
Evidence of the Effect on the Macroeconomy 7
Comparison to Prior Shocks 7
Impact on GDP 10
Impact on Unemployment 12
Impact on the Financial Sector 14
Evidence of the Effect on Households 16
Impact on Household Income 17
Increased Aggregate Disposable Personal Income 17
Impact of the Coronavirus Food Assistance Program on Farm Incomes ... **Error! Bookmark not defined.**
Supplemental Nutrition Assistance Program 18
Education 19
Evidence of the Effect on Businesses 20
Impact on Small Business Bankruptcies 20
How Small Businesses Have Responded to the Coronavirus Response Legislation 21
Conclusion ..... **Error! Bookmark not defined.**
Appendix 24
Coronavirus Response Funding Overview 25
References 29

Introduction

The Coronavirus Aid, Relief, and Economic Security (CARES) Act, along with related legislation, was enacted at the end of March 2020 to counteract the economic crisis resulting from the COVID-19 pandemic, which led to nearly 21 million jobs lost in April 2020 and a second-quarter contraction in real GDP of over 31 percent at an annual rate. This legislation aimed to help fight the pandemic, provide relief to businesses dealing with the temporary closing of their businesses, and provided security for households while employees face furloughs, school and childcare closings, and other effects of stay-at-home and quarantine orders. Combined with monetary policy support, this legislation formed a necessary policy response to the economic damage resulting from the pandemic.

The economic recovery progressed through the second and third quarters of 2020. After the unemployment rate spiked to 14.8 percent in April, it fell every month through September until it reached 7.8 percent.[2] Nonfarm payrolls fell over by over 22 million from February to April, of which 51.5 percent was recovered through the end of the third quarter. By September, real retail sales were 4.4 percent above their February level.

The recovery proceeded to slow during the fourth quarter of 2020 and through the first two months of 2021. The unemployment rate failed to continue its rapid descent and remained at 6.0 percent as of March 2021. Nonfarm payroll employment only recovered another 0.6 percent in March and remained 8.4 million (or 5.5%) below its pre-pandemic high from February 2020.

At the end of December, the Congress passed roughly $900 billion of relief legislation to extend several key CARES Act provisions and support vaccine production and distribution. January's economic data partially reflected this additional stimulus. The unemployment rate fell to 6.3 percent in January, though there was only a small increase in payroll employment.[3] In particular, the industries hardest hit by the pandemic have still only recovered half of the jobs lost last spring. Real retail sales during the first quarter of 2021 appear to track the disbursement of Economic Impact Payments. Retail sales grew 5.0 percent in January after the Economic Impact Payments (EIP) from the December legislation began to be distributed, proceeded to decline through February as the effect of that stimulus waned, and then spiked again in March following the impact payments incorporated in the ARP. While the vaccination program is progressing, the virus continues to spread and variants continue to threaten progress in beating the pandemic.

The backdrop of struggling households and a stalling economy suggested there was strong need for additional support, which the economy received in the form of the ARP passed by Congress in March. The ARP contained various provisions for supporting households and business while advancing critical pandemic-related challenges in public health and education. While it is too soon to see the effects of the ARP in prominent aggregate economic indicators, both consumers and businesses have shown increased

[2] While we cite official statistics here, the Bureau of Labor Statistics (BLS) clearly states that measurement of these statistics has been biased by their ability to conduct the survey during the pandemic, including a persistent misclassification of certain unemployed workers as employed.

[3] The headline unemployment rate could be as much as 3 percentage points higher after adjusting for misclassification and labor force dropout. See https://www.whitehouse.gov/briefing-room/blog/2021/04/02/the-employment-situation-in-march/

optimism about the trajectory of the economy, likely reflecting the consensus belief that this legislation will give the economy the boost it needed. For example, it is expected that provisions such as child tax credits and funding for education will be essential for getting Americans back to work, while funding on vaccination efforts will speed up the process by which consumers can return to restaurants and retail shopping establishments, thus boosting spending in the economy.

As part of the accountability and transparency provisions included in the CARES Act, OMB, in consultation with the CEA, Treasury, and 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."[4] This report will provide estimates of the effects of certain Coronavirus response funds through mid-April on employment, estimated economic growth, and other key economic indicators, including information about impacted industries.

As we outlined in previous reports, 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 policy responses enacted during 2020 were necessary, but insufficient. In particular, 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. With large parts of the relief funds supporting UI extensions and expansions, we assess that relief was targeted toward households that were more vulnerable to an adverse income shock.

However, as of early 2021, economic indicators continued to suggest that households and businesses needed additional support. More than one in ten adults were experiencing food insufficiency in early February, while one in five renters were behind on their rent. Small business support measures designed to maintain employment played an important role in allowing firms to remain solvent, but small business bankruptcies had picked up over the last quarter of 2020. Moreover, according to a U.S. Census Household Pulse Survey from April 2021, more than 4 million Americans reported that the primary reason for not working was concern about getting or spreading the coronavirus. The stimulus and support measures embedded in the ARP, especially the funding for vaccination efforts, thus represent necessary measures taken at a critical time.

We begin by employing high-frequency economic data, as well as real-time forecasts, to 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 output, unemployment and financial markets. Two more sections go on to describe how the Coronavirus response funds worked to attenuate some of the negative effects of the pandemic on households and small businesses.

[4] CARES Act § 15011.

This report is the fourth in a series that the OMB 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.

Evidence of the Effect on the Macroeconomy

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 the largest since the Great Depression. 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.[5] In March 2020, 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 regular UI benefit weeks claimed peaked 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 to 3.7 million [Apr 8 release], slightly below their Great Recession peak (Figure 1). Some of these claims, however, have moved on to Pandemic Emergency Unemployment Compensation (PEUC) or Extended Benefits (EB), both of which provide additional weeks of compensation for unemployment insurance filers. The regular State program data also do not include individuals receiving assistance through Pandemic Unemployment Assistance (PUA) in the CARES Act. In total, there remain over 18 million [Apr 8 release] weeks claimed in all UI programs, down from a peak in June 2020 of nearly 33 million but still well above the Great Recession peak.[6] Although the unemployment rate reached 14.8 percent in April 2020, the highest rate since official data were first collected in 1948, the unemployment rate declined to 13.3 percent in May despite expectations of an increase. Since May, the unemployment rate declined in every month through November, falling to 6.7 percent. The rate of improvement has since slowed dramatically, with the unemployment rate falling just 0.7 percentage points between January and March. This pace is too slow given the magnitude the pandemic jobs deficit – there are about 8.4 million [March NF payrolls] fewer jobs now relative to February 2020.

It should be noted that month-to-month unemployment rates can be noisy due to rates of labor force re-entry, the reimplementation of some mobility restrictions, as well as a slowdown in the recovery of temporary unemployment. In particular, we estimated that up to 80 percent of the increase in unemployment from February to May 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 March 2021, we estimated that up to 31 percent [March emp sit] of remaining unemployed workers are still on temporary layoff. Notably, this corresponds with higher levels of permanent

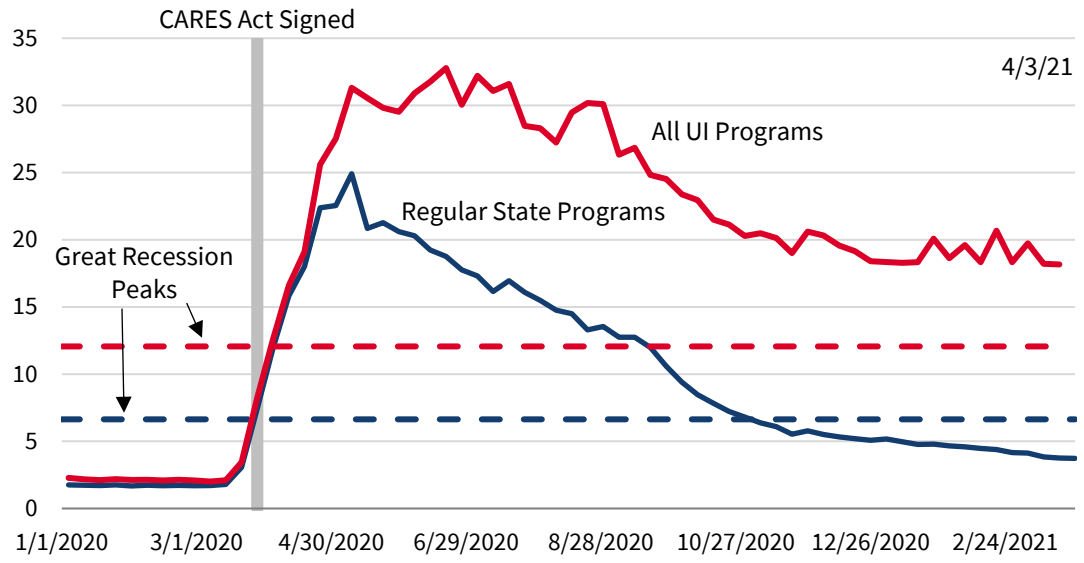
[5] We recognize there are well-documented shortcomings with this data during the pandemic, as highlighted in a November 2020 GAO report. This includes a divergence between the number of claims and the number of individuals claiming benefits, and inconsistencies in state reporting frequencies which may have a significant impact on the changes in claims numbers from week to week.

