

Evaluating the Effects of the Economic Response to COVID-19

The Council of Economic Advisers
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Executive Summary

In response to the COVID-19 pandemic, the U.S. Federal government acted with unprecedented scale, speed, and coordination, surpassing past efforts to mitigate previous crises. The Council of Economic Advisers finds that these historic policy responses, coupled with a strong pre-pandemic economy, ameliorated a stark economic contraction while improving expectations for a recovery in 2021 and protecting the economic well-being of the Nation's most vulnerable households and industries.

In particular, measures designed to maintain employer-employee matches, most notably the Paycheck Protection Program (PPP), have helped stabilize labor markets and facilitated recovery by allowing firms to retain workers and to rehire them as conditions improve. As a result, an estimated 80.6 percent of layoffs are likely to be temporary rather than permanent. Coupled with other relief provisions, these measures have likely helped avert small business bankruptcies from April to June from a predicted spike of 154.9 percent to a decrease of 1.8 percent year-over-year. Small business bankruptcies in these months were even below February and March levels, counter to expectations given the dire state of the labor market. Total Chapter 7 bankruptcy filings for consumers and businesses are down 13 percent from October 2019 to July 12, 2020, compared with the same period a year ago, with nearly all the decrease occurring since the end of February. In addition to the PPP, the U.S. Department of Agriculture's Coronavirus Food Assistance Program provided \$16 billion in direct payments to suffering farmers, which the CEA finds stabilized forecasts for net farm incomes.

The CEA further finds that income replacement and cost mitigation cushioned the shock to household incomes, as disposable income increased 5.4 percent starting in February, largely due to expanded unemployment insurance (UI) and economic recovery rebates. Low-income households benefited the most from these measures. Economic recovery rebates were sufficient to keep a family of four out of poverty for 1.5 months—even if they lost all other income. Moreover, households in the bottom 10 percent of the income distribution received enough assistance, on average, to replace 2.8 months of income per household. Without these provisions under the Coronavirus Aid, Relief, and Economic Security (CARES) Act, a household at the 10th percentile of the income distribution would have experienced a 13 percent reduction in income in March and April 2020 compared with its February 2020 level. However, because of expanded UI and the one-time checks, these households' monthly income was 165 percent (\$1,901) higher in April and 14 percent (\$157) higher in May compared with February 2020. UI helped the most vulnerable workers; those industries that were hardest hit by COVID-induced shutdowns saw the largest share of workers receiving higher compensation from UI than from employment. More than 9 in 10 workers in the accommodation and food services industry, which lost 3.9 million jobs from February to June, were eligible to receive more from UI benefits than from working. In the retail trade industry, which lost 1.3 million jobs from February to June, nearly 83 percent of workers could receive more from UI benefits than from working.

Throughout the pandemic, current evidence suggests that borrowers have been able to find various forms of loan relief. Consumer debt and credit indicators have not yet shown the deterioration expected, given the unprecedented loss of private income experienced by households. Severe delinquency rates remain low or have fallen across all types of debt, possibly due to an increase in loan accommodations, most drastically for student loans. Bank card balances also fell, while lenders have kept credit limits constant, in contrast to when they cut credit limits during the Great Recession. Even so, these early indicators have the potential to change rapidly.

Finally, the CEA finds that additional measures to stabilize financial markets—including loan forbearance, as well as the unparalleled provision of liquidity by the Federal Reserve, augmented by the Department of the Treasury under the CARES Act—effectively alleviated emerging stresses in credit markets, averting a financial crisis such as that observed in 2008–9.

It is important to note that the results presented in this report are current as of the middle of July 2020. As we obtain new data, we will continue to update the report and monitor the recovery. However, it does appear as of now that the increase in transfer payments resulting in a marked increase in personal income and savings, and the expanded liquidity measures aimed at firms, will likely provide a buffer to households and businesses for the next few months, allowing them to weather the worst of the crisis.

Introduction

Beginning in February 2020, the United States experienced its worst macroeconomic shock since the 1930s.¹ As a direct result of the arrival of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and consequent measures to contain and mitigate viral transmission, real output was on pace to contract by as much as 8 percent in 2020,² marking the worst economic contraction since 1932. With the S&P 500 index facing its worst decline since the financial crisis of 2008–9 from February 19 to March 23 (–33.9 percent), the median private sector forecaster was projecting that unemployment would reach 19.0 percent in May 2020, its highest level since the Great Depression and almost twice its peak in the aftermath of the 2008–9 crisis.

In the face of this exogenous economic shock of historically unprecedented scale and speed, the U.S. Federal government responded with equally unprecedented scale and speed. Within a week of the first reported COVID fatality, Congress passed, and President Trump signed into law, the Coronavirus Preparedness and Response Supplemental Appropriations Act. Within four weeks, Congress passed, and the President signed into law, two further pieces of legislation, including the CARES Act, which provided \$2.2 trillion in direct financial support to American firms, households, medical establishments, and State and local governments. At the same time, the Federal Reserve expanded its balance sheet by more than \$3 trillion to ensure sufficient liquidity in financial markets.

In this report, the CEA finds that the historic policy responses 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 employer-employee relationships, most significantly the Paycheck Protection Program (PPP), played a key role in allowing firms to retain workers on leave. By limiting eligibility to small and medium-sized enterprises, PPP targeted this aid to those employers most at risk of having to terminate employees. PPP may thus have helped avert bankruptcies as well by giving employers the economic cushion they needed to weather the economic fallout of COVID-19.

The CEA also finds that income replacement and cost mitigation helped to cushion the shock to household incomes and thereby facilitated a stabilization and recovery in consumer spending, which alone constitutes 70 percent of the U.S. economy. In particular, expanded unemployment insurance and pandemic assistance benefits, as well as rebate checks for households earning below set thresholds, largely offset coincident declines in household compensation as a result of economic shutdowns. The CEA finds 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.

¹ This report reflects data available as of the week of July 13, 2020.

² In May, the average of the 10 most pessimistic forecasters from the Blue Chip Panel was 8.2 percent.

Finally, the CEA finds that additional measures to stabilize financial markets—including loan forbearance for student loans and mortgage payments, as well as the unprecedented provision of liquidity by the Federal Reserve, augmented by the Department of the Treasury under the auspices of the CARES Act—effectively alleviated emerging stresses in credit markets. By mitigating the transmission of a real economic shock to credit markets, Federal responses to COVID-19 may have helped in averting a situation, such as observed in 2008–9, in which financial markets amplified the macroeconomic effects of the adverse hit to real output.

We begin, in chapter 1, by documenting the timeline of the COVID-19 shock and associated public health responses, noting that at the peak of the 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, including comparisons with past economic and financial crises. We then proceed, in chapter 2, to analyze the effects of the CARES Act on halting the deterioration in the outlook for output and unemployment, as well as attenuating predicted small business bankruptcy filings and adverse shocks to household incomes, particularly at the lower end of the income distribution.

In chapters 3 and 4, we examine in greater detail specific provisions of the CARES Act and contemporaneous policy measures to stabilize labor and capital markets. First, we estimate income replacement by income percentile and sector, further documenting the targeted nature of income replacement toward lower-income deciles and sectors. Second, we similarly quantify the distribution of PPP lending among firms, demonstrating that PPP aid skewed toward smaller firms and loan amounts. Third, we more closely evaluate the impact of fiscal and monetary interventions on averting small business bankruptcies and credit market disruptions more generally.

We conclude by situating the fiscal and monetary responses to the COVID-19 shock within its historical context, in particular relative to the economic crisis of 2008–9 and attendant policy responses. We find that along multiple dimensions, the magnitude and speed of the economic shock adversely affecting the U.S. economy in 2020 exceeded that of the 2008–9 financial crisis, and likely constituted the most severe economic shock since the 1930s. We further document that both the speed and scale of the response to that shock were historically unprecedented, and were furthermore targeted toward firms and households most vulnerable to adverse income disruptions. This may have helped alleviate the magnitude of the shock for households and firms, at least in the short run. As the Nation’s economy recovers slowly from this crisis, it is imperative that we continue to monitor the health of households and businesses to ensure that all necessary steps continue to be taken to get the country back on track.

CHAPTER 1

Origins of the COVID-19 Pandemic, Economic Impact, and Policy Timeline

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 Wuhan, a travel hub city in China.³ 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.⁴ By late-February, the Centers for Disease Control and Prevention (CDC) had confirmed the first possible instance of community transmission in the United States, and the S&P 500 had begun a sharp sell-off that continued through March 23, losing 33.9 percent of its value compared with its peak just before the outbreak.⁵

The Trump Administration responded by promptly putting in place nonpharmaceutical intervention policies to contain the virus.⁶ Travel restrictions on China were imposed on January 31, and the restrictions were subsequently expanded to 26 countries in Europe and several other countries by mid-March.⁷ On March 13, President Trump declared COVID-19 a national emergency.⁸ 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, Statewide 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, with an additional 13 States having issued these 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.⁹

³ 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).

⁴ 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; see <https://www.cdc.gov/media/releases/2020/p0121-novel-coronavirus-travel-case.html>.

⁵ The first case of COVID-19 with no prior travel to infected regions was confirmed by the CDC; see <https://www.cdc.gov/media/releases/2020/s0226-Covid-19-spread.html>.

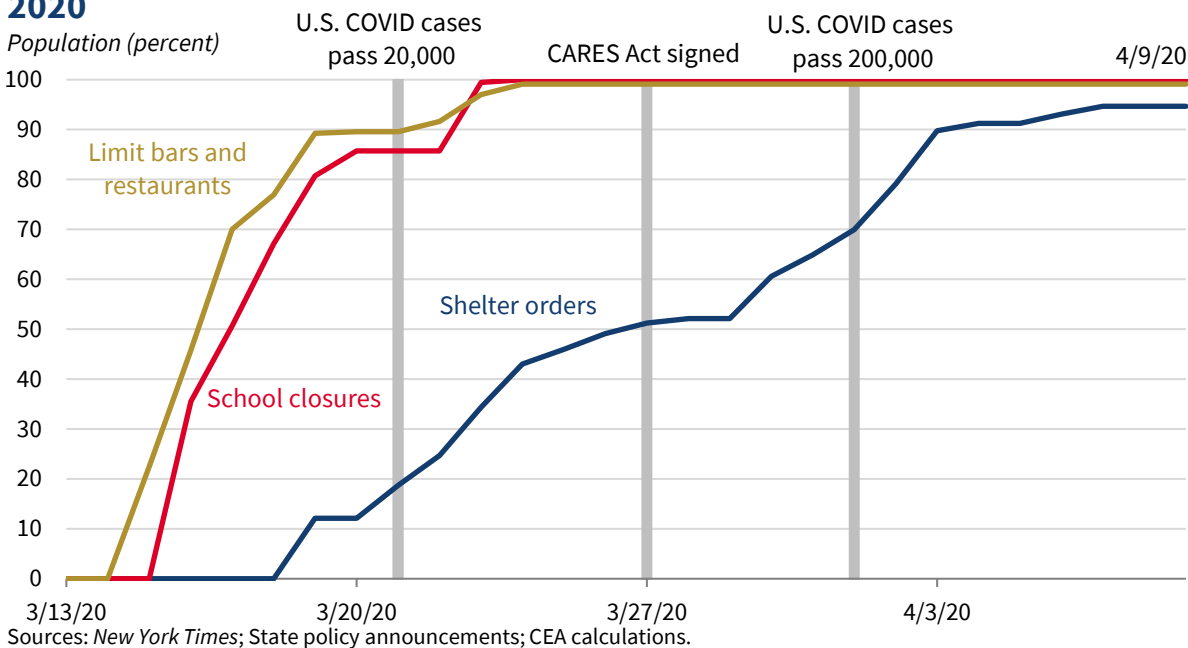
⁶ The CDC defines nonpharmaceutical interventions as actions, apart from vaccination and taking medicine that people and communities can take to slow the spread of illnesses like the COVID-19 pandemic.

⁷ Proclamation on suspending non-U.S. citizen travelers from China; see <https://www.whitehouse.gov/presidential-actions/proclamation-suspension-entry-immigrants-nonimmigrants-persons-pose-risk-transmitting-2019-novel-coronavirus/>. With respect to the expansion of the travel ban to the Schengen Area, see <https://www.whitehouse.gov/presidential-actions/proclamation-suspension-entry-immigrants-nonimmigrants-certain-additional-persons-pose-risk-transmitting-2019-novel-coronavirus/>.

⁸ COVID-19 declared a national emergency; see <https://www.whitehouse.gov/presidential-actions/proclamation-declaring-national-emergency-concerning-novel-coronavirus-disease-covid-19-outbreak/>.

⁹ After the Administration's efforts to inform the American public, States began introducing restrictive mandates and regulations dictating protective behavior. The CEA finds that 67 to 100 percent of the observed total increases in a variety of protective behaviors appears to have been driven by the American people's voluntary decisions and

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



Studies of the economic impact of past pandemics have indicated that there are three main channels through which pandemics affect economic activity:¹⁰ (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.”¹¹ 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.¹² Consumers also

the Administration’s efforts to encourage these voluntary decisions, and only 33 percent to be accounted for by restrictive State mandates.

¹⁰ Jonas (2013); Kilbourne (2006); Burns, van der Mensbrugghe, and Timmer (2006); Verikios et al. (2011); McKibbin and Sidorenko (2006); CEA (2019); McKibbin (2009).

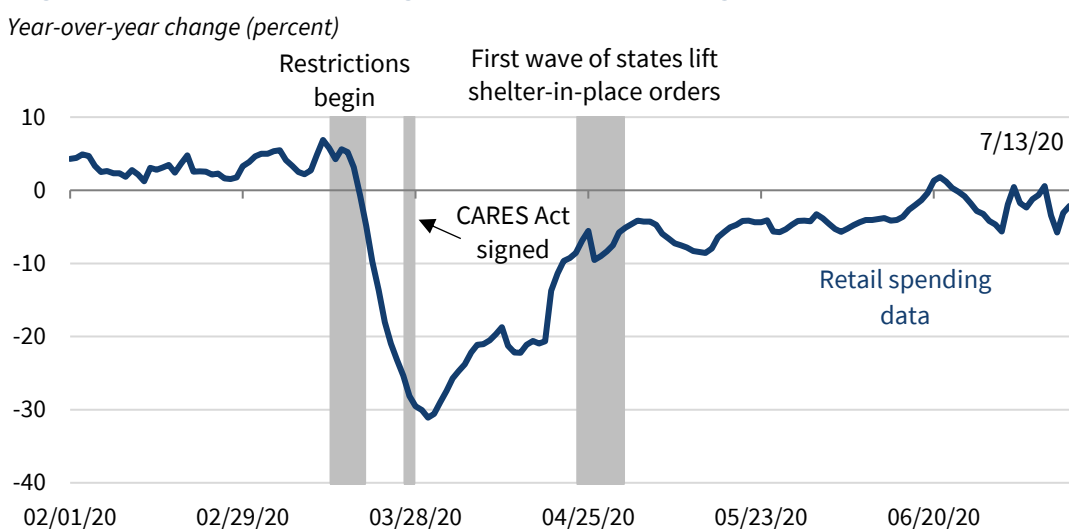
¹¹ For example, on March 11 (before President Trump’s announcement of COVID-19 as a national emergency), the NBA had already suspended basketball games indefinitely. The following day, Major League Baseball delayed the start of its season, the National Hockey League suspended games, and March Madness was canceled.

¹² 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.

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 -30 percent year-over-year growth rate at the end of March, and has since recovered to slightly above zero percent growth in June (see figure 2). Daily traffic congestion (figure 3) and seated diners (figure 4) 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. However, recent surges in cases have led seated diners to plateau at about 60 percent below 2019 levels nationwide. Similarly, weekly hotel occupancy had dropped 56 percent year-over-year in the week these measures began, and has continued to recover since mid-April (see figure 5).

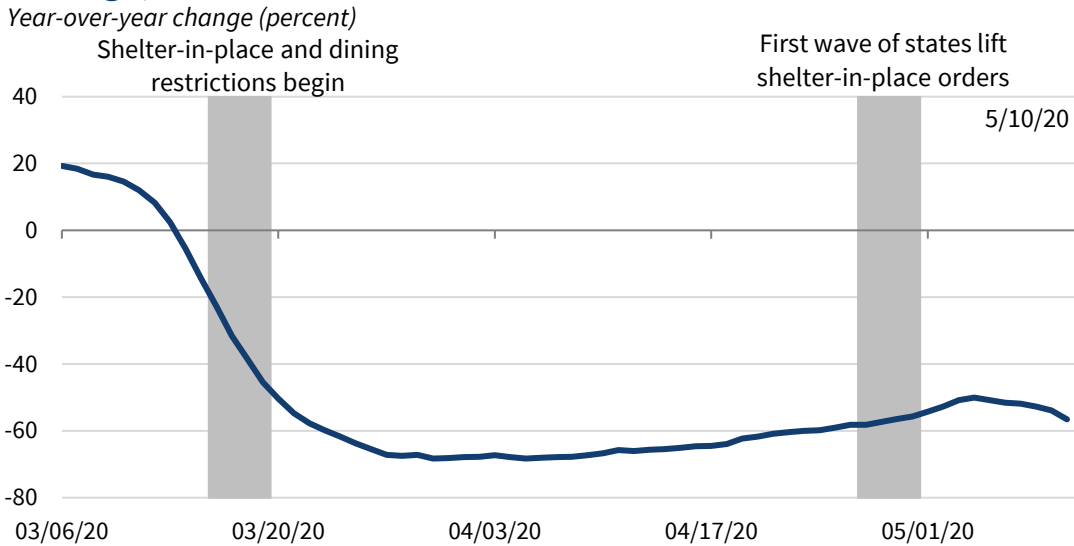
Figure 2. Retail Spending, Seven-Day Average, 2020



Source: Proprietary spending data.

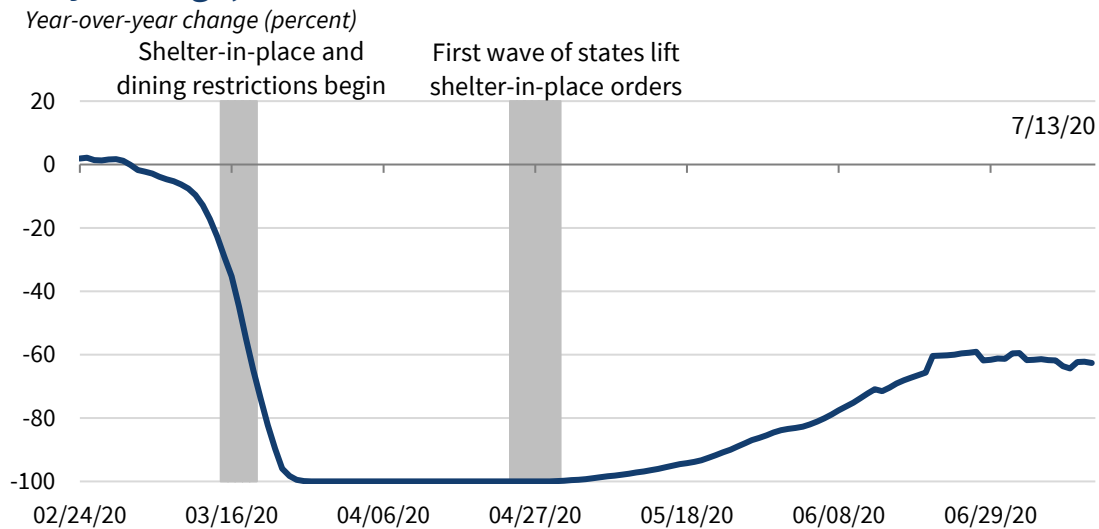
Note: "Restrictions" refer to shelter-in-place and dining restrictions. The CARES Act was signed into law on March 27, 2020.