[6] The U.S. Department of Labor has recognized reporting issues with the PUA program, which has also impacted the accuracy of regular UI claims data. Again, see the November 2020 GAO report for more details.

unemployment, as there are now 4.2 million workers in March 2021 who lost their jobs and are not on temporary layoff, up from 2 million in February of 2020. Similarly, 4.2 million unemployed workers as of March have been unemployed for 27 weeks or more, roughly 43 percent of all unemployed workers.

Figure 1. Insured Unemployment by Week, 2020-21

Insured unemployment (millions)



Source: Department of Labor; CEA calculations.

Data on total economic output also reflect the enormous negative shock the pandemic 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). While a rebound occurred in the third and fourth quarter, real GDP fell 3.5 percent from 2019 to 2020 – greater than the decline experienced in 2008 or 2009 during the Great Recession. As of April, the Blue Chip planel of professional forecasters is projecting a 5.4 percent (annualized rate) increase in real GDP for the first quarter of 2021, and a 6.3 percent increase for 2021 overall (relative to 2020). The Blue Chip panel's April forecast for 2021 real GDP growth has been revised upward 0.6 percentage points from their March forecast, likely reflecting the passage of the ARP.

The COVID-19 pandemic dealt the economy a significant blow. Compared to other large U.S. recessions, the 3.5 percent decline is near the midpoint 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 (Table 1).

Unlike during the Great Depression, however, GDP is projected as of mid-April to rebound in the year after the passage of the ARP. For example,the April survey of the Blue Chip panel of private forecasters projects 6.3 percent growth in 2021. This level of rebound would imply that GDP would return to pre-COVID-19 levels by the middle of 2021. The March estimate from the Organization for Economic Co-operation and Development (OECD) (6.5 percent) and April estimate from the IMF (6.4 percent) are similar to Blue Chip; the February CBO projection of 4.6 percent does not account for the ARP. Still, the level of GDP in 2021 would surpass pre-COVID-19 levels for all forecasts.

Table 1. GDP Growth Impacts of Previous Shocks, 1919–2022

Event	*First year considered*	*Real GDP growth*		
		Year 1	*Year 2*	*Year 3*
Spanish Flu	1919	0.4%	-1.5%	-2.4%
Great Depression	1930	-8.6%	-6.4%	-13.0%
Great Recession	2008	-0.1%	-2.5%	2.6%
COVID-19 (CBO February forecast)	2020	-3.5%	4.6%	2.9%
COVID-19 (Blue Chip April consensus forecast)	2020	-3.5%	6.3%	4.3%
COVID-19 (OECD March forecast)	2020	-3.7%	6.5%	4.0%
COVID-19 (IMF April forecast)	2020	-3.4%	6.4%	3.5%

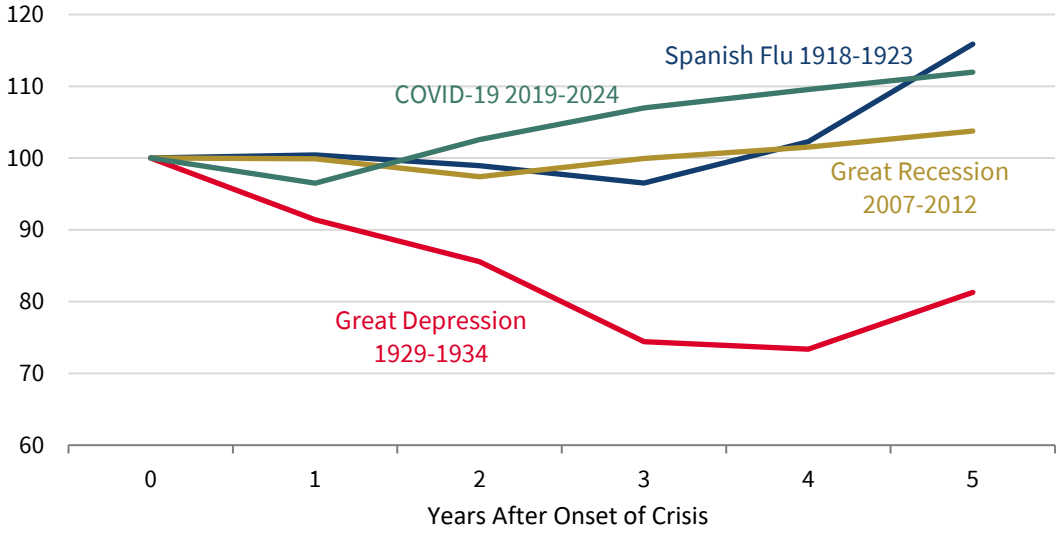
Sources: FRED; OECD; IMF; HISTSTAT; CBO; Blue Chip; CEA calculations.

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 2). Further comparisons to the Spanish Flu are complicated by 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, for example, exacerbates the economic impact of small business closings and a lack of childcare. The composition of jobs in the economy has also shifted dramatically, away from goods-producing 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 10 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 interventions were associated with reductions in excess deaths, with cities that implemented policies earlier and kept them in place longer experiencing fewer deaths.

Figure 2. GDP Recovery from Previous Crises

Real GDP (percent of pre-crisis baseline)



Source: FRED; HISTSTAT; Blue Chip; CEA calculations.
Note: COVID-19 projection is based on the January Blue Chip consensus forecast.

The preceding sections show that the immediate U.S. economic losses of COVID-19 were concentrated in the second quarter of 2020. 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 initial and necessary Congressional response to provide liquidity to households and firms through the passage and implementation of the CARES Act was designed to address this risk, and evidence presented in this section suggests that it has mitigated some of the damage to GDP and ultimately the livelihoods of Americans. In December, the Congress acted to provide additional necessary liquidity for workers and small businesses. Recognizing that the economy was still not on the track to a robust economic recovery, Congressional leaders passed an additional stimulus bill in March by way of the ARP.

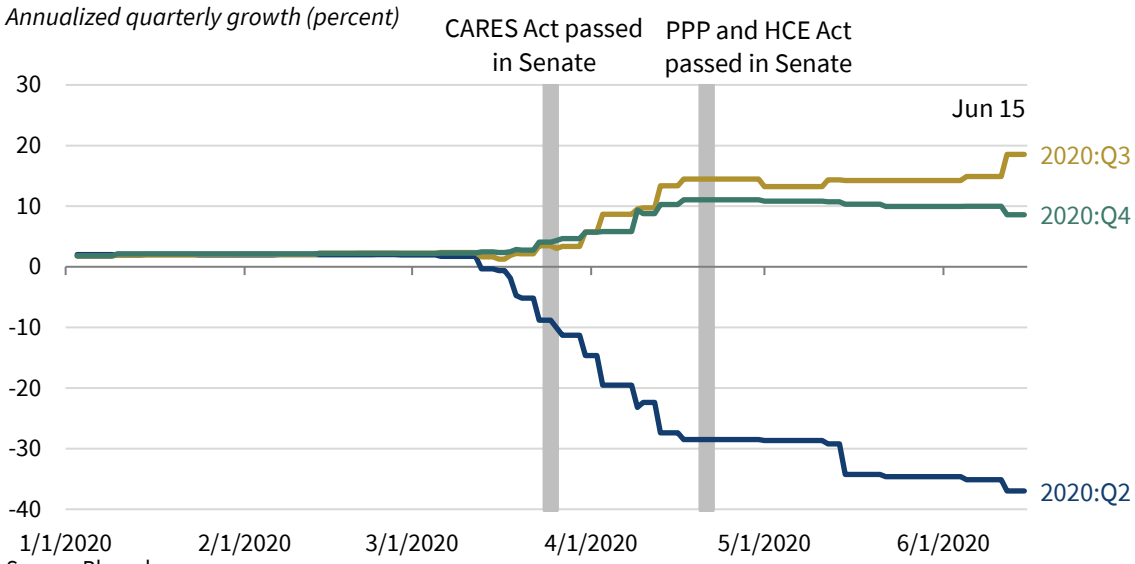
Impact on GDP

A growing economics literature is studying the impact of the COVID-19 pandemic 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. Figure 3 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