Figure 3. Traffic Congestion, Median Across All States, Seven-Day Average, 2020



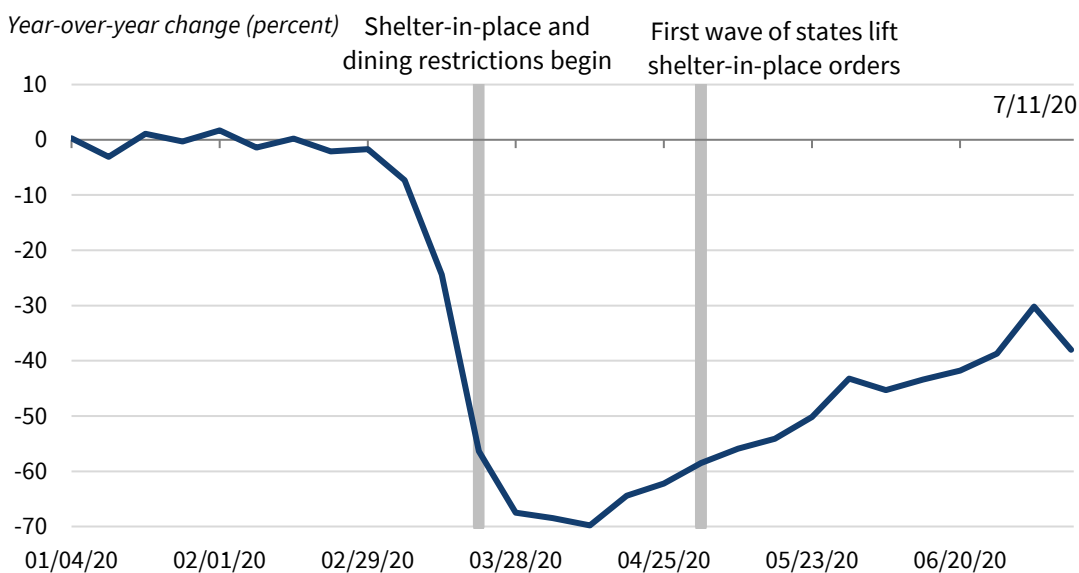
Sources: TomTom; Exante; CEA calculations.

Figure 4. OpenTable Seated Restaurant Diners in the U.S., Seven-Day Average, 2020



Sources: OpenTable; *New York Times*; CEA calculations.

Figure 5. Weekly U.S. Hotel Occupancy Rate, 2020



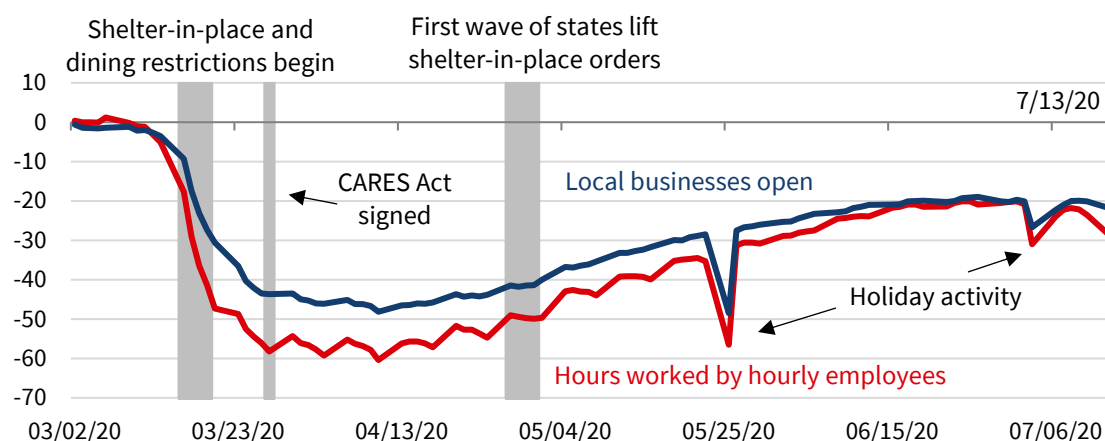
Sources: STR data; CEA calculations.

Supply indicators—the number of small businesses opened, number of hourly employees working, and number of hours worked—also saw the steepest year-over-year contraction in March and April. Figure 6 illustrates how these indicators compared with a January pre-COVID-19 baseline, as reported by Homebase.¹³ 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 to 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 July 13, employees working at small businesses using Homebase are about 25 to 30 percent below normal conditions.

¹³ 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 cover 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 beverages, retail and services.

Figure 6. 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 January 4, 2020, to January 31, 2020.

As the indicators discussed above show, the restrictions on mobility and the shift toward social distancing played a major role in defining the state of economic activity. As restrictions have eased, and the move toward 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.

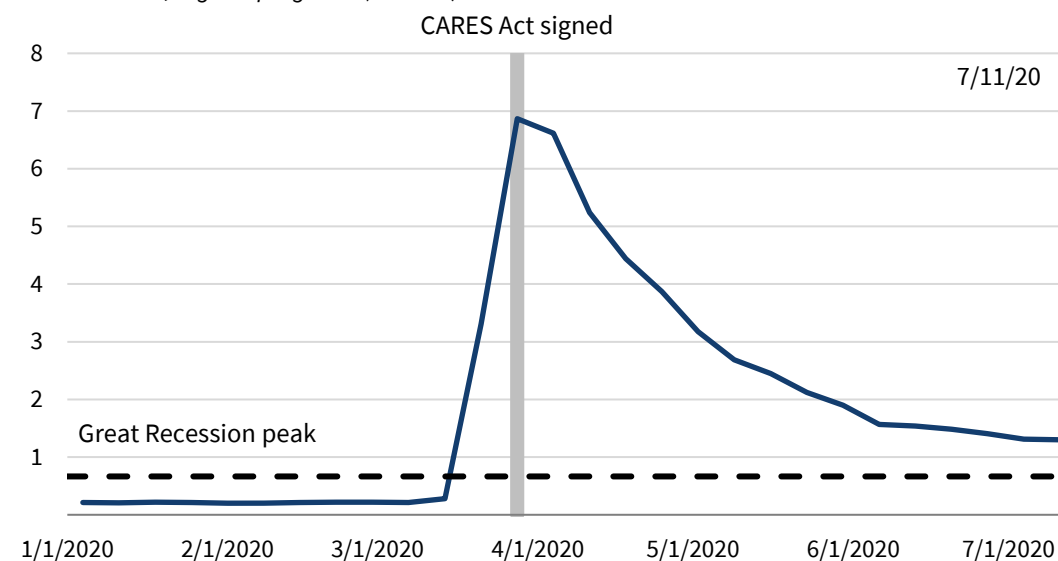
Comparison with Earlier Shocks

While the long-term effects of COVID-19 on the economy are uncertain and depend on how the disease 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 affect 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 (figure 7). This recent 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 precrisis levels. Weekly initial UI claims remained high but steadily decreased throughout the following months, with the total number of individuals receiving 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 (figure 8). These unemployment numbers do not include individuals receiving assistance through the Pandemic Unemployment Assistance (PUA) in the CARES Act. Although the unemployment rate reached 14.7 percent in April, the highest rate since official data were first collected in 1948, unemployment declined to 13.3 percent in May despite expectations of an increase and continued to fall to 11.1 percent in June, marking the two largest over-the-month drops in the

series' history. In particular, we estimate that 80.6 percent of the increase in unemployment from February to May was likely due to temporary rather than permanent layoffs, after accounting for workers who should have been counted as temporarily laid off rather than employed but not at work and adding in workers who are newly out of the labor force but want a job. Still, the shock to the labor market was unprecedented, and the unemployment rate remains above the Great Recession high of 10.0 percent in October 2009.

Figure 7. Initial Unemployment Insurance Claims by Week, 2020

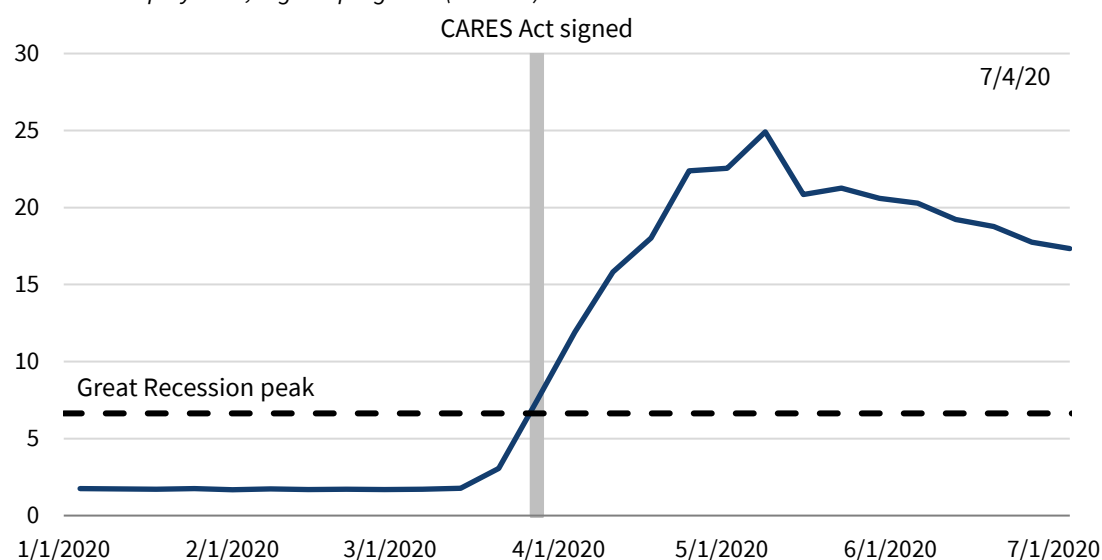
Initial UI claims, regular programs (millions)



Sources: Department of Labor; CEA calculations.

Figure 8. Insured Unemployment by Week, 2020

Insured unemployment, regular programs (millions)



Sources: 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. While the advance estimate for gross domestic product (GDP) in the second quarter of 2020 will not be released until July 30, in the first quarter GDP fell at an annualized rate of 5.0 percent and forecasters predict that the COVID-19 pandemic and containment measures have dealt the economy a significant blow. The Organization for Economic Cooperation and Development (OECD) estimates that the COVID-19 pandemic and containment measures will decrease U.S. real GDP by 7.3 percent in 2020 in the absence of a second wave in the fall (single-hit scenario), or 8.5 percent if such a wave does occur (double-hit scenario). This forecast is more pessimistic than those provided by the Congressional Budget Office (CBO) and the Blue Chip survey of the private sector (table 1). Still, all forecasts expect the initial effect to be more comparable to the 8.6 percent decline in GDP at the onset of the Great Depression in 1930 than the more modest 0.1 percent decline experienced in 2008 at the onset of the Great Recession (figure 9). Many 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, U.S. GDP is presently projected to rebound the following year, with the OECD projecting 4.1 or 1.9 percent growth in 2021 in the single- and double-hit scenarios, respectively. The estimates from the private sector (4.0 percent) and the CBO (4.8 percent) are much more in line with the single-hit scenario. As a result, the level of GDP in 2021 would fall below pre-COVID levels to about the level of GDP seen in 2018. This is consistent with the OECD single-hit, CBO, and private sector estimates, but in the case of a double-hit scenario, the OECD estimates that GDP would fall near the level of GDP in 2016. Most forecasters do not provide predictions of GDP growth in 2022. However, based on the initial decline and rebound predicted by the OECD, an annualized 3.6 percent growth rate would return GDP to pre-COVID-19 levels by 2022 in the single-hit scenario or 2023 in the double-hit scenario, while the more optimistic CBO and Blue Chip forecasts suggest that GDP could return to pre-COVID-19 levels by 2022 if growth is at least 1.7 percent.

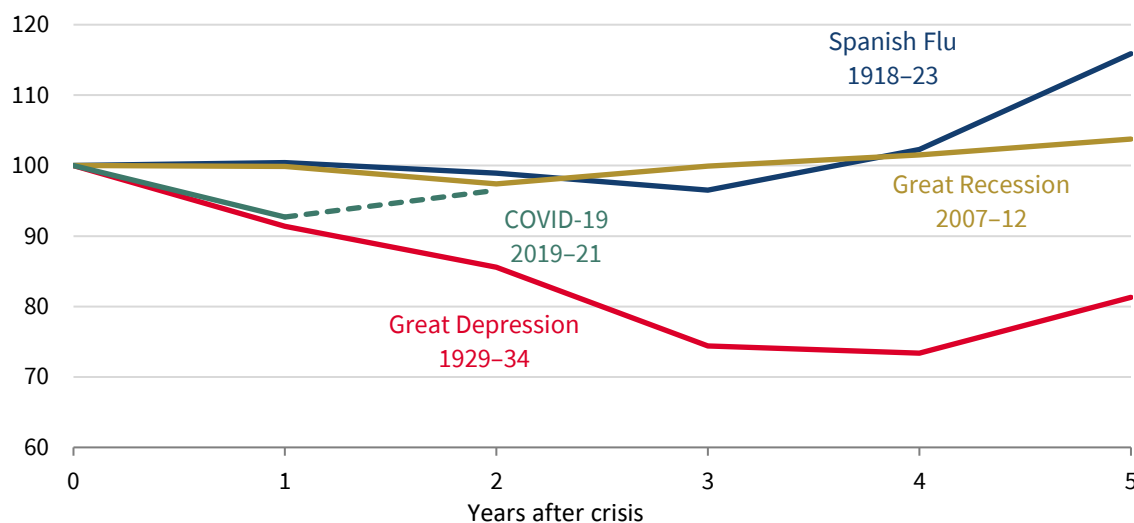
The recession induced by COVID-19 is fundamentally different from the Great Recession and the Great Depression because it had a noneconomic cause. The closest epidemiological analogue, the 1918 Spanish Flu, had a much smaller effect on GDP, with growth rates of 0.4 percent and -1.5 percent in 1919 and 1920, respectively. Further comparisons with 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. In terms of the public health response, the nonpharmaceutical interventions in 1918 and 1919 were in many ways similar to those of today.

Action was primarily taken at the local rather than the national level, with cities as the primary actors. In an analysis of 43 cities' responses, Markel and others (2007) find that all cities adopted some form of intervention, including 79 percent that implemented concurrent school closures and bans on public gatherings. This combination of policies was in place for between 1 and 10 weeks, with a median duration of 4 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 9. GDP Recovery from Previous Crises

Real GDP (percent of precrisis baseline)



Sources: FRED; HISTSTAT; OECD; CEA calculations.

Note: Dotted line represents the OECD GDP forecast for a single-hit scenario.

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

Event	First year considered	Real GDP growth	
		Year 1	Year 2
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	–5.9%	4.8%
COVID-19 (Blue Chip consensus forecast)	2020	–5.5%	4.0%
COVID-19 (OECD single hit scenario)	2020	–7.3%	4.1%
COVID-19 (OECD double hit scenario)	2020	–8.5%	1.9%

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

CHAPTER 2

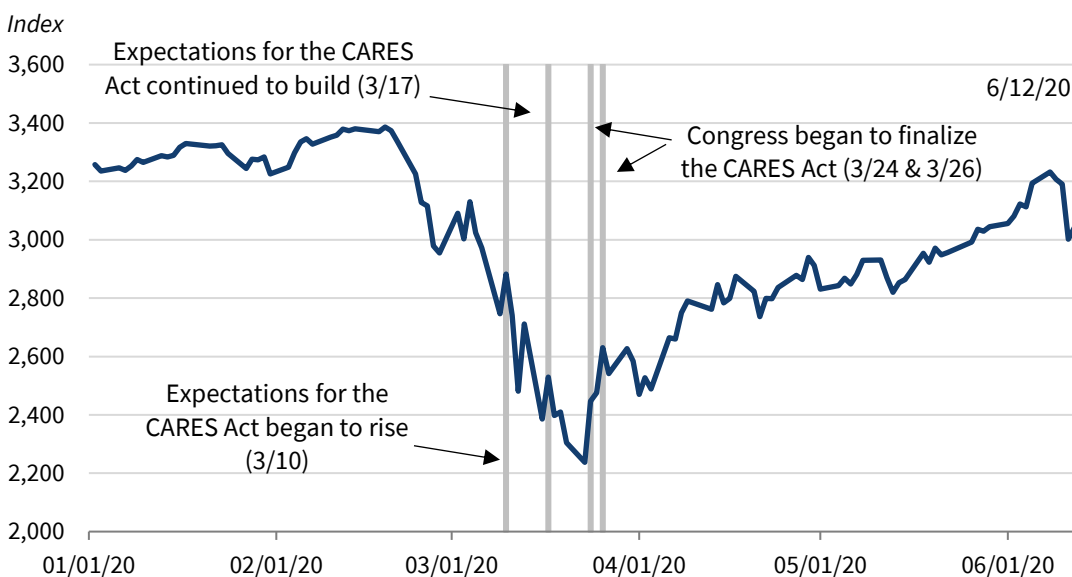
The Effect of the CARES Act on Averting Bankruptcies, Sustaining GDP, and Aiding Low-Income Households

The preceding chapter shows that the immediate U.S. economic losses of COVID-19 were concentrated in 2020:Q2, 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. Evidence presented in this chapter suggests that the timely Federal response to provide liquidity to households and firms through the prompt passage of the CARES Act mitigated the damage to GDP and ultimately the livelihoods of all Americans.

Impact on the Stock Market and GDP

To the extent that stock market valuations reflect the present value of firms' expected future net earnings, the reaction of the S&P 500 index to news about the CARES Act suggests that the markets expected the law to have a significant and positive impact on the U.S. economic outlook. Figure 10 shows the S&P 500 index with highlights on days when movement in the market was driven by news about the CARES Act. The declining trend that started as a result of the COVID-19 outbreak began a reversal on the day that Congress began to finalize the CARES Act. In the week that the bill was passed, the market capitalization value of the S&P 500 rose by \$2.6 trillion, or 13.3 percent, between March 23 and March 27.

Figure 10. S&P 500 and the CARES Act, 2020



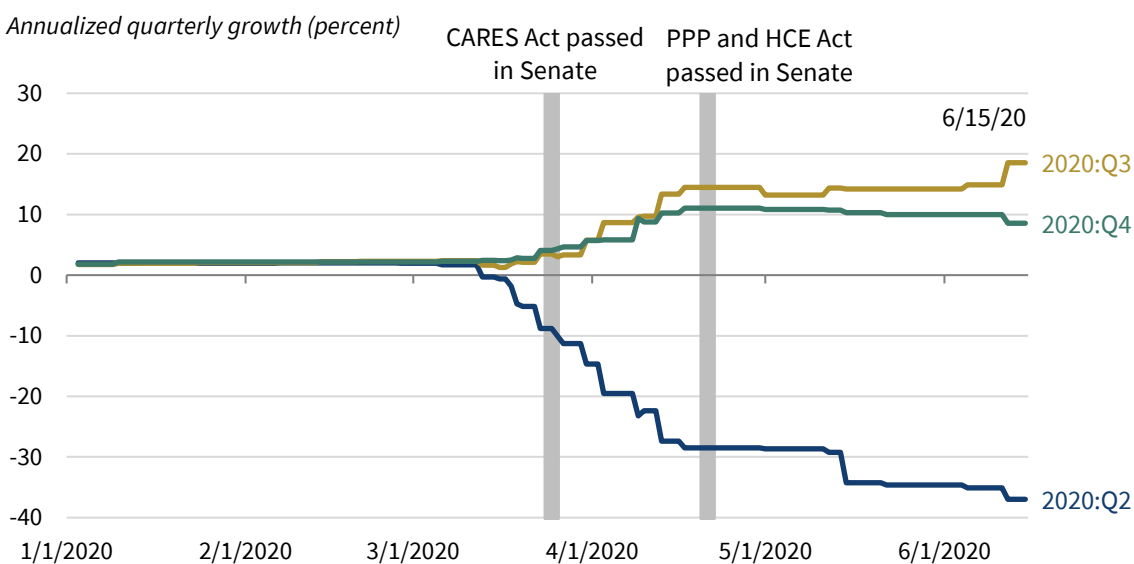
Source: Standard & Poor's.

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 the 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 (Alvarez, Argente, and Lippi 2020; Baker et al. 2020; and Eichenbaum, Rebelo, and Trabandt 2020). For example, 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 above-mentioned 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 June 15, the consensus market forecast is more optimistic than the projections in those academic studies. The Bloomberg median consensus forecast (out of a sample of 80 to 90 analysts) expect -5.7 percent for 2020 (as of June 15), and the Blue Chip Consensus forecast (as of July 10) projects -5.5 percent for 2020.

Figure 11 shows the weekly evolution of these market forecasts. The GDP contraction for 2020 primarily reflects analysts' deteriorating outlook for 2020:Q2, which has been continually revised down since mid-March as social-distancing practices became prevalent and as analysts began to take into account new information provided by high-frequency economic indicators pointing to the steeper depth of the downturn. Conversely, market analysts have continued to revise the forecasts for 2020:Q3, 2020:Q4, and 2021 upward, particularly since the passage of the CARES act (figures 11 and 12).

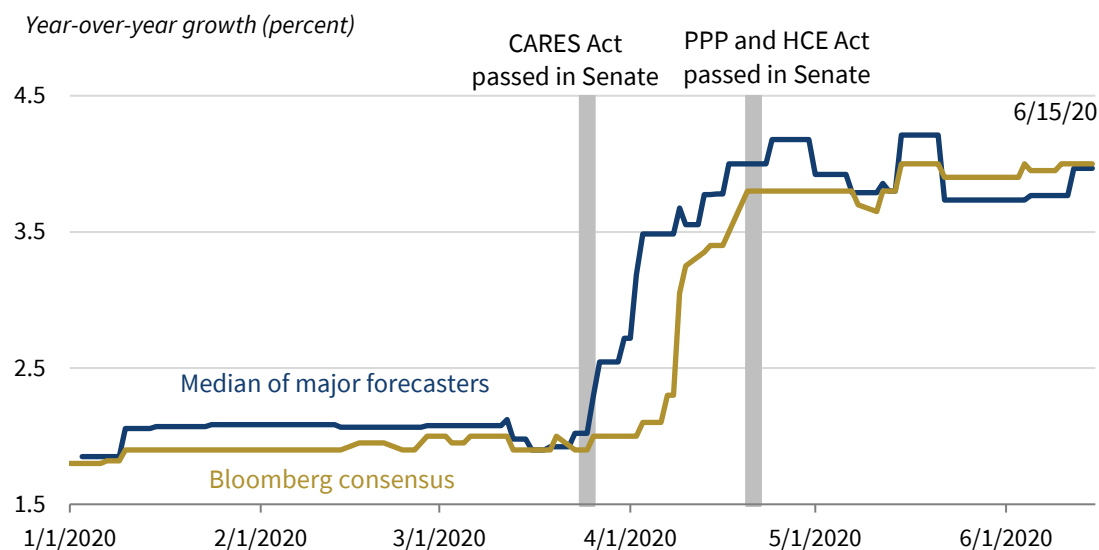
Figure 11. Evolution of Median Forecasts for 2020 Quarterly GDP



Source: Bloomberg.

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

Figure 12. Evolution of Forecasts for GDP in 2021



Source: Bloomberg.

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

Many are asking how much worse the GDP outlook would be in the absence of the CARES Act. The evolution of the GDP forecasts by market analysts is consistent with the idea that the CARES Act helped to raise the GDP outlook. 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 11 and 12).¹⁴ 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 bill's passage, 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 its passage. The projection for 2021 GDP growth was also revised up by 1.5 percentage points (from about 2.0 percent to 3.5 percent), corresponding to about \$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.¹⁵

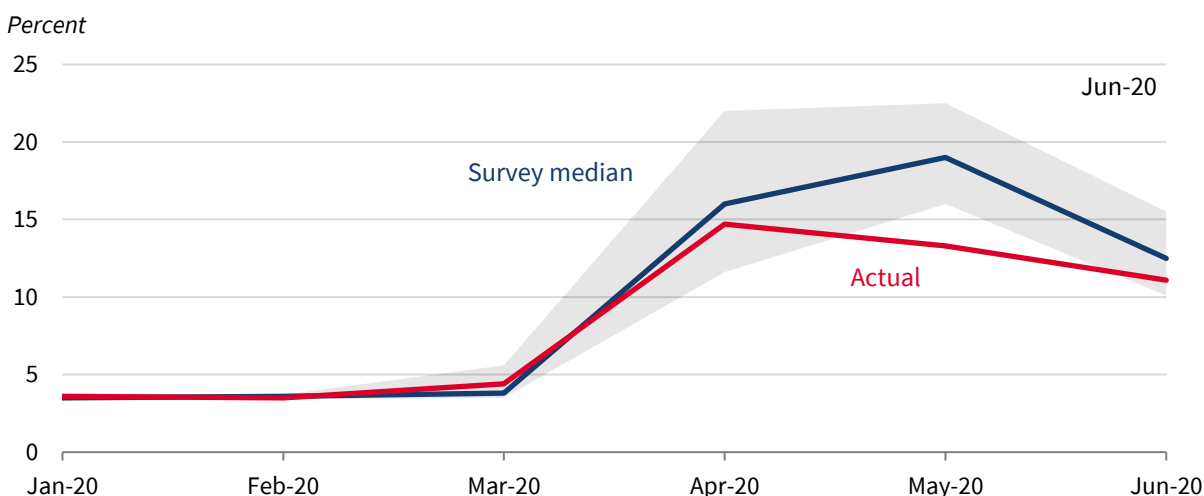
¹⁴ The sample in our survey of private banks consists of forecasts reported by the research team of nine major banks: Barclays, Wells Fargo, Goldman Sachs, UBS, Deutsche Bank, IHS Markit, Bank of America, JPMorgan Chase, and Citigroup.

¹⁵ The dependent variables of the regression are the weekly forecast revisions for the GDP growth rate horizon under consideration. The controls included are 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.

The Impact on Unemployment

As early signs of labor market turmoil became apparent in late March, forecasters began revising their expectations of unemployment upward. As States continued to pursue lockdown measures, unemployment continued to rise as expected. After March's jobs report showed evidence of a labor market collapse, forecasters quickly revised their expectations upward 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 13). The market consensus forecast for May's unemployment rate was 19.0 percent, with the most optimistic forecasters still projecting 16.0 percent unemployment. However, May's unemployment rate declined to an unexpected 13.3 as the economy reopened and businesses recalled workers. 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. Recent research by Autor et al. (2020) using administrative payroll data from 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. In total, S&P U.S. Chief Economist Beth Ann Bovino estimates that PPP could have saved upwards of 13.6 million jobs.¹⁶

Figure 13. Consensus Market Forecast for the Unemployment Rate, 2020



Source: Bloomberg.

Note: Gray shading denotes the market forecast range.

¹⁶ See: <https://af.reuters.com/article/credit-rss/idUSL2N2F00MR>

The Impact on Small Business Bankruptcies

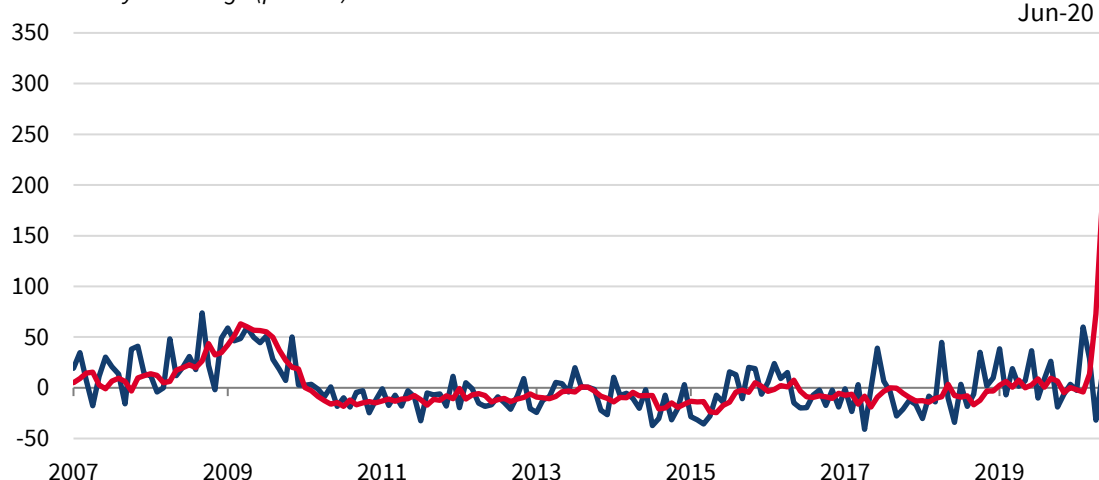
A concern in any crisis is the impact on business bankruptcies and failures, which can then lead to even higher levels of sustained unemployment. In this section, we attempt to model whether COVID-19 has led to high rates of small business failures, and whether the passage of the CARES Act may have mitigated 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 measures of macroeconomic activity like GDP that could be used for more reliable forecasting 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 temporarily furloughed. The latter can be seen as a successful consequence of the swift passage of historically large fiscal relief through the CARES Act. In particular, the combination of expanded unemployment insurance, loan forbearance provisions, and the creation of the novel PPP (discussed below) could have helped businesses absorb a shock to cash flows without being forced to declare bankruptcy.

One way to forecast small business Chapter 11 bankruptcies is through a vector autoregression 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 figure 14, 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 actually decreased by 1.8 percent. The analysis predicts chapter 11 small business filings would spike by 307.2 percent in June alone, but the actual change thus far is only 12.2 percent in the month of June (figure 14). We will continue to monitor Chapter 11 small business filings as more data become available.

Figure 14. 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 vector autoregression results of a three-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 could 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. A second important factor is the PPP's role in enabling businesses to stay afloat. By giving businesses loans that can be forgiven, PPP allows them to meet expenses while facing a demand shock. With this liquidity, many businesses that would have filed for bankruptcy are able to sustain themselves.

Finally, other elements of the CARES Act might have helped businesses avoid bankruptcy. For instance, sole proprietors and small business owners can also claim expanded unemployment insurance, which also provides liquidity. Their employees would be able to claim expanded UI as well if they are placed on temporary furlough. The loan forbearance provision additionally enables businesses to defer certain expenses, such as rental and mortgage expenses. In other words, the PPP and other elements of the CARES Act have likely played a significant role in helping businesses avoid bankruptcy. However, with the preliminary data we have thus far, it is difficult to show exactly how much of the "averted bankruptcies" can be explained by the PPP and the CARES Act.

The findings presented in this section suggest that 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,

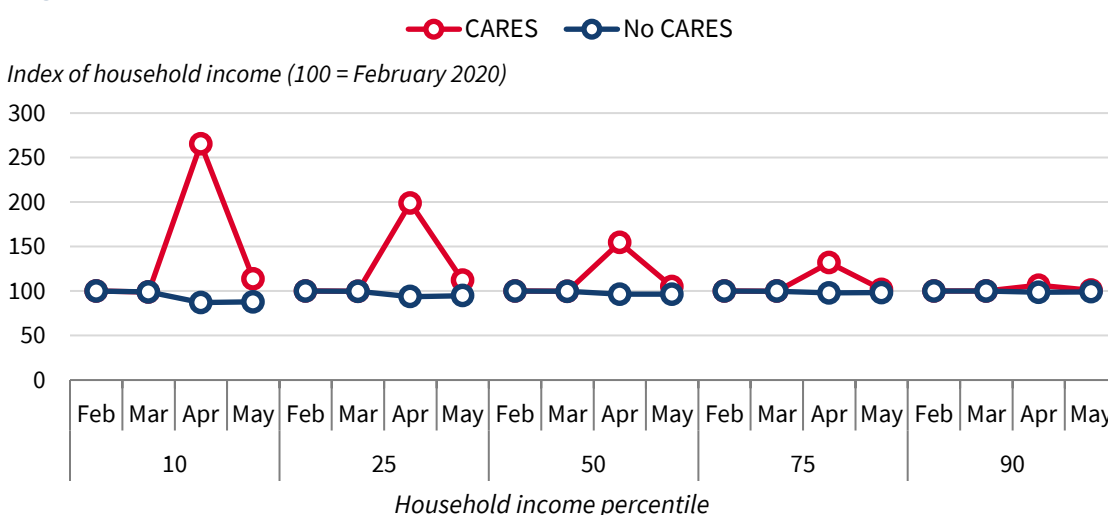
businesses and households were able to stay afloat longer than might have been expected, contributing to a more resilient recovery.

The Impact on Low-Income Households

Two of the key components of the CARES Act—expanded unemployment insurance benefits and Economic Impact Payments—provided income directly to Americans. This is especially important for lower-income households with the lowest capacity for borrowing or reducing consumption. Parolin, Curran, and Wimer (2020) estimate that these CARES Act’s provisions could lower the poverty rate to 11.3 percent if households have high access to these benefits, below the 12.5 percent precrisis 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.

Figure 15 simulates the trajectory of household income at different points on the income distribution—with and without these two major income replacement programs in the CARES Act (see the appendix for the methodology). Without these CARES Act provisions, a household at the 10th percentile of the income distribution would have experienced a 13 percent reduction in income in March and April 2020 compared with its February 2020 level. However, because of expanded UI and the Economic Impact Payments, its monthly income was 165 percent (\$1,901) higher in April and 14 percent (\$157) higher in May compared with February 2020. The spike in income in April under the CARES Act is largely a result of the Economic Impact Payments, while the continued elevated income in May is a result of expanded UI. 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 25th percentile household would have experienced a 6 percent and 5 percent decline in income in April and May, respectively, compared with February, and the 50th 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 15. Index of Household Income by Percentile, 2020



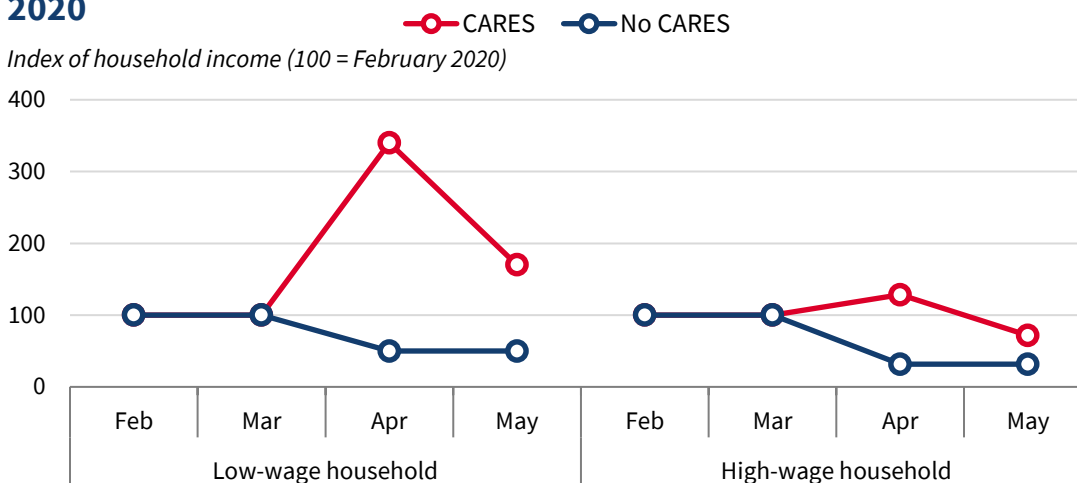
Sources: Census Bureau; Current Population Survey, Monthly and Annual Social and Economic Supplement; CEA calculations.

Note: See the appendix for the methodology.

Because figure 15 includes all households, it does not show how important the CARES Act was in preserving the income of specific households experiencing job loss. Figure 16 provides a more specific example of an illustrative household with two adults and two children, with one worker who loses their job starting in April 2020 and where all income is assumed to come from earnings (see the appendix for the 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.

Without expanded UI and the Economic Impact Payment under the CARES Act, 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 CARES Act provided greater income protection for low-wage households than high-wage households.

Figure 16. 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 the appendix for further details.

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

CHAPTER 3

The Impact of the CARES Act on Households

To ensure sufficient liquidity for households in light of the crisis, 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. These include direct transfers to households in the form of Economic Impact Payments, an expanded unemployment insurance benefit, and an extended duration of time over which unemployment benefits could be claimed. In addition, the PPP helped businesses with cash support to pay rents and other expenses, while providing incentives for small businesses to retain their employees. Many of these workers were placed on temporary furlough while businesses were waiting to reopen. 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 unexpected 11.1 percent in June, according to the Bureau of Labor Statistics, as millions of workers went back to their employers as businesses reopened. In parallel, there has been a continuing decline in the number of workers claiming regular UI benefits; and during the first week of June, over 20 million workers

are receiving unemployment insurance. Before the COVID-19 shutdown, the unemployment rate was below 4 percent, so we still have a long way to go in recovering lost ground. Therefore, it will be important to ensure that the decline in the unemployment rate continues over the next several months and that these temporary layoffs do not result in large permanent job losses (Barrero, Bloom, and Davis 2020). We estimate that the improvement in the unemployment rate in May was almost entirely due to some of those who had been temporarily laid off returning to work. In other words, the jobs report showed that most temporary layoffs went back to work rather than becoming permanent layoffs and there was no significant increase in new permanent layoffs.¹⁷

In addition to direct cash support, Congress provided additional benefits to Americans to protect against economic insecurity. All workers at firms with fewer than 500 employees (though firms with fewer than 50 employees may qualify for an exemption) were provided with expanded paid sick days and medical leave benefits so that they could take time off to recover from the illness themselves, look after those in their family who were suffering, or care for children whose child care programs or schools were closed. Firms were provided with PPP loans to enable them to keep workers on their payroll while meeting other expenses as well. Households with federally backed mortgages were also helped by generous mortgage forbearance rules so that if homeowners were facing difficulty making payments, they would not be subject to penalties. 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 several months, and 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.

Overview of Provisions in the CARES Act to Assist Households

Economic Impact Payments. The CARES Act authorized the Department of the Treasury to make Economic Impact Payments to eligible individuals by direct deposit, check, or debit card. Each adult could receive up to \$1,200 and \$500 for each dependent child, phased out at higher incomes. A family making less than \$150,000 a year with two parents and two children would receive \$3,400. The Internal Revenue Service (IRS) recently reported that it has sent out nearly \$267 billion in payments to 159 million Americans.

Expanded unemployment insurance. The CARES Act also authorized an expansion of unemployment insurance designed to replace a worker's lost wages and salaries that will cost an estimated \$268 billion, according to the CBO. Every beneficiary of unemployment insurance would receive an additional \$600 per week in unemployment benefits from March 29, 2020, through July 31, 2020, called Federal Pandemic Unemployment Compensation. Further, individuals who exhaust their regular State benefits are eligible for another 13 weeks of

¹⁷ We estimate at least 94 percent of the decline in unemployment from April to May was due to a decline in temporary layoffs, after incorporating those workers who were classified by the Bureau of Labor Statistics as employed but not at work but who may have actually been on temporary layoff, and including workers who are not in the labor force but say they want a job.