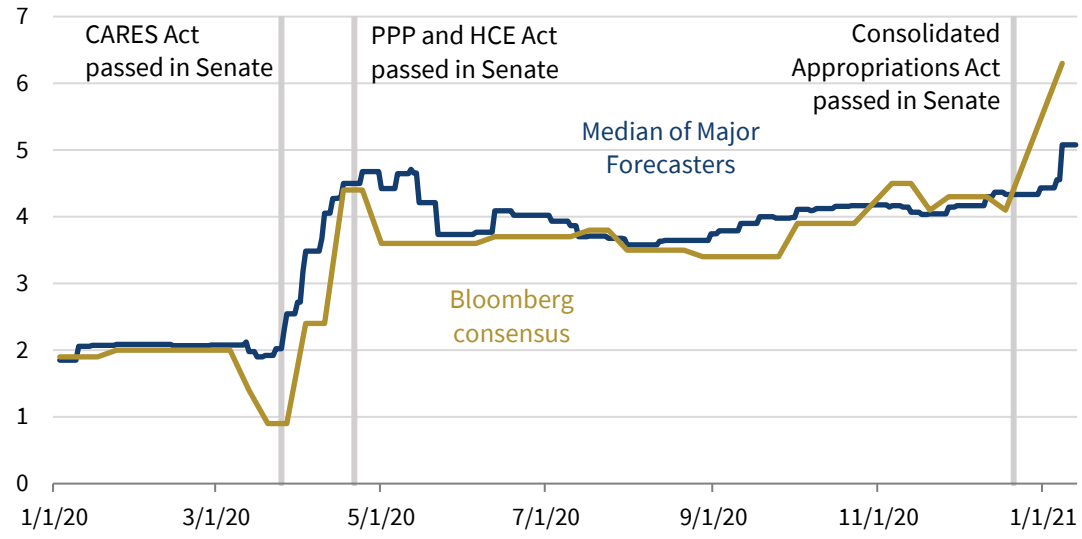
after mid-March as social distancing practices became prevalent and as analysts took into account new information provided by high-frequency economic indicators pointing to the steeper depth of the downturn. On the other hand, market analysts continued to revise the forecasts for 2020:Q3, 2020:Q4 and 2021 upward, particularly after the passage of the CARES Act (Figures 3 and 4). A similar jump in 2021 forecasts occurred after the passage of the Appropriations Act at the end of December (Figure 4).

Figure 3. Evolution of Median Forecasts for 2020 Quarterly GDP



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

Figure 4. Evolution of Forecasts for GDP in 2021



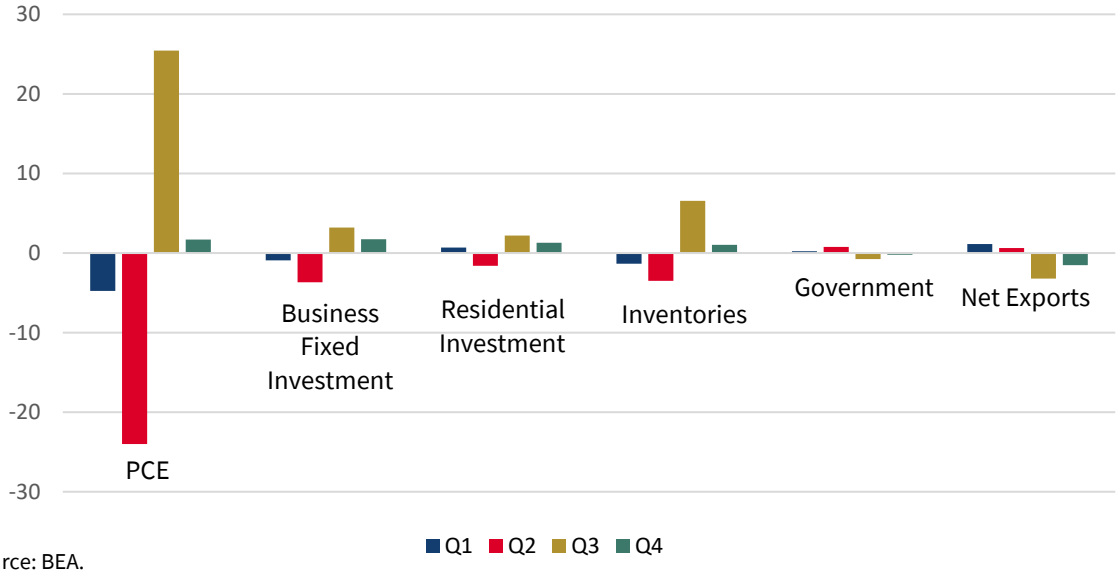
Source: Bloomberg.

Many have asked how much worse GDP would be in the absence of the Coronavirus relief legislation. There are some outside estimates of the economic impact of the Coronavirus response legislation, but substantial economic uncertainty surrounds all 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 while subsequent recovery in the fourth quarter of 2020 was estimated to be 7.2 percentage points slower. However, the CBO analysis relies on the use of fiscal multipliers for different parts of the relief legislation, which are uncertain in this unique macroeconomic environment.

A closer examination of the contributions to the percentage change in real GDP suggests that pandemic-induced mitigation strategies had the greatest impact on the largest component of real GDP, personal consumption expenditures (Figure 5). The impact of the Coronavirus response legislation can be seen in the rebound in personal consumption expenditures in the third quarter. American workers utilized the Economic Impact Payments and expanded unemployment insurance to bring about a large third-quarter increase in retail spending as the labor market recovered. Consumer spending on both durable and nondurable goods purchases also increased dramatically during the middle months of 2020 after sharp declines in March and April, surpassing their pre-pandemic levels. Despite the mid-year recovery, growth in nondurable goods spending came in at 2.1 percent (year-over-year) for 2020, considerably below the average growth rate between 2017-2019 of 3.3 percent. Moreover, consumer spending on services has yet to recover to pre-pandemic levels as of March 2021, and it declined by $603 million during 2020, or 7.3 percent relative to 2019. Lower spending on services overall has been driven by decreased activity in healthcare, transportation, recreation, and food and accommodation, all industries disproportionately impacted by the pandemic.

Figure 5. Contributions to Percent Change in Real GDP, 2020

Percentage points



Source: BEA.

In total, an examination of topline spending data during 2020 paints a picture of an economy that was buoyed by stimulus legislation during 2020 but that had yet to make the necessary progress to set the stage for a full and equitable recovery.

Real GDP during the first quarter of 2021 increased 6.4 percent at an annual rate, an improvement from the 4.3 percent growth rate of real GDP during the fourth quarter of 2020. The first quarter increase in real GDP was supported in large part by consumer spending, which grew 10.7 percent an at annual rate, and contributed 7.0 percentage points to the overall percent change in real GDP. Consumer spending represents roughly 70 percent of GDP, and has been shown to be responsive to economic stimulus throughout the COVID-19 pandemic, particularly Economic Impact Payments.

Impact on Unemployment

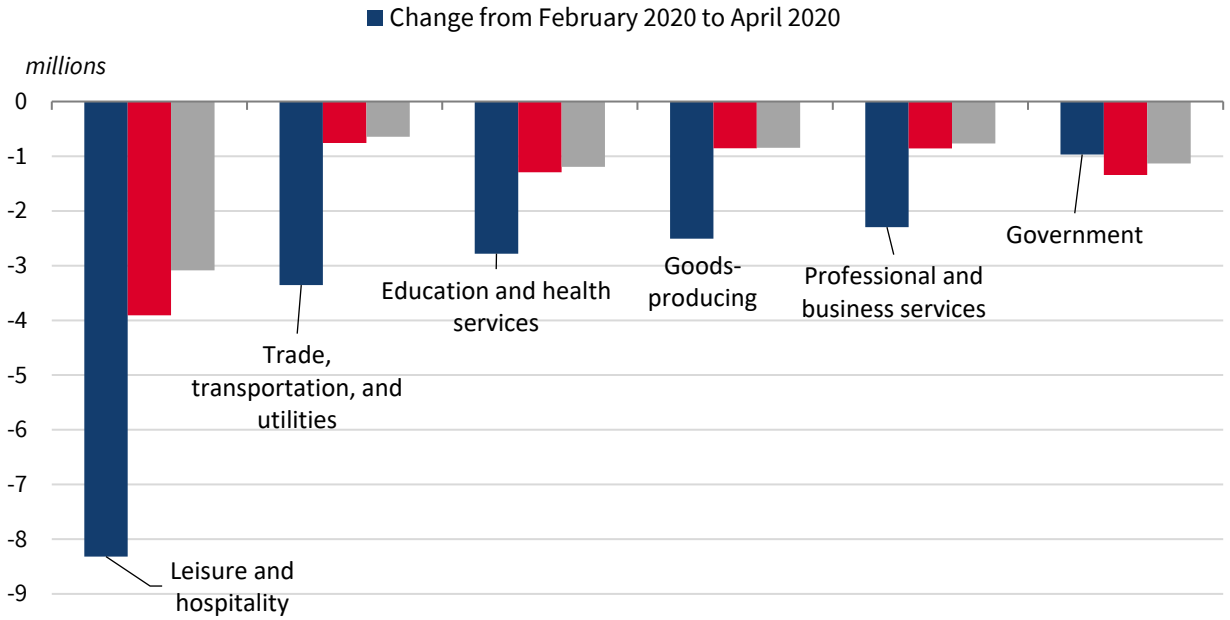
After the early-pandemic jobs report in March 2020 showed evidence for a labor market collapse, the unemployment rate spiked to 14.8 percent in April. During May, however, the unemployment rate declined to 13.3 percent.[7] This is consistent with the idea that the CARES Act helped workers stay connected to firms and helped those firms be in a position to hire workers back as the economy adopted social distancing precautions. In the first five months of recovery, 11.4 million jobs lost were regained, per the BLS' Current Employment Statistics. The pace of the recovery has since varied over the second half of 2020 and early 2021. During the last three months of 2020 only an additional 850,000 jobs were added, 680,000 of which were in October. Moving into 2021, the jobs recovery started to pick up momentum; the economy added 233,000 jobs in January and another 1.4 million over February and March. Despite recent gains, as of April there were roughly 8 million fewer jobs than before the onset of the pandemic, and even at the pace established over the first quarter of 2021, it would take more than a year to recoup these losses entirely. The unemployment rate tells a similar story.

The unemployment rate fell to 7.8 percent by the end of the third quarter in 2020, and fell again to 6.7 by the end of the year. Through the first three months of 2021 however, the rate of improvement slowed, and the unemployment rate sat at 6.0 percent as of March. As we have previously mentioned, though, BLS has acknowledged there are measurement issues in their household survey, and there has been an uptick in workers leaving the labor force who have had their job search constrained by the pandemic.

Recent Employment Situation reports also highlight the degree to which the pandemic has had sector-specific employment effects. Over 8 million jobs in the leisure and hospitality industry were lost in March and April of 2020, with only half being recovered from May to December (Figure 6). The same is true for the nearly 3 million jobs lost in the education and health services industries and 3.4 million jobs lost in trade, transportation, and utilities. As of March 2021 and despite further gains, these sectors continue to be hindered by the pandemic.

[7] 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 19.5 percent to 16.4 percent, a drop of 3.1 percentage points.

Figure 6. 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.

Pandemic job losses have not only been felt differently across sectors of the economy, but across different demographic groups of the workforce as well. A recent report by Brookings (2020) suggests that industry composition by geographic regions, and the correlation of employment in certain industries with race and ethnicity are channels through which the effects of the pandemic have been felt unequally. In particular, the report finds that industries susceptible to COVID-19 tend to be in metropolitan areas with large Hispanic and Latino populations. This geographic component of the pandemic's economic impact magnifies existing disparities, and exacerbates the racial wealth gap for Hispanic and Latino families.

Impact on the Financial Sector

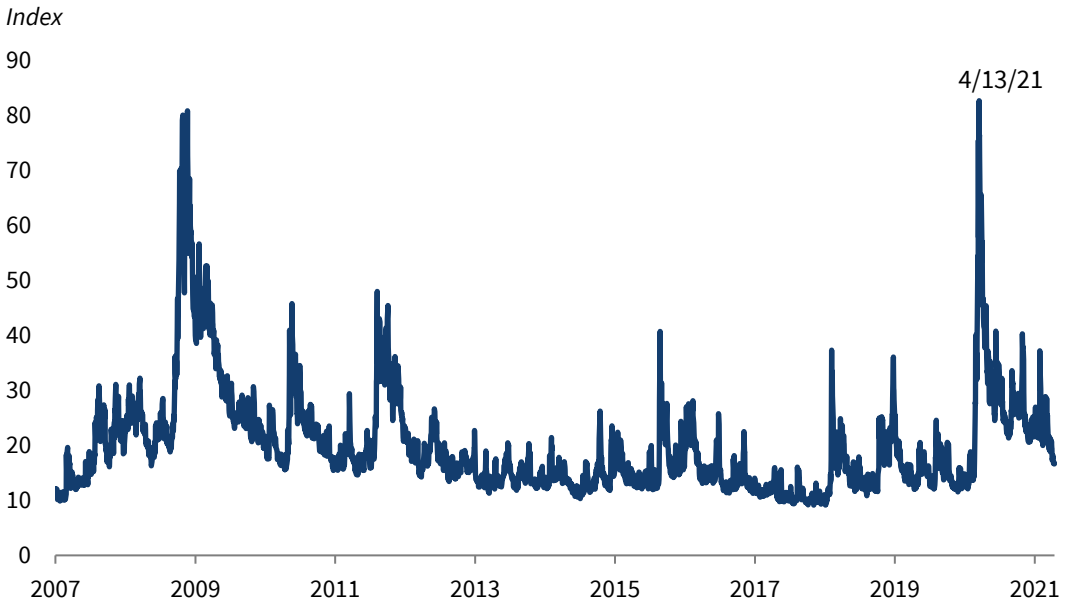
A variety of indicators of financial market stress increased significantly early in the COVID-19 pandemic period but have since receded. Preliminary findings indicate that the monetary and public policy responses have mitigated the epidemic's impact on financial markets.

The extraordinary Federal Reserve response to the COVID-19 pandemic attempted to improve liquidity and restore market function of the economy. The Federal Reserve, with the approval and financial support of 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 Treasury 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 functioned as backstops for these critical short-term funding markets by providing liquidity for commercial paper issuers, market intermediaries, and buyers of money market fund assets, reversing the fear-driven outflows that occurred in March. The PMCCF, SMCCF, TALF, PPPLF, MLF and MSLP aimed to support longer-term funding and credit markets, preventing otherwise-solvent borrowers from facing financing pressures because of a broader downturn in liquidity and thereby underpinning employment and the broader economy.

The VIX, an index of expected stock market volatility derived from options prices, spiked from 27 in late February 2020 to a peak of 83 on March 16, 2020 (Figure 7). It has fallen since then back to pre-pandemic levels (as of the end of March, the VIX was 19).

Figure 7. Market Volatility Index (VIX), 2007–21



Source: Wall Street Journal.

Similarly, corporate bond spreads such as the spread between Baa bonds relative to Treasury notes show a similar pattern peaking around March 23 and then receding (Figure 8). The trends in these indicators, and others, suggest that these Federal Reserve lending facilities have played a necessary role in easing market strain and ensuring access to liquidity for businesses, households, and communities.