Pandemic Emergency Unemployment Compensation under the CARES Act, for a total of 39 weeks of coverage. Workers previously not eligible for unemployment insurance benefits, such as self-employed workers or gig workers, are now able to receive unemployment insurance benefits under the PUA program as well. As of early July, nearly three-quarters of the estimated cost has been received by households, even as the surge in claims increased the administrative challenges faced by States in processing claims and sending people the checks.

Mortgage forbearance and credit. Under the CARES Act, borrowers with federally backed mortgages who experience financial hardship due to COVID-19 can suspend payments for up to 180 days with the possibility of an extension up to an additional 180 days. During that period, no interest or fees are accrued. The CARES Act also prohibited foreclosures on homes with federally backed single-family mortgages for at least 60 days starting on March 18, 2020 (and prohibited evictions of tenants in certain Federally-supported rental properties for 120 days starting March 27, 2020). To allow families to borrow money if needed, holders of individual retirement accounts (IRAs) adversely affected by COVID-19 are eligible under the CARES Act to take a distribution from their IRA and treat this distribution as a tax-free rollover, provided they recontribute the amount within three years. The CARES Act also ensured consumers' credit did not suffer due to the virus; if consumers have an agreement with their lender to delay payments or make a partial repayment, they will not receive a negative credit report.

Protection for student loan borrowers. The CARES Act also included provisions to protect student loan borrowers. Employers were provided with the ability to make up to \$5,250 in student loan payments through December 31 for each employee without incurring taxes. In addition, through September 30, student loan payments and interest accruals for Department of Education-held federal student loans are suspended, and involuntary collections related to student loans through wage garnishments, tax refund reductions, and negative credit reporting are also suspended for loans held by the Department of Education.

Federal waivers for welfare programs. Through legislation and guidance from Federal agencies, transfer programs now offer higher benefits to more families. Congress authorized and provided funding, under the Families First Coronavirus Response Act (FFCRA) and CARES Act, respectively, for States to electronically issue nutrition benefits via Supplemental Nutrition Assistance Program (SNAP) cards to families whose children would ordinarily receive free or subsidized school lunches, and allowed the U.S. Department of Agriculture (USDA) to temporarily waive work requirements for nondisabled, childless adults. In addition, legislation allowed the USDA to temporarily raise SNAP benefits up to the maximum level for each household size. Similarly, the Department of Health and Human Services has encouraged States to utilize the flexibilities currently available under the Temporary Assistance for Needy Families (TANF) program to respond to the COVID-19 emergency. These flexibilities include temporarily increasing cash benefits; recognizing "good cause" exemptions from work requirements for TANF participants who cannot go to work or training activities because they are ill, caring for a child whose school or day care is closed, or because the work or training site is closed; and allowing families who have recently lost income to access benefits through

streamlined eligibility determination processes. Congress gave financial assistance to State Medicaid programs, and the Centers for Medicare and Medicaid Services has allowed States to expedite the process of enrolling individuals in Medicaid.

Paid medical and family leave. The FFCRA requires certain employers with fewer than 500 employees to provide their employees with paid sick and family leave, financed through refundable tax credits. Workers are entitled to 2 weeks of paid sick leave covering up to 100 percent of wages, and to an additional 10 weeks of paid family and medical leave covering up to 67 percent of wages.¹⁸

The Impact of the CARES Act on Incomes and Jobs

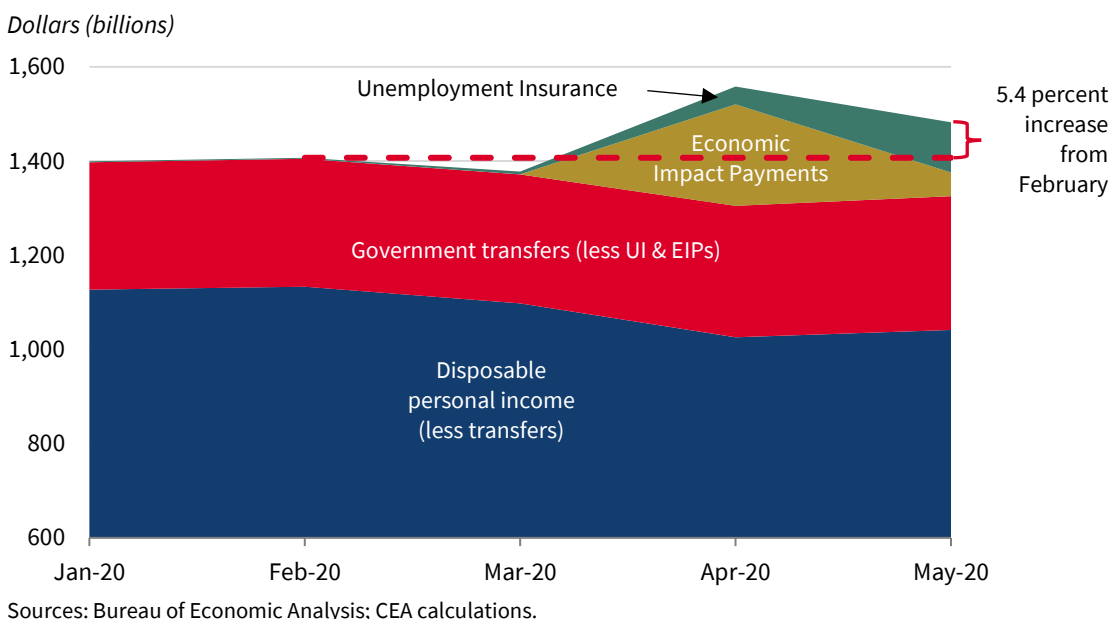
Increased aggregate disposable personal income. Absent a strong policy response, the COVID-19 recession would have likely caused a dramatic reduction in disposable personal income as workers lost jobs and businesses shut down. The April unemployment rate was 14.7 percent, the highest it has been since the Great Depression, and the rate for May was 13.3 percent.¹⁹ 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, according to data from the Bureau of Economic Analysis, disposable personal income rose substantially in April after a large reduction in March and remained elevated above pre-pandemic levels in May. While employee compensation fell drastically in March and April, disposable personal income experienced its largest one-month increase on record in April due to government transfers through the CARES Act. By far, the largest factor in raising disposable personal income in April were the payments made to individuals under the CARES Act. In May, disposable personal income remained elevated above pre-pandemic levels, but the boost from government transfers came primarily from unemployment insurance, though economic impact payments continued in May (see table 2). Illustrating the extent of support these programs provided, real disposable income *excluding* government transfers experienced the largest one-month decline on record in April and remained suppressed in May. As seen in figure 17, disposable personal income was 5.4 percent above February’s level in May. This was almost entirely driven by government spending through unemployment insurance and economic impact payments in response to the pandemic.

¹⁸ Workers qualify for up to two weeks of paid sick leave replacing 100 percent of their wages, up to a daily maximum of \$511, if they are currently experiencing COVID-19 symptoms and seeking a diagnosis or are under quarantine in order to prevent the spread of COVID-19. Workers can alternatively take these two weeks of paid sick leave with 67 percent of wages replaced, up to a daily maximum of \$200, if they are providing care to an individual with COVID-19 or are caring for a child due to the closing of a school or childcare program. Workers qualify for an additional 10 weeks of family and medical leave—replacing 67 percent of their wages, up to a daily maximum of \$200—if they are caring for a child whose school or child care program is closed.

¹⁹ Some estimates put the rate at higher than the official U-3 rate. See, for example, Fairlie, Couch, and Xu 2020.

Figure 17. Monthly Disposable Personal Income, 2020



While incomes grew, real personal consumption saw a dramatic downturn in April, the largest one-month decline on record.²⁰ Real personal consumption rose in May but remains much lower than pre-pandemic levels. This could suggest that much of the additional government transfers acted more as a financial cushion than a household stimulus. This assumption is reasonable given that the lockdown requirements restricted the number of spending opportunities, such as meals at restaurants, along with households facing a large amount of economic uncertainty due to the COVID-19 pandemic. 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 a decrease in May but remains elevated.

Direct Economic Impact Payments to individuals, not including the additional extra unemployment payments to individuals, accounted for \$215.7 billion, or 13.8 percent, of April's disposable personal income and \$50.5 billion, or 3.5 percent, of May's. Pandemic Unemployment Compensation Payments accounted for \$12.5 billion of April's disposable personal income and \$70.2 billion in May. PUA, Pandemic Emergency Unemployment Compensation, and student loan forbearance played much smaller but still-important roles in increasing personal income in March, April and May, as seen in table 2 below. IRS data through June 3 suggests that over 60 percent of people over 16 years old have received the Economic Impact Payments, while the Department of Labor finds 10.8 percent of workers have a

²⁰ 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 low-income households cut spending by only 4 percent. This is likely a function of Economic Impact Payments as well as unemployment benefit receipt.

continued unemployment insurance claim for the week ending on July 4, not including workers who qualify for and are receiving Pandemic Unemployment Assistance, for self-employed and gig workers. Some problems remain to be addressed in distributing these benefits to everyone who qualifies, but more and more households are able to take advantage of these provisions each week.

Table 2. Effects of Selected Pandemic Response Programs on Personal Income in March, April, and May 2020

<i>Program</i>	<i>Billions of dollars (annualized)</i>	<i>Share of DPI (percent)</i>	<i>Billions of dollars (not annualized)</i>
Pandemic Unemployment Assistance	160.5	1.0	13.4
Pandemic Emergency Unemployment Compensation	8.1	0.0	0.7
Pandemic Unemployment Compensation Payments	991.7	5.9	82.6
Economic Impact Payments under CARES	3,194.2	19.1	266.2
Student loan forbearance	93.4	0.6	7.8
Total income from pandemic response programs	4,447.9	26.6	370.7
Total disposable personal income, 2020:Q1	16,735.7		

Sources: Bureau of Economic Analysis; CEA calculations.

Expanded unemployment insurance helped the unemployed. As table 2 shows, the combination of the economic impact payments, the increase in UI benefits, and the extension of benefits to workers not traditionally covered by these payments was a big factor behind the increase in disposable personal income. In addition, UI has been particularly beneficial for lower-income households. Lower-wage workers are relatively more likely to be employed in sectors that have been the hardest hit due to COVID-19, such as the retail and the leisure and hospitality sectors. Adding an additional \$600 to weekly unemployment insurance benefits has benefited workers in low-wage industries, particularly those who have seen the greatest job losses (see table 3). One reason for this is that UI benefits are currently replacing prior earnings at rates above 100 percent for many workers, and this is especially true for workers in lower-wage industries. Based on a similar analysis, Ganong, Noel, and Vavra (2020) estimate that 68 percent of unemployed workers receive more from unemployment than they would from working—for the median worker, 134 percent of earnings are replaced.

Table 3. Jobs Lost and Unemployment Insurance Benefits by Industry, 2020

<i>Industry</i>	<i>Jobs lost from February to June (thousands)</i>	<i>Share with UI benefits greater than earnings (percent)</i>
Accommodation and Food Services	-3,917	90.9
Healthcare and Social Services	-1,426	70.6
Administrative, Support, Waste Management, and Remediation Services	-1,299	81.0
Retail Trade	-1,273	82.9
Art, Entertainment, and Recreation	-909	82.3
Manufacturing	-757	62.9
Other Services (except Public Administration)	-752	79.8
Transportation and Warehousing	-499	71.2
Construction	-472	67.7
Professional, Technical, and Scientific Services	-432	40.4
Education Services	-388	65.7
Wholesale Trade	-317	62.3
Information	-315	55.4
Real Estate	-200	64.8
Management of Companies and Enterprises	-99	61.7
Mining, Quarrying, and Oil and Natural Gas Extraction	-87	40.4
Finance and Insurance	-37	50.4
Utilities	-9	45.9
Total	-13,189	68.1

Sources: Department of Labor; Bureau of Labor Statistics; Saving to Invest; CEA calculations.

During the first week of June, 20.5 million workers were currently receiving regular unemployment benefits and 11.9 million were receiving either PUA or Pandemic Emergency Unemployment Compensation, even as States faced administrative challenges in processing and disbursing benefits. As more workers start to receive benefits, the income support provided to households will increase. Data from 2013 to 2016 indicate that providing household liquidity through unemployment benefits significantly smooths consumption (see Ganong and Noel 2019). However, the current crisis is unique because of the dramatic drop in consumption coming from social distancing instead of just lost income or precautionary saving. Deciphering the impact of unemployment benefits on current consumption is therefore likely to prove more difficult.

Economic Impact Payments especially supported lower-income households. As discussed, the CARES Act provided one-time Economic Impact Payments of \$1,200 per adult and \$500 for each dependent child, with amounts beginning to phase out at \$150,000 of income for joint tax filers. These payments especially helped preserve liquidity for low-income families. For example, a married couple with two children and income below \$150,000 would have received \$3,400.

Since the annual poverty line is \$26,200 for a family of four, the recovery rebate is enough to keep a family of four out of poverty for 1.5 months even if it lost all other income.

Table 4 shows that Economic Impact Payments are especially important for low-income households. For example, households in the bottom 10 percent of the income distribution received enough to replace 2.8 months of income. On average, these households have monthly incomes of less than \$1,000. Hence a payment of \$1,200 or higher can provide a significant boost in incomes for over 2 months.

Table 4. Monthly Income, CARES Recovery Rebate, and Months of Income Replaced by Rebate by Household Income Decile

<i>Household income decile</i>	<i>Mean monthly income (dollars)</i>	<i>Mean rebate (dollars)</i>	<i>Months of income replaced by rebate</i>
1	628	1,749	2.8
2	1,695	1,904	1.1
3	2,640	2,174	0.8
4	3,651	2,351	0.6
5	4,737	2,498	0.5
6	6,008	2,687	0.4
7	7,544	2,809	0.4
8	9,566	2,872	0.3
9	12,786	2,916	0.2
10	26,023	795	0

Sources: Census Bureau; CEA calculations.

Note: All values are simulated based on 2018 reported income and CARES Act legislated payments.

The economics literature also demonstrates how economic stimulus payments especially supported lower-income households. Research indicates that a significant fraction of households behave as if they are liquidity constrained and are thus highly responsive to increases in liquidity (Fuster, Kaplan, and Zafar 2020). Baker and others (2020) show that within 10 days of the receipt of Economic Impact Payments, nearly 30 percent of the payment was spent on food, rent, bills, and nondurables. The results were most pronounced for those with low incomes and low savings. During the Great Recession, households spent \$0.25 of every \$1 on nondurables from the 2008 stimulus payments (Kaplan and Violante 2014). Taking into account durables, the consumption response in 2008 exceeded \$0.50 (Parker et al. 2013). Compared with that situation, the current consumption response is higher for food but smaller for durables (Baker et al. 2020). Chetty and others (2020) find that Economic Impact Payments had a large effect on spending by low-income households, allowing them to return their spending levels to pre-COVID levels, by May 10 (Chetty et al. 2020).

The Paycheck Protection Program helped keep workers employed. Another reason that workers have received stable or rising incomes is due to the PPP. Established under the CARES Act, the PPP authorized \$349 billion to support payroll and other expenses for America's small

businesses, self-employed individuals, Tribal business concerns, and nonprofit or veterans' organizations during the COVID-19 crisis. As part of the PPP and Health Care Enhancement Act, an additional \$310 billion was appropriated to the program. While the funds are loans, the funds can be fully forgiven if no less than 60 percent (originally 75 percent) of the funds are used for payroll. The remaining 40 percent can be used for other eligible business expenses like paying rent, utilities, or mortgage interest obligations. PPP borrowers have 24 weeks to use the loan proceeds for forgiveness as well.

As discussed above, the latest jobs report surprisingly showed a decline, rather than an increase, in the unemployment rate, from the 14.7 percent peak in April to 11.1 percent in June. This was largely the result of temporarily furloughed workers being recalled by their employers. We estimate that more than 80 percent of the increase in unemployment from February to May was due to temporary layoffs and nearly all the decline in unemployment from April to May was due to workers returning to their jobs from temporary layoff, as stated above. To the extent that these workers were furloughed by employers that were using their PPP money to keep workers on their payroll, at least some of this decline in unemployment can be attributed to the PPP program. Company-specific data on PPP loan receipts and employment provided an insight into the role the program played in keeping workers attached to their employers, before which the extent was unclear.²¹ Recent research by Autor et al (2020) using administrative payroll data from 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. In total, S&P U.S Chief Economist Beth Ann Bovino estimates that PPP could have saved upwards of 13.6 million jobs.

After this July 6 release, loan-level data show companies that were approved for a PPP loan employed just over 51 million workers. This number comes with caveats of the accuracy of the data, because some businesses claim they were approved for smaller amounts than what the released data indicate.²² Further, the jobs number comes from businesses that report the number of employees on their payroll at the time of their application. This is just a box on an application, and some lenders did not report it to the U.S. Small Business Administration (SBA). The process of loan forgiveness will determine the most accurate estimate of jobs supported by PPP loans, for it will indicate how many workers stayed on the payrolls of these businesses.

Through July 10, SBA approved more than 4.9 million loans, for a total of more than \$517.4 billion. The average loan size was about \$105,000. The loans were overwhelmingly distributed to small businesses with few employees. Over 86 percent of the total approved loans, corresponding to over one-quarter of the total approved loan amount, were for an amount of \$150,000 or less (table 5). Over 94 percent of the total approved loans, corresponding to more

²¹ Analysis by Chetty et al. (2020) shows a limited impact of PPP on employment levels at small businesses. However, their analysis is also constrained by the lack of firm-level data on PPP loan receipt and employment.

²² Multiple media outlets, including Bloomberg and CNBC, have reported on some of these caveats.

than 43 percent of the total approved loan amount, were for an amount of \$350,000 or less. Since the maximum loan a business can apply for is a function of its total payroll costs, the vast majority of PPP loans were approved for small businesses and organizations with very few employees.

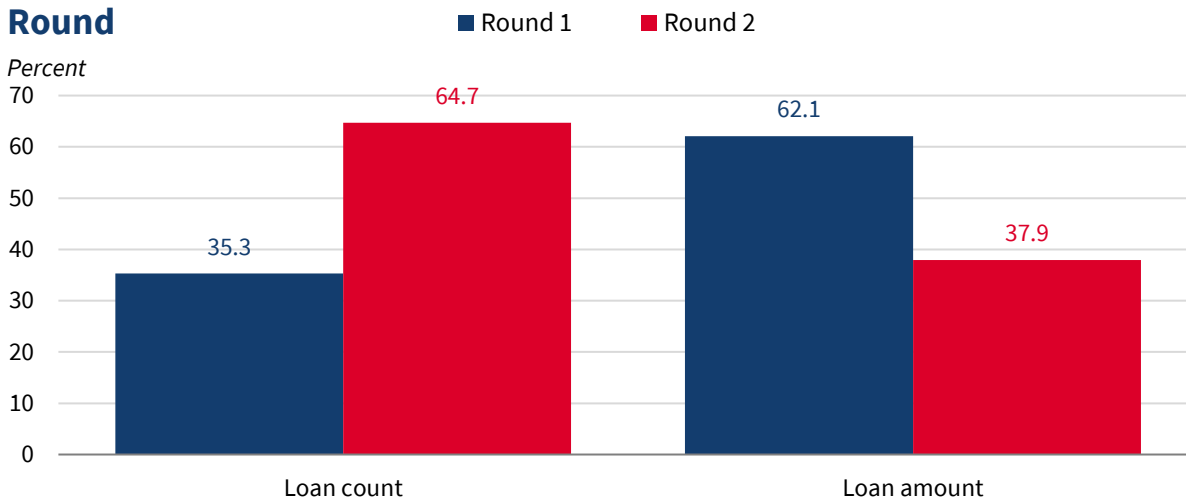
**Table 5. PPP Loan Size by Amount, First and Second Round Combined
(data as of 7/10/2020)**

<i>Loan size</i>	<i>Approved loans (count)</i>	<i>Approved loan total amount (billions)</i>	<i>Percent of count</i>	<i>Percent of amount</i>
\$50K and under	3,289,259	58.9	67.0	11.4
\$50K - \$100K	673,105	47.9	13.7	9.3
\$100K - \$150K	290,329	35.5	5.9	6.9
\$150K - \$350K	374,674	84.1	7.6	16.3
\$350K - \$1M	198,518	112.9	4.0	21.8
\$1M - \$2M	52,931	73.5	1.1	14.2
\$2M - \$5M	24,164	71.9	0.5	13.9
Greater than \$5M	4,675	32.6	0.1	6.3
Total	4,907,655	517.4		

Source: Small Business Administration.