Figure 8. Baa Corporate Bond and 10-Year Treasury Note Spread, 2006–21

Basis points

Source: Moody's.

Evidence of the Effect on Households

U.S. households have benefited for various forms of pandemic-related stimulus and support, including direct payments to individuals and families, expanded unemployment benefits, and efforts to address food insecurity and challenges in education.

To ensure sufficient liquidity for households in light of the crisis, the Congress put forward sources of cash support targeted at those who are the most vulnerable and those who lost their jobs because of the pandemic. As of the time of writing of this report, the unemployment rate declined from a high of 14.7 percent in April 2020 to 6.1 percent in April 2021, per the BLS. In parallel, there has been a continuing decline in the number of regular UI benefit weeks claimed, falling from 25.1 million during the week ending May 9, 2020 to 10.5 million the week ending March 27, 2021.[8] We estimate the improvement in the unemployment rate from May 2020 to March 2021 was almost entirely due to some of those on temporary layoff returning to work.[9] Recent official data now shows permanent job losers composing a greater fraction of the unemployed, with the number of unemployed on temporary leave (2.0 million)

[8] These totals reflect the sum of regular state-program insured employment, Pandemic Emergency Unemployment Compensation (PEUC), and Extended Benefits (EB). For the week ending March 27 total, a reporting lag requires PEUC and EB to be from the week ending March 20. 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. With the recent extension in PEUC eligibility, these figures should remain comparable over the coming months.

[9] We estimate that 22.9 million temporary layoffs were reversed from April 2020 to March 2021, after incorporating those workers who were classified by the BLS as *employed but not at work* who may have actually been on temporary layoff. The total number of unemployed fell 20.2 million over the same period, suggesting the addition of 2.7 million more permanent unemployed workers.

being outpaced by the number not on temporary leave (4.2 million). Moreover, as of April the unemployment rate remains 2.6 percentage points above the rate in February 2020, before the pandemic. However, over this same time period, nearly 4 million workers have dropped out of the labor force, disproportionately women.

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 paid sick days and expanded family and medical leave benefits for COVID-19 related reasons 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 childcare 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 pandemic.

Impact on Household Income

Key components of the CARES Act provided income directly to Americans. In June 2020, 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. By October 2020, Parolin et al. (2020) had found that the poverty rate increased by 1.7 percentage points to 16.7 percent from February to September. This spike was largest for Black and Hispanic individuals, as well as children. The expiration of EIP and UI benefit supplements drove the September poverty rate above pre-crisis levels.

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 2020 unemployment rate was 14.7 percent, the highest it has been since the Great Depression, and the rate for May was 13.3 percent.[10] 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).

Employee compensation fell drastically in March and April of 2020. Despite large gains being made over the course of May and June, growth in compensation has since slowed and remained below pre-pandemic levels as of February 2021. By looking at data from the Bureau of Economic Analysis (BEA) on aggregate real disposable personal income, however, we see that after initial declines during the early pandemic, disposable income has risen above pre-pandemic levels and has remained elevated throughout 2020 and into 2021. The discrepancy between employee compensation and personal income is evidence that stimulus measures passed throughout 2020 helped put a floor on household income during the pandemic. During May of 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. In total, approximately 166 million Economic Impact Payments totaling about $277 billion were delivered in round one, with more

[10] Some estimates put the rate at higher than the official U-3 rate. See, for example, Fairlie, Couch, and Xu (2020).

appropriated in late December. The ARP also included direct payment to individuals of up to $1,400 for individuals and $2,800 for families.

The expansions to the unemployment insurance program have also propped up incomes. As of the beginning of April 2021, over $515 billion has been received by households, $169 billion of which has come since the start of the fourth quarter 2020. Outlays since October have been dominated by $45 billion for PUA benefits for self-employed and gig-economy workers, $40 billion for PEUC benefit extensions for workers who have exhausted their regular State benefits, and $71 billion in Federal Pandemic Unemployment Compensation (FPUC) provided through an additional $300 in weekly benefits that was added in the Appropriations Act in December 2020 and extended in the ARP. Recent research from early in the pandemic found no evidence that these funds discourage employment. For example, Altonji et al. (2020) found that workers who experience larger increases in UI generosity did not experience large declines in employment when the benefits expansion went into effect and that those individuals returned to their previous jobs at similar rates as others.[11]

While the income side of households' balance sheets have been propped up by economic relief payments, aggregate data show that as of April 2021 the spending side remains depressed relative to pre-pandemic levels. Real personal consumption saw a dramatic downturn at the onset of the pandemic, and in April experienced the largest one-month decline on record.[12] Despite generally trending towards recovery during 2020, progress remained slow and spending remained below its February 2020 level as of X. Of note is the spike in spending observed in February of 2021, which reflects the distribution of Economic Impact Payment from the Consolidated Appropriation Act during January, and demonstrates the ability of stimulus measures to provide an immediate boost to the economy. Additional evidence of this exists in the Bureau of Economic Analysis' credit card transaction data on industry-level spending. These data show recent improvements, as of April 2021, in spending on food services and drinking places, accommodation, and gasoline stations (BEA (2021)).

The decline in overall spending has led to an increase in the savings rate over 2020 and into 2021. Personal saving saw its largest one-month increase on record in April of 2020, pushing personal saving as a percentage of aggregate real disposable income to 33 percent, a record high. Personal savings saw decreases between May and November but ticked up in December and January and remain elevated into March 2021. As gathering restrictions ease through 2021, it is possible that savings rates will come down, and the accumulated household liquidity may be partially unwound.

Supplemental Nutrition Assistance Program

[11] Other research supports this conclusion. Bartik et al. (2020a) find no evidence that high UI replacement rates drove jobs losses or slowed rehiring, while Marinescu, Skandalis and Zhao (2020) show that employers did not experience greater difficulty finding applicants for their vacancies after the CARES Act, despite the large increase in unemployment benefits.

[12] 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.

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 the Supplemental Nutrition Assistance Program (SNAP). As provided by the FFCRA and CARES Act, the U.S. Department of Agriculture (USDA) 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. Funding for SNAP was expanded and increased in the December Appropriations Act.

Recent data have shown that Americans are struggling with food hardship during the pandemic. According to the Census Bureau Household Pulse Survey from early February 2021, nearly 11 percent of all adults in the U.S. reported that their household sometimes or often didn't have enough to eat in the prior week. As of late March, however, this fraction has fallen to 7.4 percent. Still, both adults in households with children and Black and Latino adults were more likely to report not having enough to eat. The most common reason given by these households for not having enough to eat was not being able to afford to buy more food.

Education

Between the first and third week of March 2021, close to 100 percent of kindergarten, primary, and secondary schools closed. These closures have had a substantial negative effect both on the U.S. economy and on children themselves. Academic literature finds that without additional investments in education, 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.[13] 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 remote schooling and lack of childcare 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.[14] 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. While 45 percent of married men with children can telecommute, the number falls to 42 percent for married women and falls dramatically to 21 percent for single women (Alon et al. (2020)). 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

[13] 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).

[14] Estimate derived from prorating the drop in lifetime earnings for each one year of lost job experience, as estimated in Altonji and Williams (2005).

families, who are less able to obtain additional help with childcare, are less able to obtain additional tutoring or instruction to supplement distance learning, and are less likely to have internet access and laptops required for 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.

Evidence of the Effect on Businesses

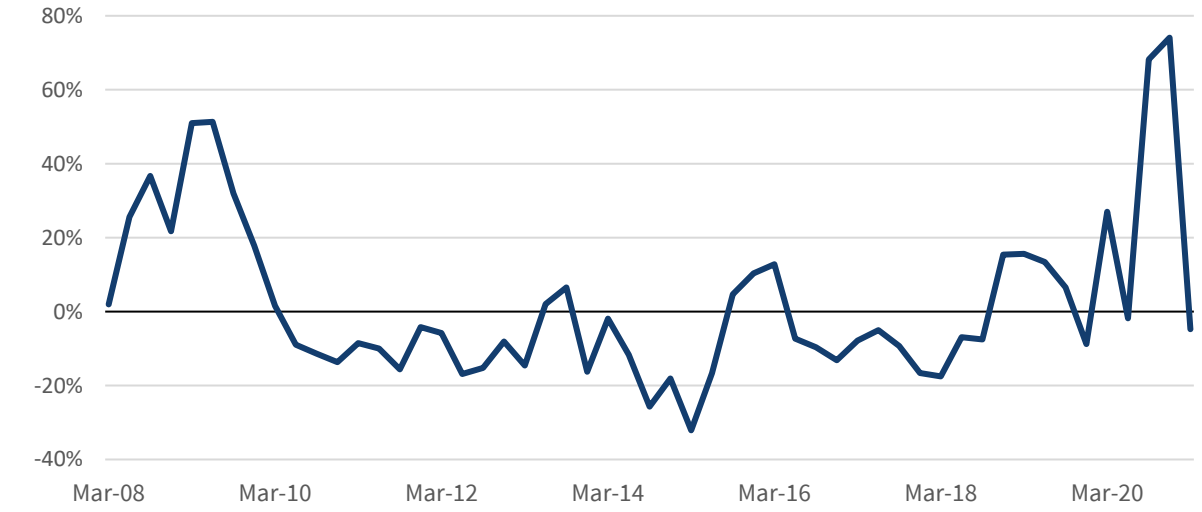
In this section, we focus on provisions specifically aimed at businesses that improved access to financial resources and allowed businesses to weather the crisis. We explore how the availability of forgivable loans and grants has allowed small businesses to retain employment, re-open, and recover revenues. While the small business optimism index compiled by the National Federation of Independent Business (NFIB) showed a 13.1-point improvement in September, relative to April, the index fell 8.1 points in the fourth quarter of 2020. It rebounded in March 2021, but remained 6.3 points below its pre-pandemic level as of X. The combined index is a combination of several sub-indexes, of which most followed a similar pattern. Actual values for sales remained stable in the first quarter of 2021, but expectations have softened, while capital expenditures have now returned to pre-pandemic levels. Of the businesses surveyed in September, a net of about 23 percent more businesses were more optimistic about creating jobs than not, which represented a 22-percentage point increase from April. In December, this net percent fell to 17 percent, but it has since rebounded to 22 percent. Small businesses have begun to increase compensation and plan to continue to do so; in March, 28 percent more of surveyed firms reported increasing compensation for their employees than reported decreasing compensation for employees over the past three months. Looking forward, 17 percent more firms planned to increase compensation (relative to decrease) over the next three months.

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. Small business bankruptcies for the second quarter of 2020 as a whole decreased by 1.8 percent (Figure 10). In the third and fourth quarter, the change in year-over-year bankruptcies accelerated to 68.2 percent and 74.1 percent, respectively. By the first quarter of 2021, this pace had slowed significantly, with a year-over-year decrease of 4.8 percent in bankruptcies.

Figure 9. Chapter 11 Small Business Bankruptcy Filings, 2008-21

Year-over-year change (percent)



Source: Justice Department; CEA calculations.

Bankruptcies data from 2020 could be biased by 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. It is unclear to what extent these issues will manifest in 2021 and throughout the remainder of the recovery.

How Small Businesses Have Responded to the Coronavirus Response Legislation

Support for small businesses in relief legislation likely helped businesses maintain employment through the spring and summer of 2020. For example, Bartik et al. (2020b) found that PPP loans led to a 14-30 percentage point increase in a business's expected survival, with the largest impacts on survival for businesses with more employees. 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 small businesses employing an estimated 51 million workers, which represents more than 80 percent of small business payrolls.

After funds for additional PPP loans were appropriated in December, another 4.4 million loans have been approved for a total of $233 billion by 5,240 lenders. Of the 4.4 million loans approved, 2.2 million have been second draw loans ($191 billion) and 2.2 million have been first draw loans ($42 billion). These funds include specific set-asides that ensure equitable access of PPP funds, including for businesses with 10 or fewer employees or those in low- and moderate-income (LMI) areas. Previous evidence from Neilson, Humphries and Ulyssea (2020) showed that small businesses were less aware of the PPP and less likely to

apply than larger businesses.[15] But data on 2021 PPP lending has shown that the current round of PPP has been successful at reaching smaller and underserved businesses, an effort which was aided by the efforts of non-bank lenders.

Based on Census tract matching, we estimate that approximately 28 percent of PPP funds went to businesses in LMI areas—a figure proportionate to the LMI share of the U.S. population. 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 others.

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 the first week of June. Chetty et al. (2020) found PPP effects of a similar magnitude. Both imply relatively small effects on employment rates. However, because PPP has also stemmed business closures, the total employment effect could be considerably larger over time as those salvaged businesses re-hire furloughed workers. Treasury's Office of Economic Policy produced a December working paper that studies the impact of regional banking differences, which varied the timing of PPP rollout, on UI claims. The study concluded that an aggregate of 18.6 million jobs could have been preserved through the program.

Small Business Expectations of Near-term Economic Conditions

The sentiments of small businesses are an important lens through which to view the recovery, and the Census Small Business Pulse survey provides a high-frequency way to gauge the current climate for these businesses. For example, in a survey taken between March 29th and April 4th, respondents were asked if their business had made any changes to their proposed capital spending since March 2020; the survey found that 45 percent of businesses either decreased, canceled, or postponed capital expenditures over the last year. These results are indicative of an economy that still has an upward climb to recover lost economic potential due to the pandemic recession.

Looking toward the future, the Small Business Pulse survey also asked respondents how much time they think will pass before they return to a normal level of operations. A plurality of respondents (37%) answered that it will take more than 6 months for conditions to normalize. The results of this question are consistent with those of another survey question in which more than half of respondents whose business typically involves travel do not plan to do so over the next six months. This makes funding for vaccination efforts embedded in recent stimulus packages all the more important, as reduced spending and travel will hold back the speed at which businesses can rehire workers.

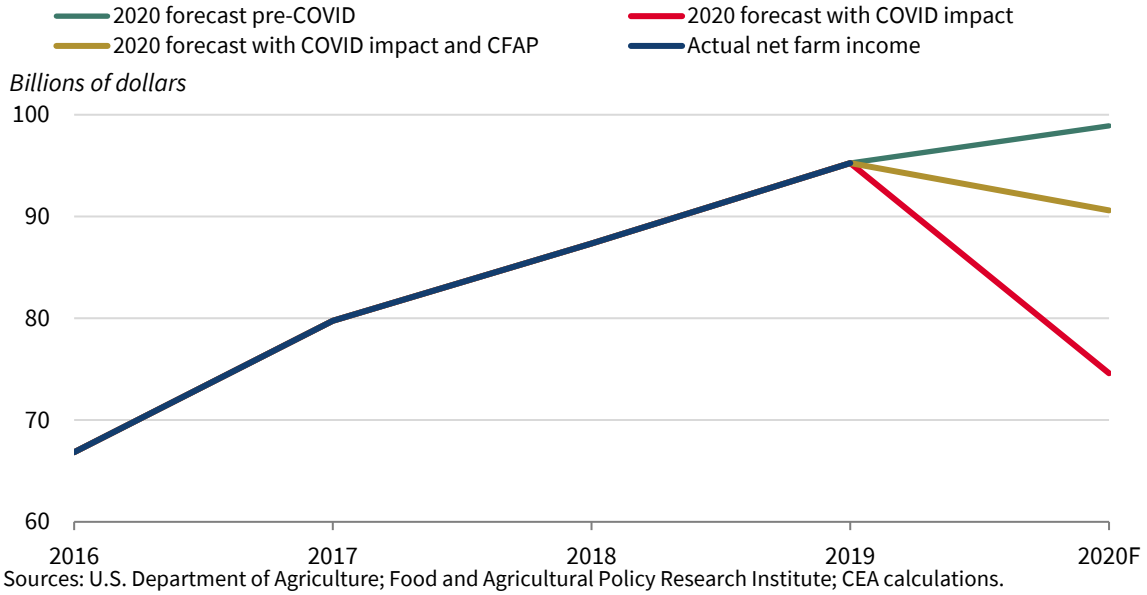
[15] The authors also showed that, among businesses who applied for PPP loans, smaller businesses applied later, faced longer processing times, and were less likely to have their applications approved.