The first round of the PPP, ending April 16 when funds ran out, approved fewer loans but consisted of a larger share of the total loan amounts (figure 18). Round two has had a change in the composition of who is receiving the loans, with a shift toward smaller businesses. The average loan size fell from \$185,500 in round one to \$61,800 in round two.

Figure 18. Share of Total PPP Loan Counts and PPP Loan Amounts by Round



Sources: Small Business Administration; CEA calculations.

Note: The loan counts and amounts for round 1 are derived using SBA's June 20 update that shares round 2 specific data.

As of July 10, healthcare and social assistance; professional, scientific, and technical services; construction; and manufacturing account for 48 percent of the total amount of approved dollars in both rounds of PPP (table 6). When looking at the percentage of employment recovered from April, there is a strong correlation, with an R^2 of 0.66, showing that industries that received more PPP loans grew closer to their pre-COVID levels faster from April to June.²³

Table 6. PPP Loans by Industry

<i>NAICS subsector description</i>	<i>Approved loans</i>	<i>Approved dollars (billions)</i>	<i>Percent of loans</i>	<i>Percent of amount</i>
Health Care and Social Assistance	508,145	66.8	10.4	12.9
Professional, Scientific, and Technical Services	641,118	65.9	13.1	12.7
Construction	468,156	64.1	9.5	12.4
Manufacturing	230,003	53.7	4.7	10.4
Accommodation and Food Services	368,311	41.9	7.5	8.1
Retail Trade	451,441	40.1	9.2	7.7
Other Services (except Public Administration)	535,476	30.9	10.9	6.0
Wholesale Trade	167,698	27.5	3.4	5.3
Administrative and Support and Waste Management and Remediation Services	241,866	26.2	4.9	5.1
Transportation and Warehousing	194,794	16.9	4.0	3.3
Real Estate and Rental and Leasing	247,091	15.4	5.0	3.0
Finance and Insurance	169,475	12.0	3.5	2.3
Educational Services	81,800	11.9	1.7	2.3
Unclassified Establishments	221,914	9.8	4.5	1.9
Information	69,358	9.2	1.4	1.8
Arts, Entertainment, and Recreation	119,310	8.0	2.4	1.5
Agriculture, Forestry, Fishing and Hunting	139,729	7.9	2.8	1.5
Mining	21,616	4.5	0.4	0.9
Public Administration	13,459	1.7	0.3	0.3
Management of Companies and Enterprises	8,937	1.6	0.2	0.3
Utilities	7,958	1.5	0.2	0.3
Total	4,907,655	517.4	100	100

Sources: Small Business Administration; CEA calculations.

²³ This was done by taking the natural log of loan amounts approved by industry and taking the correlation with the number of jobs gained from April to June divided by job losses from February to April. A strong relationship exists, showing that a 10 percent increase in loan dollar amounts leads to 2.7 percentage points more jobs recovered.

Figure 19. Percent of 2.5 Month Small Business Payroll Covered by PPP, data through July 10

Sources: SBA; Census; CEA calculations.
Note: The amount of payroll comes from Census' 2017 SUBS survey adjusted to 2019 dollars then reduced to 2.5 months worth. Small businesses are defined as employment of 1 - 499. Sole-proprietorships also received PPP loans, so some states received more than 100% of this payroll.

77.6% to 85.1%
85.1% to 89.7%
89.7% to 92.9%
92.9% to 102.9%

The Impact of the CARES Act on Businesses, Farmers, and the Financial Sector

²⁴ An early analysis of the PPP program shows that allocation of loans was largely uncorrelated with the level of economic distress in the geographic region (Granja et al. 2020).

percentage-point increase from April. NFIB attributes some of this to the loan forgiveness condition associated with the PPP. Small businesses have begun to increase compensation and plan to continue to do so; a net 14 percent more surveyed firms reported increasing compensation for their employees than reported decreasing compensation for employees over the past three months, while a net 10 percent more firms planned to increase compensation over the next three months in May.

Summary of Policies That Affect Small Businesses

Paycheck Protection Program. As discussed above, the CARES Act authorized \$349 billion in PPP loans to support payroll and other expenses for America's small business, self-employed individuals, Tribal Business concerns, and nonprofit/veterans' organizations. As part of the PPP and Health Care Enhancement Act, an additional \$310 billion was authorized, bringing the total amount authorized for the PPP to \$659 billion. While the funds will be used to guarantee and forgive loans, a condition for making the loans fully forgivable is that no less than 60 percent (originally 75 percent) of the funds be spent on payroll expenses within a 24-week (originally 8-week) period.

Federal Reserve Facilities. Federal Reserve facilities are supported by the Treasury Department to ensure that the Federal Reserve will not have to absorb losses. This collaboration enhances business liquidity through the establishment of 11 financial facilities. (In the case of the PPP, the collaboration also includes the Small Business Administration.) In these facilities, various Federal Reserve Banks lend to private firms or to State and local governments. In general, the Treasury offers capital under the authority of Title IV of the CARES Act to support the various macroeconomic facilities established by the Federal Reserve under section 13(3) of the Federal Reserve Act. The facilities can be divided into two groups: those that are aimed at the supply of credit to the macroeconomy (which rely on CARES Act capital funding), and those that aimed at funding markets (which are backed by funding from the Treasury's exchange stabilization fund or secured by collateral):

Facilities aimed at the supply of credit to the macroeconomy:

- Primary and Secondary Market Corporate Credit Facilities to provide liquidity for corporate bonds,
- the Term Asset-Backed Securities Loan Facility that will support the issuance of asset-backed securities (ABS) backed by student loans, auto loans, credit card loans, and loans guaranteed by the Small Business Administration,
- the Municipal Liquidity Facility to help State and local governments manage cash flow pressures after the municipal bond market showed signs of stress, and
- the Main Street Lending Program and the Paycheck Protection Program Liquidity Facility to support lending to small- and medium-sized businesses.

Facilities aimed at funding markets:

- The Money Market Mutual Fund Liquidity Facility, the Commercial Paper Funding Facility (backed by capital from the Treasury's Exchange Stabilization Fund), and the Primary Dealer Credit Facility to support the flow of credit to short-term funding markets (where loans are collateralized).

A recent analysis shows that despite the large increase in liquidity demands by firms on banks in March 2020, in anticipation of the impending crisis, banks were largely able to meet the need. This was a consequence of timely funding flowing in from the Federal Reserve and depositors (Li, Strahan, and Zhang 2020).

In this section, we explore how the availability of forgivable loans and grants has allowed small businesses to avert delinquencies and bankruptcies, and also track the state of employment, reopenings, and revenues for small businesses. In a survey of small businesses conducted in late March and published in April, economists found that of the 5,800 small businesses surveyed, about 43 percent had temporarily closed, and many businesses had seen employment decline by 40 percent since January. The survey also found that within the subset of firms with monthly expenses over \$10,000, the median firm had enough cash to cover two weeks. Many of these firms were looking to seek assistance through the CARES Act (Bartik et al. 2020).

How Small Businesses Have Responded to the CARES Act

Small Business bankruptcies have not spiked. One indicator that we can monitor is small business bankruptcies. Using data from the Department of Justice, we are able to monitor weekly changes in small business bankruptcies (specifically under Chapter 11) and also compare the monthly totals for 2020 with the same month in prior years to see if small business bankruptcies have spiked as a result of the crisis.²⁵ While the May bankruptcy data are relatively higher than the May average for 2017 to 2019, the overall trend in filings this year has been declining since February. The totals for February and March, due to a new Subchapter 5 provision that came into effect in February, rose to high levels that outpace totals for April, May, and June.²⁶

In addition to small business Chapter 11 bankruptcies falling, aggregate Chapter 7 bankruptcy filings have fallen by 13 percent from October 2019 to July 12, 2020, compared with the same period a year ago. Aggregate Chapter 7 filings refers to the actual liquidation of assets for businesses and consumers, as we are unable to differentiate between the two. Nearly all this

²⁵ When referred to as “small business,” the data reflect businesses that classify themselves as small when they are filing for a Chapter 11 bankruptcy.

²⁶ Subchapter 5 of Chapter 11 makes it easier for smaller businesses to reorganize under Chapter 11 bankruptcy. Under the CARES Act, the threshold debt level for businesses that could apply for Subchapter 5 bankruptcy was raised further, allowing more small businesses to be eligible for this chapter.

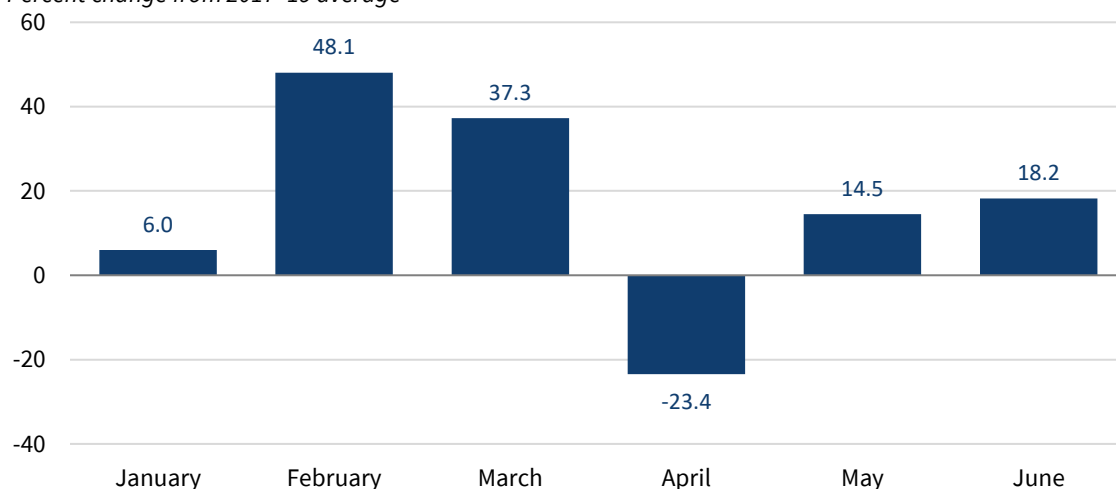
drop has been felt since the end of February, as filings from October to February averaged a monthly year-over-year increase of 2 percent.

Small business Chapter 11 bankruptcies fell in April compared with a year before, and remained much lower at an annualized rate than they were during the recovery from the financial crisis. There was an uptick in filings in May and June, mainly due to the new Subchapter 5 provision, according to the Department of Justice. This decline in April is counter to the expected increase in small business Chapter 11 bankruptcies, given historical trends and current economic conditions, and possibly suggests that the strong pre-COVID economy and PPP may have helped businesses avoid bankruptcy. However, given the elevated business uncertainty and potential delays in filing due to social-distancing measures, it may be too early to draw a definitive conclusion on the overall effectiveness of PPP or its long-term effect on Chapter 11 bankruptcies.

As shown in figure 20, small business Chapter 11 bankruptcies decreased 23.4 percent in April compared with the average of April for 2017 to 2019. However, filings increased 14.5 and 18.2 percent, respectively, more than usual in May and June compared with the average of 2017–19. For February and March, the total was 48.1 and 37.3 percent, respectively, higher than the average for the same months over the years 2017 to 2019.

Figure 20. Total Small Business U.S. Chapter 11 Bankruptcy Filings, 2020

Percent change from 2017–19 average



Sources: Department of Justice; CEA calculations.

The higher number of small business Chapter 11 bankruptcy filings in February and March is likely due to the Subchapter 5 provision of Chapter 11 introduced in February that made it easier for smaller businesses to reorganize under Chapter 11. There was also a week in May that saw a large increase that is attributed to the new provision as well. It is interesting that

despite Subchapter S being available to small businesses during the current crisis, April, May, and June saw a decrease relative to February and March. It is particularly surprising as a new Census Bureau survey found over 40 percent of surveyed small businesses still experienced a decline in revenues the week of June 27, down from over 70 in early May.²⁷ Hence we need to be cautious and not read too much into these early weeks of data.

Table 7 illustrates the percentage of small businesses that have accessed different programs and liquidity measures since March 13, per the Census survey. In addition to these programs and liquidity measures, Economic Impact Payments and UI may also have been accessed by small businesses as well. As stated in chapter 3, April data on personal income show how real personal disposable income increased 13.6 percent due to public assistance through the CARES Act. When excluding transfers, disposable income fell 6.3 percent. In May, disposable income excluding transfers recovered slightly but remained suppressed, while continued public assistance through the CARES Act allowed real personal disposable income to remain elevated above pre-pandemic levels.

Table 7. Liquidity Programs for Small Businesses during COVID-19

<i>Program</i>	<i>Percent of small businesses receiving assistance</i>
Paycheck Protection Program (PPP)	72.4
Economic Injury Disaster Loans (EIDL)	21.3
Small Business Administration (SBA) loan forgiveness	6.8
Other Federal programs	2.6
This business has not received financial assistance from any Federal program	23.0

Sources: Census Bureau; CEA calculations.

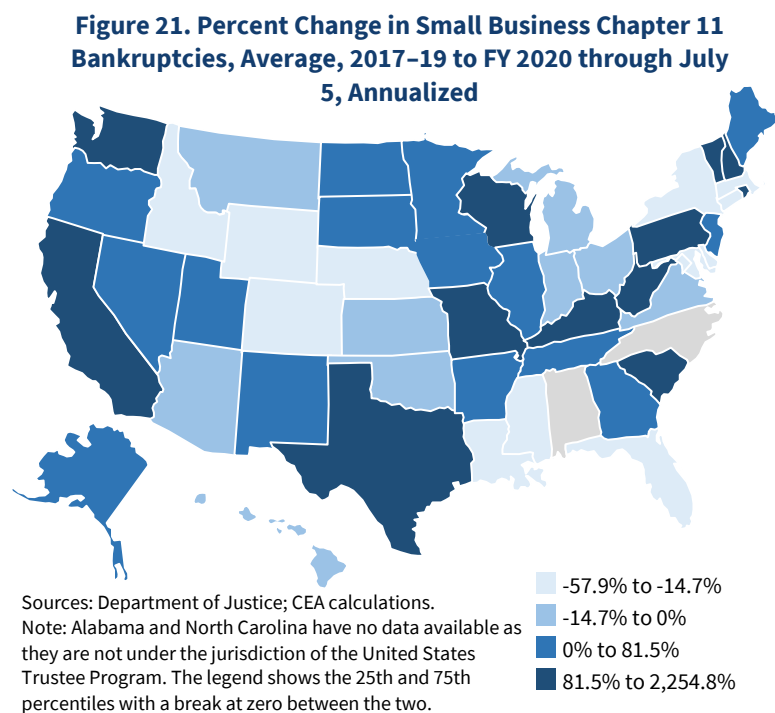
Note: The sum of these do not equal 100 as businesses could select multiple answers. Survey results for the period 6/21-6/27. Census defines a small business as “a single location business with employment between 1 and 499 and receipts of at least \$1,000.” The sample consists of about 885,000 businesses.

Many unique aspects of the COVID-19 pandemic and containment measures render it difficult to assess the reasons for this apparent decline in filings. Some of this difference in small business Chapter 11 bankruptcy filings may be due to owners being unable to physically go and file for bankruptcy due to distancing measures, or courts being unable to accept filings for the same reason (Tett 2020). Businesses may also be waiting until they see how the current economic uncertainty unfolds before they file for bankruptcy (Keshner 2020). Additionally, the strong economy pre-COVID may have put businesses in a position to survive for some time, even with COVID-related disruptions to their business models. Interestingly, a recent academic paper simulates the effect of a PPP-type program in a general equilibrium model and shows that that program, along with a Main-Street-Lending-type program, would be successful in preventing corporate bankruptcies (Elenev, Landvoigt, and Van Nieuwerburgh 2020).

²⁷ This preliminary estimation comes from weekly surveys conducted by the Census Bureau since April 26; see <https://portal.census.gov/pulse/data/>.

The PPP program also helped small businesses avert bankruptcies because just over 70 percent of small businesses, defined as a firm with employment between 1 and 499 workers, received PPP loan assistance, according to the Census Bureau’s Pulse surveys. First, the SBA specified that businesses that are currently filing for bankruptcy are not eligible to receive potentially forgivable PPP loans; hence, businesses may be putting off filings in order to receive the money.²⁸ Second, receipt of PPP loans allows businesses to stay afloat and adopt a “wait and see” attitude until the reopening of the economy.²⁹

Figure 21 shows which States have seen an uptick in small business Chapter 11 bankruptcies so far in fiscal year (FY) 2020 through July 5, compared with their 2017 to 2019 averages. There are 29 States with higher FY 2020 annualized small business Chapter 11 bankruptcies than their averages between 2017 and 2019. These States account for 67.4 percent of total small business Chapter 11 bankruptcies so far in FY 2020.



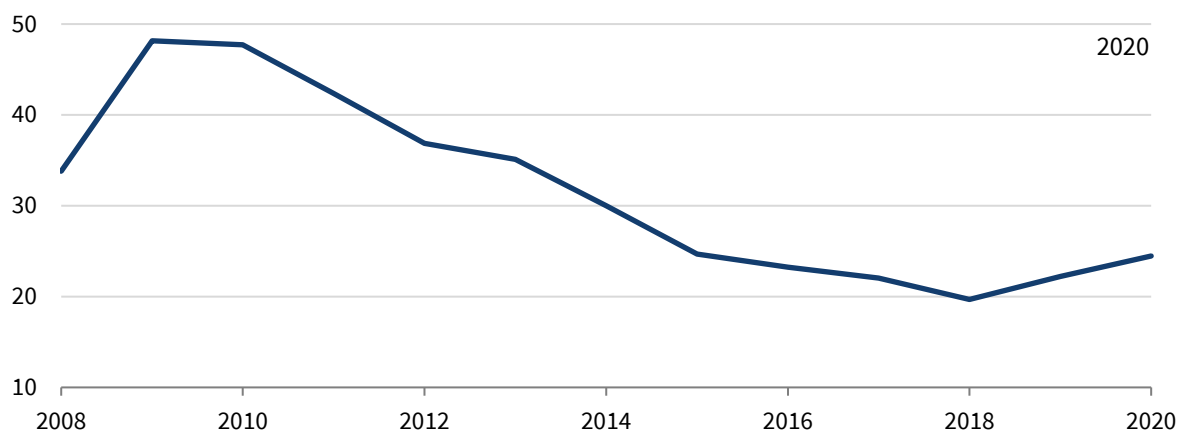
²⁸ Official SBA forms have prohibited debtors in bankruptcy that would otherwise qualify from receiving PPP loans (Parlin 2020).