There was, however, a bright spot among these survey results. Of the businesses polled, 31 percent suggested they plan to identify and hire new employees over the next six months, while 30 percent plan to increase marketing and sales. More than just a positive sign for growth over the coming months, these results are consistent with other measures of business activity and optimism that have ticked upwards following passage of the ARP in March.

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 CFAP payments raises forecasts for net farm income to $91 billion (Figure 9). It is important to note that the pandemic affected all of agriculture, but that many farmers did not benefit from previous rounds of pandemic-related assistance. CFAP has been modified under the ARP in order to better reach underserved producers and small to medium sized farmers.

Figure 10. U.S. Net Farm Income, 2016–20



Sources: U.S. Department of Agriculture; Food and Agricultural Policy Research Institute; CEA calculations.
Note: "F" denotes a forecast. CFAP = Coronavirus Food Assistance Program.

Conclusion

This report provides initial estimates of the economic impact of the Coronavirus pandemic and the legislative responses that followed, including legislation passed throughout 2020, and with preliminary comments on the ARP passed in March 2021. While the results reported here remain preliminary, it is clear that the actions taken by the Congress to mitigate the negative impacts of the pandemic on the economy and consumers were necessary, allowing millions of Americans to remain solvent and businesses to mitigate employment losses. Moreover, surges of liquidity and income replacement through Economic Impact Payments and UI expansions helped mitigate the economic shock, preventing a decline in aggregate disposable income. While small business bankruptcy levels increased over the second half of 2020 and the pace of job gains slowed sharply in in the first months of 2021, early data from March and April of 2021 show renewed signs of recovery.

This report documents the potential effects of fiscal and monetary actions thus far, and attempts to account for what may have occurred in the absence of such a response. Support for households bolstered income for many Americans, and legislation extended a lifeline to many businesses.

The CARES Act, along with other legislation passed during 2020, helped put a floor on the economic crisis while working to address critical public health challenges. The ARP was intended to provide the necessary catalyst for kickstarting the recovery and minimizing the long-term scarring from the recession. Yet economic and public health challenges remain, many of which predate the pandemic. As the Nation continues its path to recovery, the Federal Government remains committed to taking the necessary steps needed to protect and improve the lives and livelihoods of all Americans.

Appendix

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.

- PPP 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 childcare 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 antivirals; 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 of 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: PPP 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 PPP.
- 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).

Phase 4: Consolidated Appropriations Act (P.L. 116-260), Divisions M and N

In total, provided $868 billion in additional funding for small businesses, individuals, state and local governments, and vaccinations. Highlights include:

- Additional funds for the PPP, including a provision for the deductibility of expenses paid for by PPP loans.
- Additional funds for SBA EIDL Advances (grants).
- Small business funds for businesses in low-income communities.
- Emergency grants for live music venues, movie theaters and museums.
- Additional funds for a $600 Economic Impact Payment, available for most Americans with adjusted gross incomes below $75,000.
- Extensions of increased Federal unemployment benefits for an additional 11 weeks, including an additional $300 per week until mid-March
- Additional funds for education, including grants for K-12 education, higher education (including for HBCUs and for-profit college financial aid), and funds for the Governor's Emergency Education Relief Fund.
- Funding to States for testing, tracing and COVID mitigation.

- Funding to States and the CDC to assist with vaccine procurement and distribution, including building a strategic stockpile.
- Other health funding, including for mental health, additional health care provider grants, an increase in the physician pay schedule, and a repeal of the Medicare sequester through March 2021.
- Additional funds for a second round of payroll support for airline workers.
- Funding to States for transit infrastructure and State highway funding.
- Grants and funding to additional public transit providers, such as buses, ferries, airports, and Amtrak.
- Additional funds to expand and increase nutrition and agriculture programs, including a 15 percent increase in monthly SNAP benefits through the end of June 2021 and direct payments to the farming and ranching industry.
- Funds to States to continue to provide rental assistance programs, which also includes rent arrears, utilities, and home energy costs. There is also an extension of the eviction moratorium for tenants with annual incomes below $99,000 to the end of January 2021.
- Funds to support the Child Care Development Block Grant program.
- Support for community lenders, including through Community Development Block Grants.
- Funds to provide grants and investment in broadband technology to support remote learning.
- An amendment to financial support for the U.S. Postal Service provided in the CARES Act.
- An extension and expansion of the Employee Retention Tax Credit.
- A reinstatement of the 100 percent deductibility of business meals for 2021 and 2022.
- An increase in the Earned Income and Child Tax Credit, facilitated by allowing taxpayers to use their 2019 income if they experienced job loss in 2020.
- An extension of the Families First paid leave credits through March 2021.
- Extensions of The CARES Act provisions for charitable donations and employer-paid student loan exclusions.
- Included in this package was a reduction in previous budget authority, which offsets new budget authority for Divisions M and N of this Act.

Phase 5: American Rescue Plan Act of 2021 (P.L. 117-2)

In total, the ARP provided $1.9 trillion for supporting individuals, households, businesses, and various public health measures. Highlights include:

- Funding to support the food supply-chain and agriculture pandemic response.
- Funding to state, local, and tribal governments to bridge budget shortfalls.
- Direct payments for individuals earning up to $75,000 per year and couples earning up to $150,000 per year.
- Extension of an additional $300 per month in unemployment insurance benefits through September 6th, 2021.
- A temporary expansion of the child tax credit, including monthly payment through the end of 2021.
- A tax credit available to employers who offer paid sick leave and paid family leave benefits through the end of fiscal year 2021.
- Additional $7.25 billion in funds for supporting small-businesses in the form of the Paycheck Protection Program.

- Grants to state educational agencies and institutions of higher education, including funds directed to a Child Care & Development Block Grant program.
- A provision to make any student loan forgiveness passed between Dec. 31, 2020, and Jan. 1, 2026, tax-free — rather than having the forgiven debt be treated as taxable income.
- Funding for the Low-Income Home Energy Assistance Program, known as LIHEAP, to help families with home heating and cooling costs.
- Funding to temporarily boost the value of cash vouchers for the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) up to $35 per month for women and children for a four-month period during the pandemic.
- Funding for programs authorized under the Older Americans Act, including support for nutrition programs, community-based support programs and the National Family Caregiver Support Program.
- Allocation of $37 million to the Commodity Supplemental Food Program for low-income seniors.
- Allocation of $7.5 billion to track, administer and distribute COVID-19 vaccines.
- Another $46 billion will go toward diagnosing and tracing coronavirus infections, and $2 billion will go toward buying and distributing various testing supplies and personal protective equipment.
- Funding for specific industries, including to the Small Business Administration to support "restaurants and other food and drinking establishments," as well as funds for the Shuttered Venue Operators Grant
- Funding for the Small Business Administration EIDL program, with some funds prioritized for businesses with fewer than 10 employees.
- Funding to support the transportation sector, including allocations for transit, airports, and temporary payroll support for the aerospace manufacturing industry.
- Allocation of funds for emergency rental assistance, including $5 billion for emergency housing vouchers for people experiencing homelessness, survivors of domestic violence and victims of human trafficking.
- Funding to preserve the solvency of multiemployer pension funds.
- Cybersecurity funding to be used for technology modernization.

References

Alon, T., M. Doepke, J. Olmstead-Ramsey, and M. Tertilt. 2020. *The Impact of COVID-19 on Gender Equality*. NBER Working Paper 26947. Cambridge, MA: National Bureau of Economic Research.

Altonji, J., Z. Contractor, L. Finamor, R. Haygood, I. Lindenlaub, C. Meghir, C. O'Dea, D. Scott, L. Wang, and E. Washington. 2020. *Employment Effects of Unemployment Insurance Generosity During the Pandemic.* Tobin Center for Economic Policy. New Haven, CT: Yale University.

Altonji, J. and N. Williams. 2005. "Do Wages Rise with Job Seniority? A Reassessment." *ILR Review* 58, no. 3: 370-397.

Alvarez, F., D. Argente, and F. Lippi. 2020. *A Simple Planning Problem for COVID-19 Lockdown*. BFI Working Paper. Chicago, IL: Becker Friedman Institute.