²⁹ The executive director of the American Bankruptcy Institute argued that Congressional and executive branch action has staved off an initial wave of bankruptcies due to the pandemic (ABI 2020).

We can compare these data to longer-run historical trends in bankruptcy filings, starting from the Great Recession. Figure 22 uses annual data on small business filings provided by the Department of Justice.³⁰ There was a large increase in small business Chapter 11 bankruptcies during 2009 and 2010, with falling small business Chapter 11 bankruptcies as the recovery continued. Beyond the PPP’s potential role, strong economic fundamentals pre-COVID—including record-high small business optimism—may have played a role in small business Chapter 11 bankruptcies staying below the levels most would expect during an economic disruption as large as COVID-19.

Figure 22. Number of Chapter 11 Small Business Bankruptcies per 100,000 Small Businesses, FYs 2008–20

Bankruptcies per 100,000 small businesses



Sources: Department of Justice; Census Bureau; CEA calculations.

Note: FY 2020 is annualized with data through July 5.

Small business employment is trending back up. Beyond bankruptcies, 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 small businesses are beginning to reopen and more employees are coming back to work.

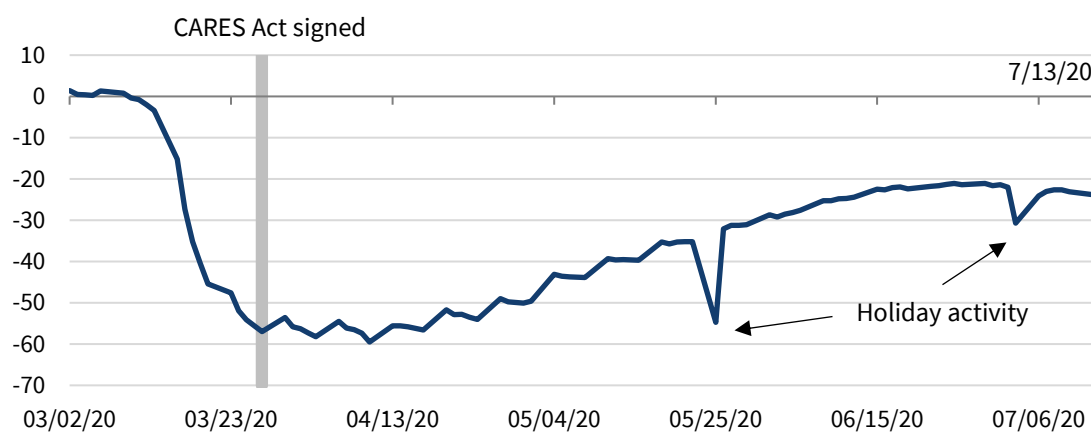
Homebase is a company that provides software to help small business owners manage employee timesheets. Since the start of the pandemic, Homebase has maintained a database of U.S. small business employment using data from more than 60,000 businesses that use their software. The data cover more than 1 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.

³⁰ The numbers for 2020 are annualized using data provided thus far for this fiscal year.

The Homebase data show the dramatic impact of the COVID-19 pandemic on small businesses. Figure 23 illustrates the daily change in the number of hourly employees working at small businesses using Homebase compared with a January baseline. After shelter-in-place orders became widespread in mid-March, the number of employees working fell to a level about 55 to 60 percent lower than normal conditions. As States begin to raise their shelter-in-place orders, hourly employees are beginning to go back to work. As of July 13, employees working at small businesses using Homebase are about 24 percent below normal conditions.

Figure 23. Change in the Number of Small Business Hourly Employees Working, 2020

Percent change (relative to January base)



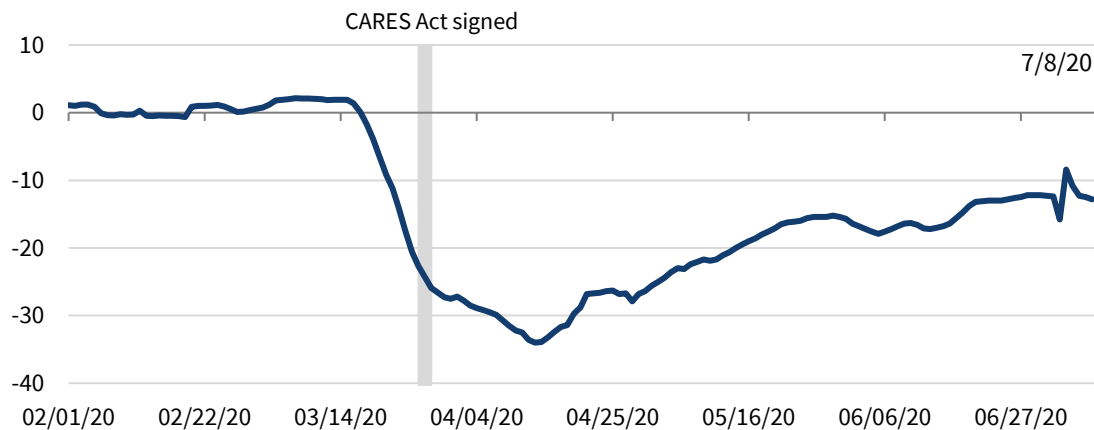
Source: Homebase.

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

Small business job openings. Opportunity Insights, a nonpartisan and not-for-profit research organization based at Harvard University, has also developed a data set to track the impact of COVID-19 on small businesses since January 2020. They pull together data from different sources of “credit card processors, payroll firms, and financial services firms” to construct time series to track the impact of COVID-19 (Chetty et al. 2020). Figure 24 shows that by mid-April, the number of small businesses open had fallen over 30 percent compared with January. Since then, as States have begun reopening, the number has increased; it is currently about 13 percent below that of January 2020. The small business closures, combined with the lack of a spike in bankruptcies, underline the goals of PPP: to allow small businesses to remain solvent while closed, and to allow the employer-employee relationship to remain intact even while many businesses were closed.

Figure 24. Change in the Number of Small Businesses Open, Seven-Day Average, 2020

Percent change (relative to January base)

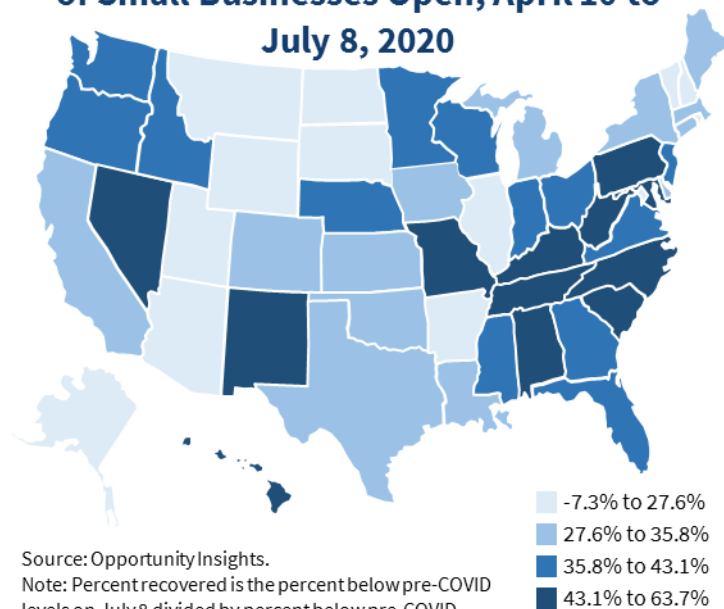


Source: Opportunity Insights.

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

The Opportunity Insights data also capture how the impact of COVID on small businesses varies by State. April 10 is when almost all shelter-in-place orders had been announced and is the lowest point of the number of small businesses open time series at the nationwide level. Figure 25 shows the States with the highest percentage of small businesses recovered since April 10, as of July 8. States in the east and southeast are the ones that have seen the largest gains from the nationwide trough.

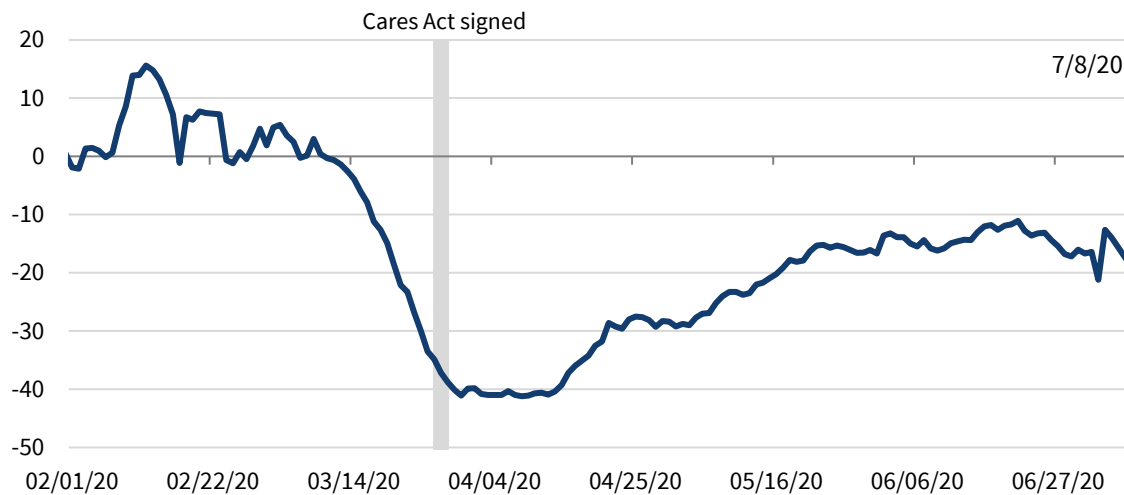
Figure 25. Percent Recovered of Number of Small Businesses Open, April 10 to July 8, 2020



Small business revenues. Opportunity Insights also tracks how much total small business revenue has fallen (figure 26). At its lowest point, which occurred in late March, small business revenue fell by about 40 percent. It has since begun to recover, until plateauing at about 15 percent below January levels. These data illustrate a quicker rebound in revenues compared with the data on the number of employees working and businesses being opened. The recent surge of cases in various states is the main driver for revenues plateauing as States reconsider restrictions.

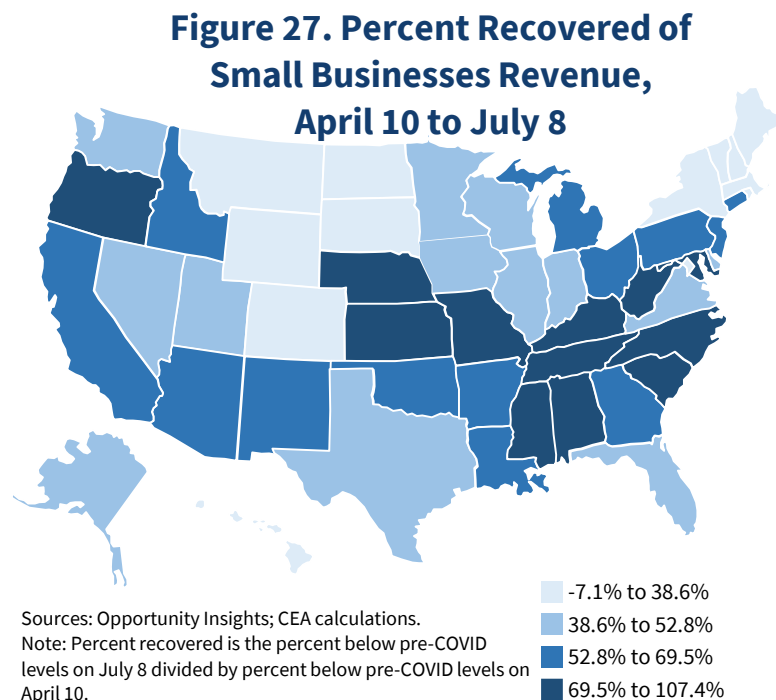
Figure 26. Change in Small Business Revenue, Seven-Day Average, 2020

Percent change since January 2020



Source: Opportunity Insights.

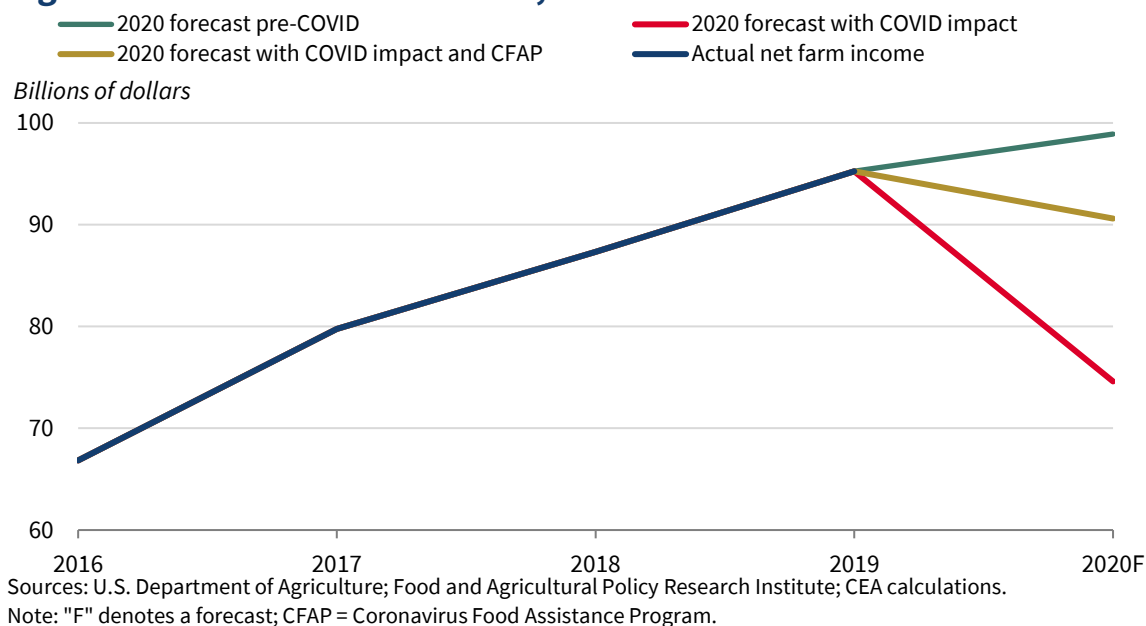
Figure 27 shows the states with the highest percent recovered of small business revenue since April 10, as of July 8. States in the east and southeast again are the ones that have seen the largest gains from the nationwide trough, but western and southwestern States are also rebounding. It is noteworthy that States like California, Kansas, and Arizona have seen recovery in small business revenue, yet the number of small businesses open have not recovered to the same extent, as seen in figure 25, but many small businesses are being adaptive and are finding new ways to maintain revenues.



The 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 the 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 in 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 pandemic 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 28).

Figure 28. U.S. Net Farm Income, 2016–20



The Impact of CARES Forbearance Measures

The latest consumer debt and credit indicators for April, May, and June have not shown the deterioration that would be expected given the unprecedented size of the negative income shock experienced by households. In contrast to the Great Recession, when consumer debt delinquencies spiked and lenders curtailed supply of credit to households amid an environment of worsening credit risk, reported delinquency rates across major consumer debt categories have fallen to date while credit limits extended to existing credit card holders have remained largely stable. The CARES Act may have contributed to this in two ways. First, the cash transfers provided under the CARES Act—in combination with households sharply reducing spending during the COVID-19 pandemic due to social distancing measures—may have freed up resources for households to make debt payments. Second, delinquencies are also down because of the forbearance provisions under the CARES Act.³¹ Some consumers who have not been able to meet debt payments have received accommodation from their lenders per these provisions, so that the lender does not report the account as delinquent. Equifax, however, reports an increase in loans that have received a “Possible Accommodation” from lenders.³² Accommodations are most noticeable in mortgages and student loans. Media outlets

³¹ Several States have also introduced forbearance provisions, complementing those included in the CARES Act. See, for example, <https://www.mcguirewoods.com/client-resources/Alerts/2020/4/cares-act-states-consumer-credit-protection>.

³² Equifax defines a loan accommodation as “any form of relief that lenders offer to a borrower in times of hardship (job loss, natural disaster, illness, military deployment, etc.)” In a recent analysis, Equifax categorized loans as “Possible Accommodations” based on a variety of indicators. For example, if a credit card account has a balance, but no payment due, that is a “Possible Accommodation.”

have reported rising delinquency, especially in mortgages; however, they do not take into account loan accommodation.³³ This subsection reviews the latest consumer credit indicators across various debt categories.

Mortgages. Mortgages make up the largest category of consumer debt, accounting for 68 percent of outstanding consumer debt. Since the Great Recession, mortgage debt has gradually risen to reach new highs, with households with prime credit (those with Vantage credit scores above 619) holding a larger share when compared with the pre-2008 period. As of March 2020, prime households held close to 80 percent of total household debt, whereas in 2008 they held less than 70 percent according to internal analysis at the Treasury Department.

Despite the record highs in outstanding mortgage balances, the severe delinquency rate (defined as the percentage of balances that are either 90 days or more past due in bankruptcy or foreclosure) has fallen to a new low. According to Equifax data, the severe delinquency rate for first mortgages has fallen from a high of more than 8 percent in the Great Recession to 0.6 percent as of June 30, 2020 (figure 29). In contrast to the Great Recession, when the mortgage loan severe delinquency rate spiked, the rate has fallen by 0.2 percentage point since February 2020, our pre-COVID benchmark date. Figure 30 shows that the delinquency rate was relatively stable in the immediate months leading up to the COVID-19 outbreak in the United States and only began to decline upon the passage of the CARES Act in late March.

The most likely explanation for this trend is the introduction of the mortgage loan forbearance option made available by the CARES Act. In the Equifax data, first mortgage loans reported with possible accommodations increased from 2.7 percent, when the CARES Act was passed, to 8.7 percent as of June 30 (figure 34). The Mortgage Bankers Association (MBA) reported that the share of loans under forbearance rose from 0.3 percent of all loans in early March to 8.6 percent as of June 7. Much of this increase occurred after the passage of the CARES Act, rising by 5.7 percentage points from April 1 to May 3. The MBA now estimates that 4.3 million homeowners are in forbearance plans.

Evidence from the Great Recession suggests there are strong dividends from relief measures such as forbearance that provide liquidity to borrowers in the housing market. Specifically, liquidity relief is more effective at alleviating defaults and boosting consumption than principal reductions that affect household net worth but have less impact on budget constraints (Ganong and Noel 2019). Beyond the impact on individuals, this fact has broader salience for the housing market as a whole, given evidence that foreclosure activity amplifies house price declines (Guren and McQuade 2020).

³³ If forbearance measures are not taken into account, a mortgage loan in forbearance would first be deemed late, then deemed 30 day delinquent, then 60 day delinquent the next month, and so on. For an example of a media outlet report that does not account for forbearance, see <https://www.washingtonpost.com/business/2020/07/14/new-mortgage-delinquencies-hit-record-high/>.

Figure 29. Mortgage Severe Delinquency Rate, 2006–20

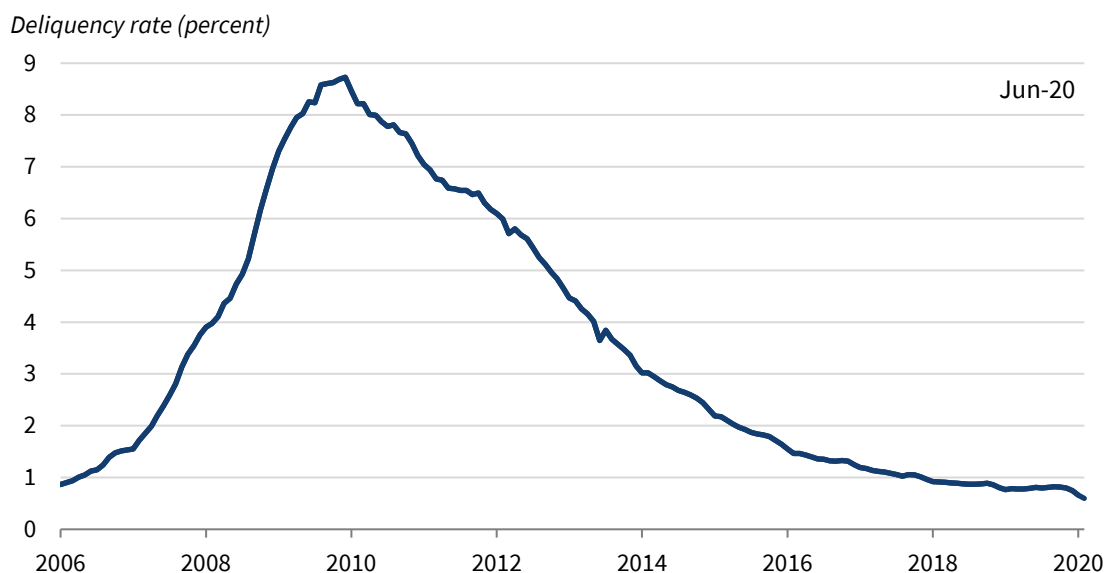
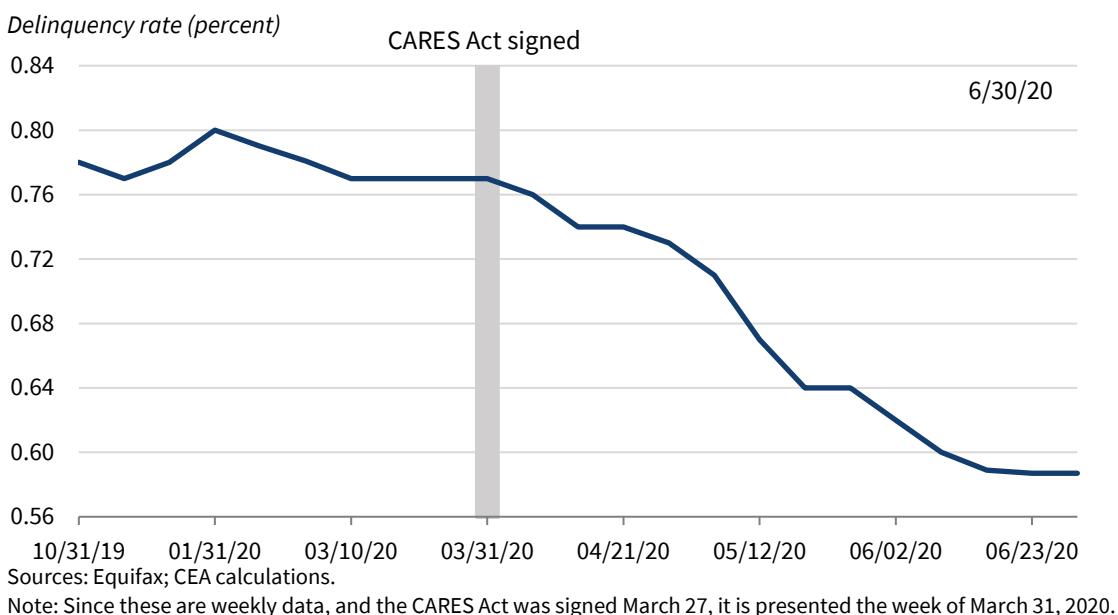


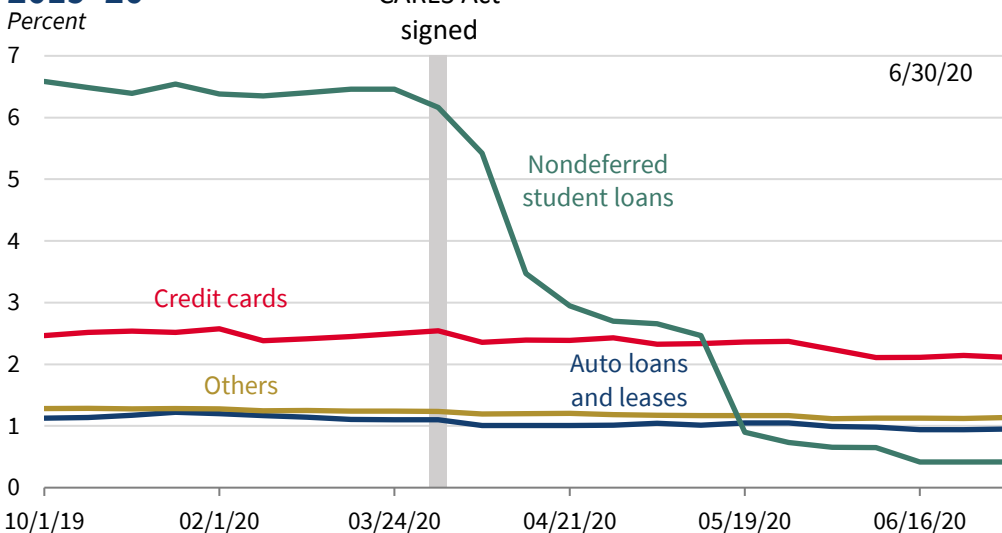
Figure 30. 90+ Day Mortgage Severe Delinquency Rate, 2019–20



The major categories of nonmortgage consumer debt include student loans (more than \$1.6 trillion), auto loans (\$1.4 trillion), credit card debt (\$797.0 billion), and consumer finance loans (\$118.4 billion). Since February 2020, severe delinquency rates in each of these consumer debt categories have either remained stable or decreased. The delinquency rate is also significantly well below that observed during the Great Recession.

Forbearance provisions have helped students. It is clear that the forbearance on Federal loans under the CARES Act has played a key role in forestalling an increase in student loans delinquencies. The severe delinquency rate for nondeferred student loans plummeted from a pre-COVID rate of 6.3 percent to only 0.4 percent as of June 30 (figure 31). When looking at student loans with possible accommodations, these loans have increased by 43.0 percentage points, from 48.5 percent on March 17 to 91.5 percent on June 30 (figure 32). Almost all federal student loans are seeing accommodation, including deferrals. Education-held student loan accounts can still be severely delinquent; but due to forbearance, they are not reported as delinquent. Instead, borrowers are reported as not owing payments on their balances.

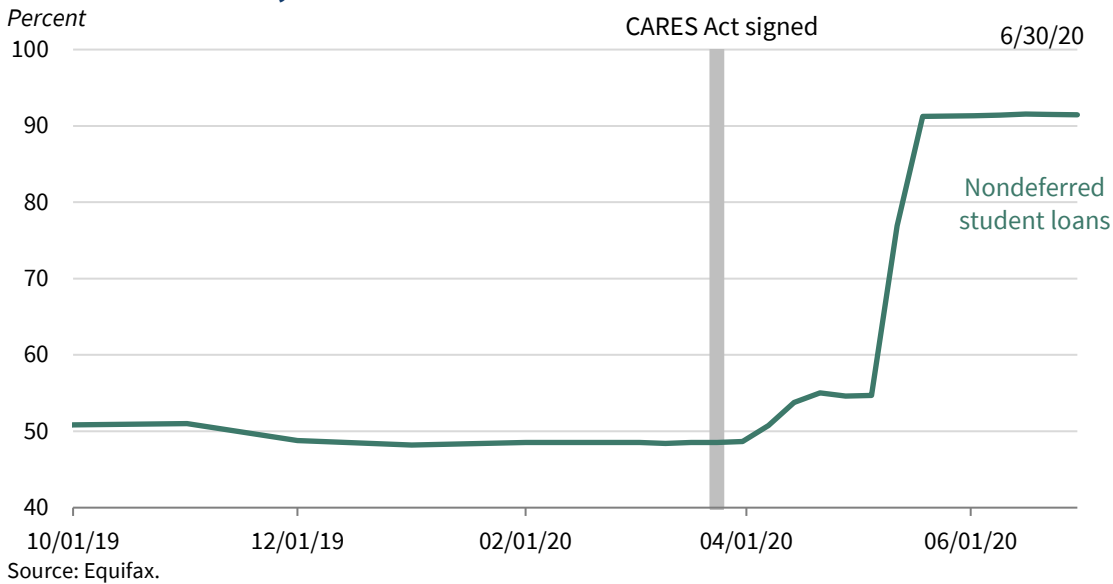
Figure 31. Severe Delinquency Rate by Nonmortgage Products, 2019–20



Sources: Equifax; CEA calculations.

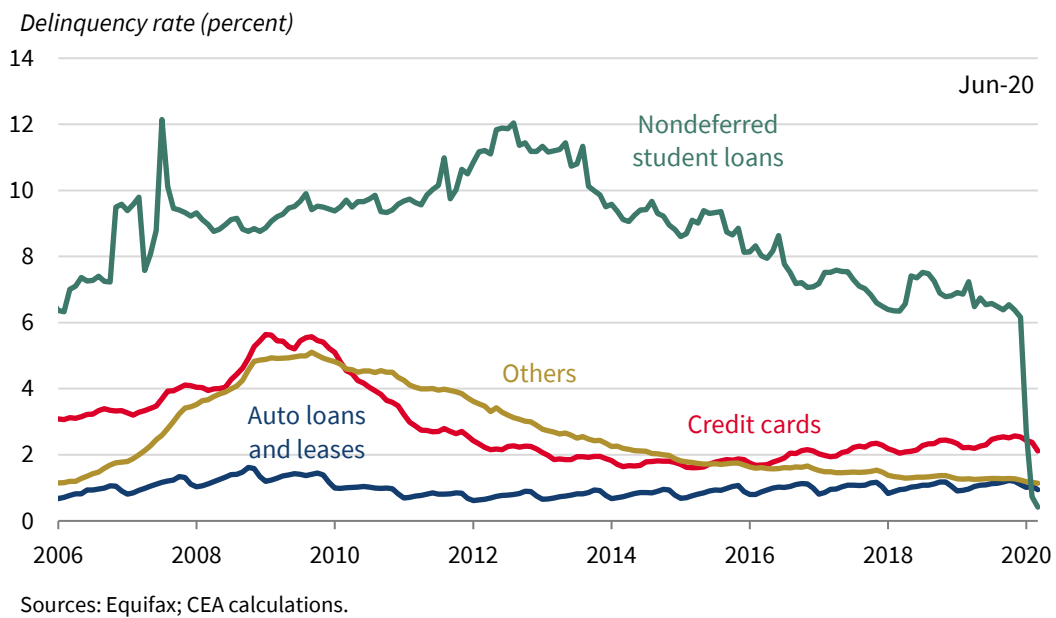
Note: Since these are weekly data, and the CARES Act was signed March 27, it is presented the week of March 31, 2020.

Figure 32. Percentage of Student Loans Reported with Possible Accommodation, 2019–20



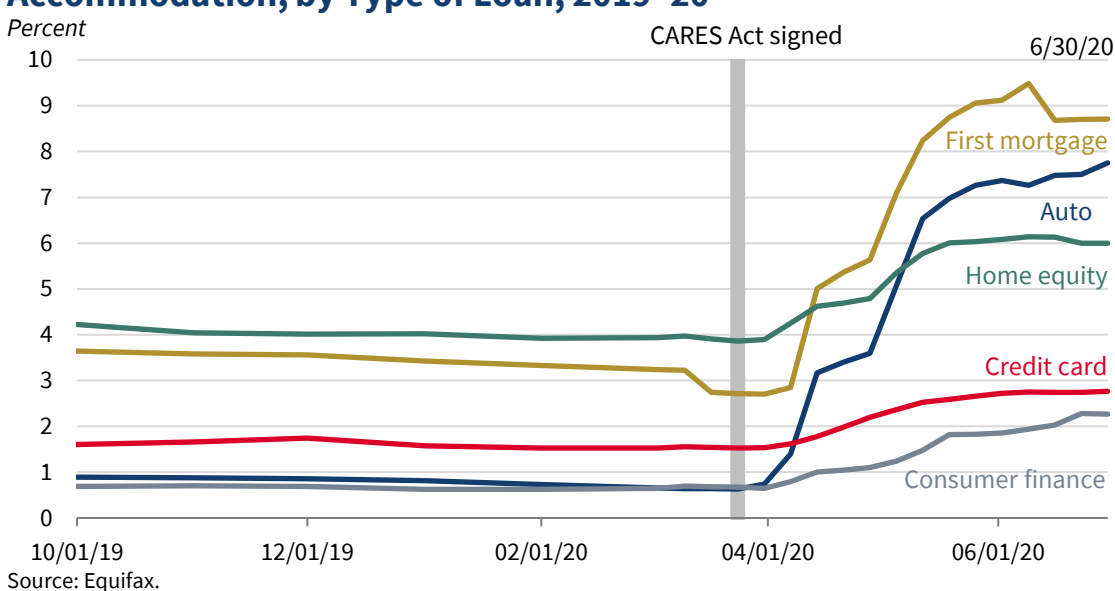
Delinquencies Are Down. Less dramatic but still noteworthy, the delinquency rates for auto balances and credit card balances have also remained stable or even fallen slightly, and remain significantly below that observed during the Great Recession (figure 33).

Figure 33. Severe Delinquency Rate by Nonmortgage Products, 2006–20



Severe delinquency for auto balances decreased from 1.2 percent pre-COVID (1.5 percent peak in 2009) to 0.9 percent currently; severe delinquency for consumer credit card balances edged down from 2.5 percent pre-COVID (above 5 percent in 2009) to 2.1 percent currently. At the same time, auto loans and leases have seen a large increase in possible accommodations, from just under 1 percent of balances before the CARES Act to 7.8 percent on June 30 (figure 34). However, credit card balances have seen an increase in possible accommodations of only about 1.2 percentage points since the beginning of March. Forbearance for auto loans may be masking a significant increase in distressed accounts; but for credit cards, this appears less likely.

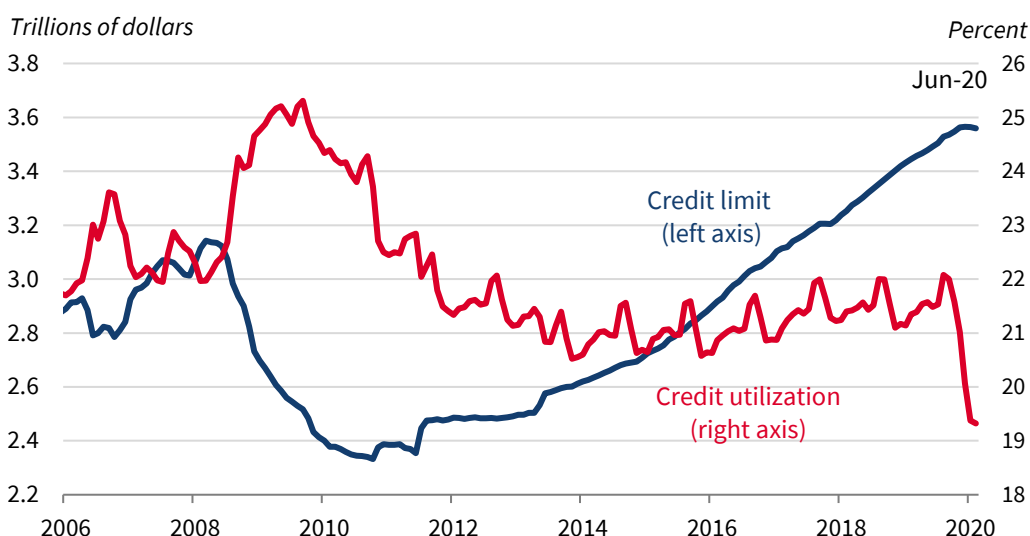
Figure 34. Percentage of Loans Reported with Possible Accommodation, by Type of Loan, 2019–20



Credit is available to households. One important liquidity lifeline for households is the availability of credit through credit cards. When lenders reduce the borrowing limit of credit cards, the amount of credit available to households decreases. From 2009 to 2011, lenders reduced credit limits on credit cards by 30 percent due to concerns about the creditworthiness of households, causing consumer credit utilization rates (the percentage of one's credit limit used) to surge as households were not reducing spending accordingly. In contrast, current data suggest that lenders have kept borrowing limits stable on credit cards; that, in combination with the drop in credit card spending due to social-distancing measures, this led to an overall decrease in consumer credit card utilization rates. Currently, credit card utilization rates stand at about 19.3 percent, compared with 21.6 percent in February 2020 and just over 25 percent at the peak of the Great Recession (figure 35). It is possible that the relief measures under the CARES Act may have indirectly contributed to this trend by providing enough financial cushion to households to avert delinquencies, which could have caused lenders to be less averse about lending. One caveat to this finding is that high-frequency data have shown a sharp drop in new

consumer credit (i.e., new credit card applications and accounts). It is unclear the extent to which the decrease is due to supply or demand factors.

Figure 35. Bank Card Total Monthly Limit and Credit Utilization, 2006–20



Sources: Equifax; CEA calculations.

Note: "Credit utilization" refers to the total bank card balance as a share of total bank card credit limit.

The delinquency rates across consumer debt categories were either stable or declined in April, May, and June, a contrast to what was observed during the Great Recession. Certainly, various factors other than the provisions of the CARES Act may have contributed to this, such as reduced spending of consumers due to social-distancing measures and the improved household balance sheets due to the deleveraging of nonprime households before the COVID-19 crisis. But the impact of relief measures is also clear. An important open question, however, is the extent to which the underlying financial stress is being delayed both by lender forbearance and by the COVID-19 shutdown itself, and whether the current favorable trend in consumer debt delinquency will continue as the economy reopens.³⁴

The Impact on the Financial Sector

As the threat of the COVID-19 pandemic increased, the financial system came under stress in February and March. Stock prices plummeted and market volatility rose. A recent analysis by Baker and others (2020) shows that COVID-19 has had an unprecedented impact on the stock market, especially in comparison with other infectious disease outbreaks, including the 1918–20 Spanish Influenza. Businesses, which already held a historically high level of debt at the beginning of 2020, were suddenly at higher risk of default, leading to a decline in the availability

³⁴ A recent analysis by the Office of Financial Research in the Treasury Department points to financial vulnerabilities among highly leveraged households, small business owners with personal debt, and households with student loans.

of credit, and households' ability to repay their debts in the face of job and income loss became uncertain. With potential defaults around the corner, lenders could have been in trouble. For example, life insurance companies and hedge funds are highly leveraged, meaning they would need to cut back lending, sell assets, or shut down if they experience even moderate losses. Under these market conditions, monetary or fiscal problems abroad—especially in Europe, China, or emerging market economies—could have spilled over to the United States, compounding the stress on the financial system.

While vulnerabilities remain, the CARES Act, together with emergency powers under section 13(3) of the Federal Reserve Act, authorized the Federal Reserve and Treasury Department to take action to stabilize the system and prevent a financial crisis like that seen during the Great Recession. In accord with the Federal Reserve's *Financial Stability Report*, the Federal Reserve took three types of actions: monetary policy actions, actions to stabilize short-term funding markets, and direct support for credit. In addition, Chairman Jerome Powell testified that the Federal Reserve “took measures to allow and encourage banks to use their substantial capital and liquidity levels built up over the past decade to support the economy during this difficult time.” Below we summarize some of the findings from the *Financial Stability Report* (Federal Reserve 2020).