Angrist, J. D. and A. B. Krueger. 1992. *Estimating the Payoff to Schooling Using the Vietnam-Era Draft Lottery.* NBER Working Paper 4067. Cambridge, MA: National Bureau of Economic Research.

Autor, D., D. Cho, L. D. Crane, M. Goldar, B. Lutz, J. Montes, W. B. Peterman, D. Ratner, D. Villar, A. Yildirmaz. 2020. *An Evaluation of the Paycheck Protection Program Using Administrative Payroll Microdata*. Working Paper.

Baqaee, D.R. and E. Farhi. 2020. "Nonlinear Production Networks with an Application to the COVID-19 Crisis." CEPR Discussion Paper No. DP14742. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3603974.

Baker, S., N. Bloom, S. Davis, and S. Terry. 2020. *Covid-Induced Economic Uncertainty*. NBER Working Paper 26983. Cambridge, MA: National Bureau of Economic Research.

Bartik, A., M. Bertrand, F. Lin, J. Rothstein, and M. Unrath. 2020a. *Measuring the Labor Market Onset of the COVID-19 Crisis*. BFI Working Paper No. 2020-83. Chicago, IL: Becker Friedman Institute.

Bartik, A., Z. Cullen, E. Glaeser, M. Luca, C. Stanton, and A. Sunderam. 2020b. *The Targeting and Impact of Paycheck Protection Program Loans to Small Businesses*. NBER Working Paper 27623. Cambridge, MA: National Bureau of Economic Research.

Bhuller, M., M. Mogstad, K. G. Salvanes. 2017. "Life-Cycle Earnings, Education Premiums, and Internal Rates of Return." Journal of Labor Economics 35, no. 4: 993-1030.

Bureau of Economic Analysis. 2021. "COVID-19 and Recovery: Estimates From Payment Card Transactions" https://www.bea.gov/recovery/estimates-from-payment-card-transactions

Burns, A., D. van der Mensbrugghe, and H. Timmer. 2006. "Evaluating the Economic Consequences of Avian Influenza." World Bank. https://web.worldbank.org/archive/website01003/WEB/IMAGES/EVALUATI.PDF.

CBO (Congressional Budget Office). 2020. "The Effects of Pandemic-Related Legislation on Output." https://www.cbo.gov/publication/56597.

CEA (Council of Economic Advisers). 2020. "Evaluating the Effects the Economic Response to COVID-19." https://www.whitehouse.gov/wp-content/uploads/2020/08/Evaluating-the-Effects-of-the-Economic-Response-to-COVID-19.pdf.

CEA (Council of Economic Advisers). 2019. “Government Employment and Training Programs: Assessing the Evidence on Their Performance.” https://www.whitehouse.gov/wp-content/uploads/2019/06/Government-Employment-and-Training-Programs.pdf.

CEA (Council of Economic Advisers). 2019. “Mitigating the Impact of Pandemic Influenza through Vaccine Innovation.” https://www.whitehouse.gov/wp-content/uploads/2019/09/Mitigating-the-Impact-of-Pandemic-Influenza-through-Vaccine-Innovation.pdf.

Chetty, R., J. Friedman, N. Hendren, and M. Stepner. 2020. *How Did COVID-19 and Stabilization Policies Affect Spending and Employment? A New Real-Time Economic Tracker Based on Private Sector Data.* Working Paper 2020-05. Cambridge, MA: Opportunity Insights.

Chetty, R., J. N. Friedman, N. Hendren, M. Stepner, and the Opportunity Insights Team. 2020. “How Did COVID-19 and Stabilization Policies Affect Spending and Employment? A New Real-Time Economic Tracker Based on Private Sector Data.” https://opportunityinsights.org/wp-content/uploads/2020/05/tracker_paper.pdf.

Coibion, O., Y. Gorodnichenko, and M. Weber. 2020. “The cost of the covid-19 crisis: Lockdowns, macroeconomic expectations, and consumer spending.” NBER Working Paper 27141. Cambridge, MA: National Bureau of Economic Research.

Eichenbaum, M., S. Rebelo, and M. Trabandt. 2020. *The Macroeconomics of Epidemics.* NBER Working Paper 26882. Cambridge, MA: National Bureau of Economic Research.

Fairlie, R.W., K. Couch, and H. Xu. 2020. *The Impacts of Covid-19 on Minority Unemployment: First Evidence from April 2020 CPS Microdata*. NBER Working Paper 27246. Cambridge, MA: National Bureau of Economic Research.

Faulkender, M., R. Jackman, and S. Miran. 2020. *The Job-Preservation Effects of Paycheck Protection Program Loans*. Treasury Office of Economic Policy Working Paper 2020-01. Washington, DC: The Department of the Treasury.

GAO (Government Accountability Office). 2020. “Urgent Actions Needed to Better Ensure an Effective Federal Response.” https://www.gao.gov/reports/GAO-21-191/.

JHU (Johns Hopkins University). 2020. “COVID-19 United States Cases by County.” https://coronavirus.jhu.edu/us-map.

Jonas, O. 2013. “Pandemic Risk.” Background paper, World Bank. https://www.worldbank.org/content/dam/Worldbank/document/HDN/Health/WDR14_bp_Pandemic_Risk_Jonas.pdf.

Klien, A., Smith, E. 2020. “Explaining the economic impact of COVID-19: Core industries and the Hispanic workforce.” *Middle Class Memos*. Brookings. https://www.brookings.edu/research/explaining-the-economic-impact-of-covid-19-core-industries-and-the-hispanic-workforce/

Kilbourne, E.D. 2006. “Influenza Pandemics of the 20th Century.” *Emerging Infectious Diseases* 12, no. 1: 9-14.

Marinescu, I. E., D. Skandalis, and D. Zhao. 2020. *Job Search, Job Posting and Unemployment Insurance During the COVID-19 Crisis.* Working Paper.

Markel, H., H. Lipman, J. Navarro, A. Sloan, J. Michalsen, A. Stern, and M. Cetron. 2007. "Nonpharmaceutical Interventions Implemented by US Cities During the 1918-1919 Influenza Pandemic." *Jama* 298, no. 6: 644-654.

McKibbin, W. 2009. "The Swine Flu Outbreak and Its Global Economic Impact." https://www.brookings.edu/on-the-record/the-swine-flu-outbreak-and-its-global-economic-impact/#:~:text=Fearing%20this%20outbreak%20may%20lead,a%20lack%20of%20public%20confidence.

McKibbin, W., and A. Sidorenko. J. 2006. "Global Macroeconomic Consequences of Pandemic Influenza." Lowy Institute for International Policy. https://www.lowyinstitute.org/sites/default/files/pubfiles/McKibbin_Sidorenko%2C_Global_macroeconomic_1.pdf.

Neilson, C., J. Humphries, and G. Ulyssea. 2020. *Information Frictions and the Paycheck Protection Program*. NBER Working Paper 27624. Cambridge, MA: National Bureau of Economic Research.

Parolin, Z., M.A. Curran, J. Matsudaira, J. Waldfogel, and C. Wimer. 2020. *Monthly Poverty Rates in the United States during the COVID-19 Pandemic*. Poverty and Social Policy Working Paper.

Parolin, Z., M.A. Curran, and C. Wimer. 2020. "The CARES Act and Poverty in the COVID-19 Crisis." *Poverty and Social Policy Brief,* 4 no. 8.

Ruhle, Stephanie, Leticia Miranda and Michael Capetta. "PPP likely saved 35 million jobs, says JP Morgan CEO Jamie Dimon." *NBC News*, Aug 11, 2020. Accessed at https://www.nbcnews.com/business/economy/ppp-likely-saved-35-million-jobs-says-jpmorgan-chase-ceo-n1236341 .

U.S. Census Bureau. 2020. "Small Business Pulse Survey Data." https://portal.census.gov/pulse/data/#downloads.

U.S. Census Bureau. 2020. "Household Pulse Survey Data." https://www.census.gov/programs-surveys/household-pulse-survey/data.html.

Verikios, G., M. Sullivan, P. Stojanovski, J. Giesecke, and G. Woo. 2011. "The Global Economic Effects of Pandemic Influenza." https://static.rms.com/email/documents/liferisks/papers/the-global-economic-effects-of-pandemic-influenza.pdf.