Monetary policy actions. The Federal Reserve lowered its policy rate close to zero to make borrowing less expensive. The Federal Open Market Committee began buying Treasury securities and agency mortgage-backed securities after investors moved toward cash and short-term government securities due to volatility and uncertainty, which had the effect of smoothing and improving market conditions.

Stabilizing short-term funding markets. Investors' cash dash also strained businesses' ability to fund operations through commercial paper as they stopped accepting commercial paper and pulled out of money market mutual funds that hold it with other short-term debt instruments. According to the *Financial Stability Report* (Federal Reserve 2020), the Federal Reserve responded by setting up several Federal Reserve facilities. Eight of these facilities are supported by a CARES Act appropriation to the U.S. Treasury to ensure that the Federal Reserve will not have to absorb losses. This collaboration with the Treasury enhances business liquidity through the establishment of 11 financial facilities (in the case of the PPP, the collaboration also includes the Small Business Administration). In these facilities, various Federal Reserve Banks lend to private firms or to State and local governments. In general, the facilities can be divided into two groups: those that are aimed at the supply of credit to the macroeconomy (which rely on CARES Act capital funding), and those aimed at funding markets (which are backed by the Treasury's exchange stabilization fund or are collateralized). The Treasury offers capital under the authority of Title IV of the CARES Act to support the 8 macroeconomic facilities established by the Federal Reserve under section 13(3) of the Federal Reserve Act.

Direct Support for Credit. As it became apparent that the COVID-19 pandemic and containment measures would have long-lasting economic consequences, the *Financial Stability Report* (2020) points out that borrowing became more expensive for municipalities, corporations, and issuers of asset-backed securities (bundles of loans to households and businesses for automobiles, equipment, credit card purchases, etc.). Small and medium-sized businesses needed to borrow more as well to cover costs while revenues fell, even as borrowing became more expensive. The facilities aimed at the supply of credit to the macro-economy are:

- the Primary and Secondary Market Corporate Credit Facilities to provide liquidity for corporate bonds,
- the Term Asset-Backed Securities Loan Facility that will support the issuance of asset-backed securities (ABS) backed by student loans, auto loans, credit card loans, and loans guaranteed by the Small Business Administration,
- the Municipal Liquidity Facility to help State and local governments manage cash flow pressures after the municipal bond market showed signs of stress, and
- the Main Street Lending Program and the Paycheck Protection Program Liquidity Facility to support lending to small- and medium-sized businesses.

The Facilities aimed at funding markets are:

- the Money Market Mutual Fund Liquidity Facility,
- the Commercial Paper Funding Facility (both backed by capital from the Treasury's Exchange Stabilization Fund),
- and the Primary Dealer Credit Facility (which is collateralized) to support the flow of credit to short-term funding markets,.

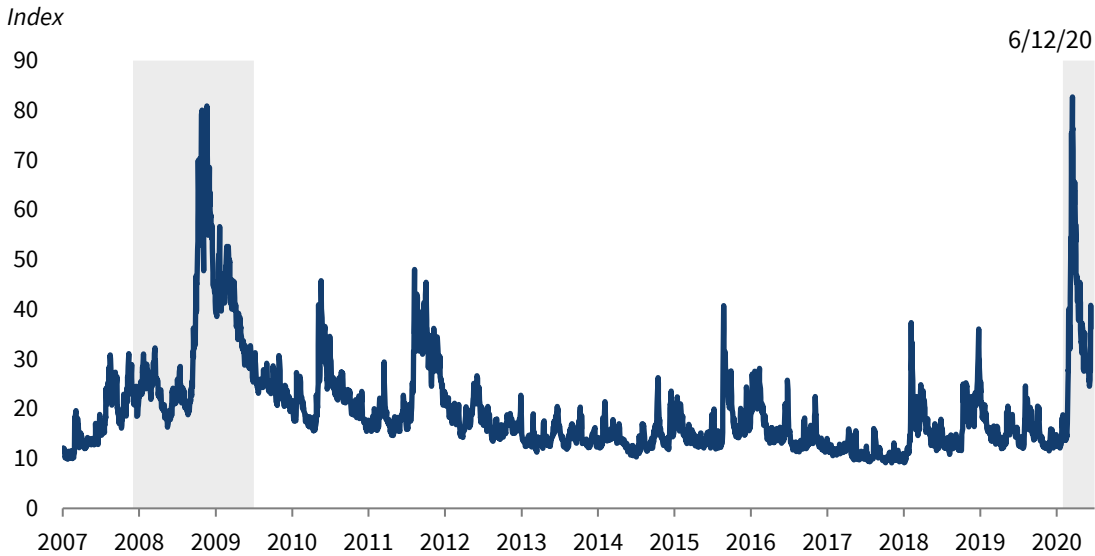
These facilities resulted in a drop in the issuance of overnight commercial paper and redemptions from money market funds, easing market strains.

Commercial and industrial loans at the Nation's commercial banks grew \$726 billion during the nine weeks from March 4 through May 6, far in excess of the growth during any similar interval since records were first collected in 1973. Li, Strahan, and Zhang (2020) argue that banks were able to accommodate this demand because of Federal Reserve bank liquidity programs, strong pre-shock bank capital, and coincident inflows from depositors.

A variety of indicators of financial distress spiked early in the COVID-19 epidemic period but have receded since then. Although many other shocks have hit the economy, including news about the epidemic itself, one can argue that public policy has mitigated the contagion of the epidemic into 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 36). It has generally fallen since then, but remains somewhat elevated (as of June 12, the VIX was 36).

Figure 36. 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 37).

Figure 37. BBB Corporate Bond and 10-Year Treasury Note Spread, 2006–20



Source: Bloomberg.

Finally, 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 June 24 had recovered to 3,050 (a rebound of 813 points, or a recovery of 71 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.

CHAPTER 5

Comparison with the Great Recession

In this chapter, we provide a comparison of the current COVID-19 crisis with the Great Recession of 2007–9. We assess the precrisis macroeconomy vis-à-vis a series of indicators and then reflect on the policy measures adopted to deal with the situation. As we show, the U.S. economy entered the COVID-19 crisis in a stronger position than it did before the 2007–9 Great Recession, when highly leveraged household and bank balance sheets created major macroeconomic vulnerabilities. In contrast, a potential source of risk in today's economy is the growth of nonfinancial business debt in recent years.

Crisis-Driving Forces

The financial crisis of 2008–9 and the resulting Great Recession started with an overheated housing market. In 2006, housing market weakness began to emerge, first in the form of longer selling delays—indicating a deterioration in housing liquidity—followed by deceleration and reversal in house price growth. As discussed by Garriga and Hedlund (2019), the fundamental causes of this reversal continue to be debated, with some scholars focusing on the role of subprime lending, others looking at the riskiness of the mortgage products themselves (high loan-to-value or payment-to-income loans, adjustable rates, balloon payments, etc.), and others assigning primary blame to housing investors who, as non-owner-occupiers, exhibited higher propensities to default. Regardless, what is clear is that the weakness in housing spilled over into the rest of the economy because of the damage it wreaked on household and bank balance sheets alike.

By March 2007, there were reports that the housing slump had hit some hedge funds hard. In April of that year, New Century Financial, the largest independent U.S. provider of subprime mortgages, filed for bankruptcy. In their book *First Responders*, Bernanke, Geithner, and Paulson state that “if we had to pick the date that the crisis began, it would be August 9, 2007, when the French bank BNP Paribas froze withdrawals from three funds that held securities backed by U.S. subprime mortgages” (p. 12). By late summer of 2007, the investment bank Bear Stearns was liquidating two hedge funds that were heavily invested in subprime mortgages.

Over the next year, the contagion spread to every corner of financial markets and turned into a full-blown crisis. Facing deteriorating balance sheets and frozen markets, lenders cut the supply of credit to the economy, which caused households and businesses to curtail spending. As the economy hemorrhaged jobs, higher unemployment accelerated the collapse in the housing market, which further fueled the cascading spiral of economic misery.

The economic harm wrought by the financial crisis of 2008 and the subsequent Great Recession was severe and historic. The Federal Reserve Bank of San Francisco found that “the downturn profoundly damaged the labor market. Nonfarm payroll employment declined by about 8.5 million jobs from peak to trough. The unemployment rate increased from 4.7 percent in November 2007 to a peak of 10.1 percent in October 2009.” Moreover, unemployment remained above 9 percent for two years after the technical end of the recession (i.e. when GDP stopped contracting), and the average duration of unemployment for jobless workers stayed near historic highs. Households saw their housing wealth evaporate as prices fell by nearly 30 percent on average—with larger declines on the coasts and in the sand States—at the same time that their retirement portfolios suffered a 50 percent drop in the Dow Jones from peak to trough on March 9, 2009. In addition, 3.8 million homes were foreclosed between 2007 and 2010 (Dharmasankar and Mazumder 2016). Even with all the major interventions that were considered unprecedented at the time, it took years for the U.S. economy to fully recover as scars from the crisis persisted.

The origins of the COVID-19 recession were quite different. The U.S. economy began 2020 in a state of historic strength, with record-low unemployment and broad-based GDP growth. The earliest warning signs came from China, where the virus originated, and where Chinese efforts to contain the virus had the effect of impairing U.S. supply chains. On January 31, the United States banned travel from China and later imposed more travel restrictions in late February after community spread began in the United States. On March 13, President Trump announced a national emergency, and on March 16 the U.S. government released “15 days to slow the spread” COVID-19 guidance. Over the next two weeks, most States began instituting lockdown measures, such as restaurant closures, shelter-in-place orders, and other mandatory social distancing measures. However, research from Opportunity Insights shows that Americans were already privately adjusting their behavior in response to perceived risks from the virus, even before State restrictions were announced or went into effect.

This narrative timeline describes a situation where global supply chain shocks morphed into a dangerous mix of mutually reinforcing shocks to both the supply and demand sides of the economy. Social distancing caused people to refrain from going to work—thereby limiting the economy’s ability to produce goods and services—while simultaneously lowering demand as people avoided group-based consumption. Although the economic contagion was first most severe in industries such as travel and hospitality, it quickly spread elsewhere through the complex interlinkages between sectors in the U.S. economy.

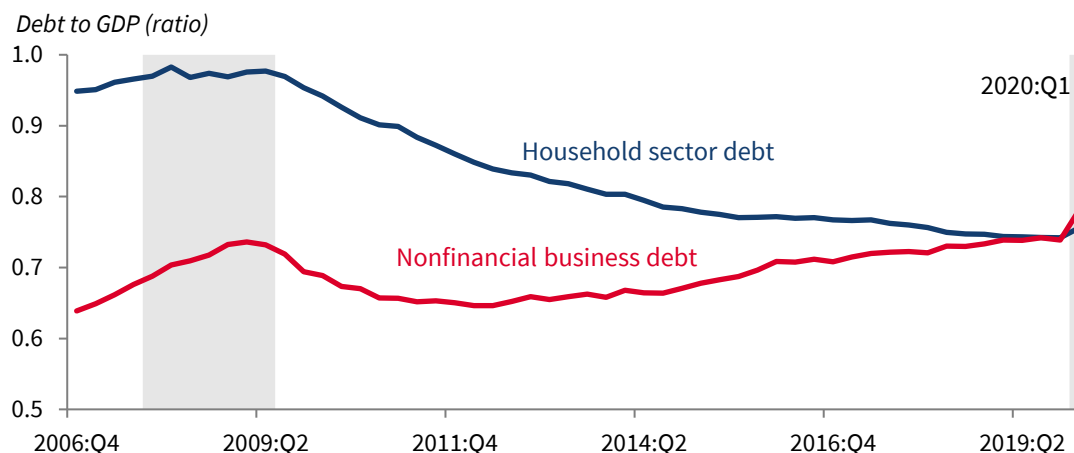
The Strength of the Economy Before the Crisis

Households. From 2000 to 2008, household liabilities as a share of personal disposable income rose from 96 percent to 136 percent before falling back to below 100 percent before COVID-19, according to the Federal Reserve’s Flow of Funds data. However, examining only aggregates can obscure the true level of risk that is captured more accurately by the tails of the distribution. Even along this dimension, however, the U.S. economy appears to be in a stronger position than back in 2006 before the start of the financial crisis. The share of mortgages with debt-to-income ratios above 50 percent has fallen from 11.0 percent in 2006 to only 6.9 percent in 2018. While the loan-to-value ratio for new mortgages is similar to what it was in 2006, credit has shifted toward borrowers with high credit scores. Whereas 14.1 percent of borrowers taking out a mortgage had below a 620 credit score in 2006, that share was only 3.3 percent in 2018. Borrowers are also taking out safer loans. The share of mortgages with less than full amortization fell from 29.2 percent in 2006 to 0.6 percent in 2018, and mortgages where borrowers were only required to provide minimal documentation at origination saw their share drop from 34.5 percent in 2006 to 1.8 percent in 2018 (Davis et al. 2019). Looking beyond mortgages, the share of credit card volume going to subprime borrowers was under 2.5 percent in 2019, compared with 3.4 percent before the financial crisis, according to the Consumer Financial Protection Bureau (CFPB). The CFPB also shows that, for auto loans, the share going to subprime borrowers was under 15 percent in 2019 before COVID-19, versus nearly 20 percent in 2006.

Before COVID-19, researchers ran stress tests on households to examine how negative shocks to the economy would translate into defaults on household debt. One study simulates a fall in house prices similar to what occurred in the Great Recession and generates a much smaller peak in foreclosures; the average shocked stressed default rate—which represents for a particular loan its expected default rate if it were hit shortly after origination with a replay of the financial crisis—was 9.7 percent in 2018 compared with 34.8 percent in 2006 (Davis et al. 2019). Another study simulates a large house price decline and unemployment spike meant to mimic the financial crisis. When faced with the same shocks from 2007 to 2009, the economy in 2020 generates fewer defaults because of healthier household balance sheets (Bhutta et al. 2019).

Nonfinancial businesses. While households were in good shape before the COVID-19 pandemic, the nonfinancial business sector had become more leveraged. By early 2020, the aggregate debt-to-GDP ratio for nonfinancial businesses had reached levels not seen since the financial crisis (figure 38). This ratio has continued to increase in recent months.

Figure 38. Household Sector and Nonfinancial Business Debt to GDP, 2006:Q4–2020:Q1



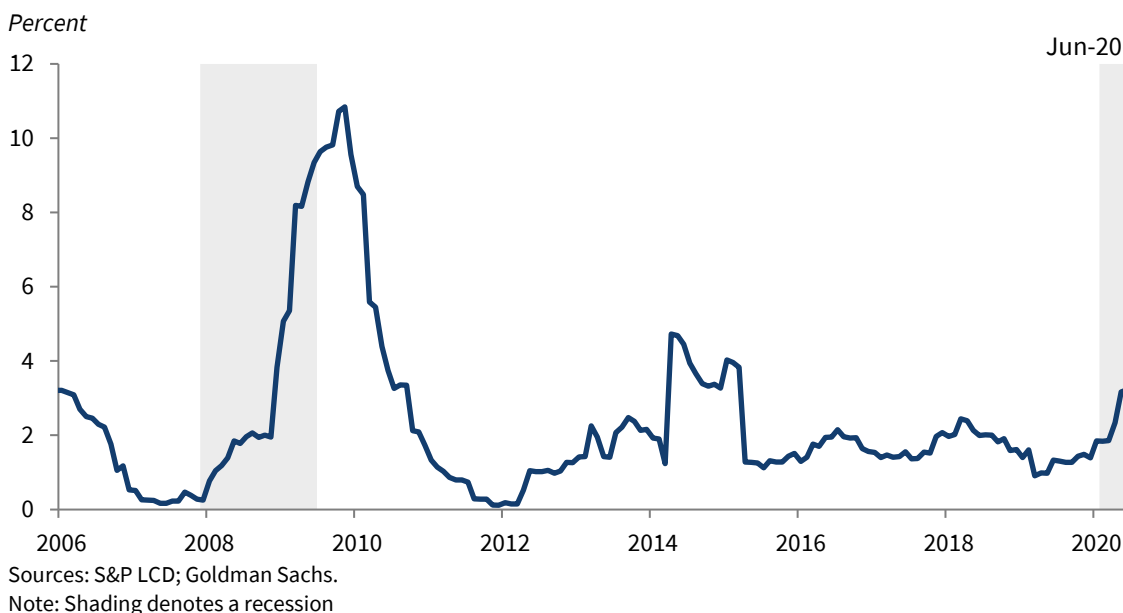
Sources: Bureau of Economic Analysis; Federal Reserve Board; CEA calculations.

Note: Household sector debt includes debt owned by nonprofit organizations. Debt is defined as outstanding loans and debt securities. Shading denotes a recession.

One reason nonfinancial business debt has risen, however, is that interest rates are at historic lows. This reduces the burden of servicing debt. A basic measure of debt burden is the ratio of company earnings to their interest payments, or the interest coverage ratio. In recent years, the interest coverage ratio for the median firm has remained high (Federal Reserve 2020). The sales-weighted shares of nonfinancial public corporations that use more than 30 percent, 40 percent, or 50 percent of their earnings to make interest payments have all been declining, and as of 2020, these shares were all lower than at the start of the Great Recession (Crouzet and Gourio 2020).

Despite historically low costs of borrowing, the Federal Reserve and the International Monetary Fund have expressed concern about the quality of corporate debt. In early 2020, about 50 percent of investment-grade debt was rated BBB, an amount that was near a historical high. BBB is the lowest rating category for investment-grade debt, and so carries more risk of default than higher-grade debt. Another concern is that since 2015, loans to large corporations have increasingly focused on highly leveraged firms. Figure 39 shows the default rate for leveraged loans over time. In February 2020, the rate was higher than at the start of the Great Recession; and in the last few months, it has been increasing. (Federal Reserve 2020; IMF 2019, 2020). Overall, the second quarter of 2020 has had the highest quarterly volume of defaults in leveraged loans since the first quarter of 2009 (LCD News 2020).

Figure 39. Leveraged Loan Annual Default Rate, 2006–20



Financial institutions. According to data compiled by the Federal Deposit Insurance Corporation (FDIC), as of 2019:Q4 the commercial banking and savings and loan sector stood at a record, or near-record, in various measures of industry solvency and liquidity. This status was largely attributable to the continuous growth in the economy since the end of the Great Recession and the passage and continuing implementation of the Dodd-Frank Act of 2010, which dramatically raised regulatory oversight and capital standards for the industry.

The number of banks on the FDIC’s “Problem Bank List” leading up to COVID-19 was exceptionally low. The number of problem banks fell from 76 in 2007:Q4 to 51 by 2019:Q4, the lowest number of problem banks since 2006:Q4. Total assets of problem banks increased from \$22 billion in 2007 to \$46 billion in 2019. The commercial bank sector also entered the crisis with stable indicators of asset quality.

Monetary and fiscal policy capacity. The U.S. economy entered the 2007–9 financial crisis with the Federal Funds rate at 5.25 percent and a debt-to-GDP ratio of about 62 percent. At that time, it was thought that the Federal Reserve had significant ammunition to stabilize the economy through its usual toolkit of rate reductions, and the Federal government had considerable fiscal capacity to act through changes to taxes and spending. However, the consequences of cutting interest rates to the zero lower bound for several years and increases in deficit spending meant that the U.S. economy entered COVID-19 with the Federal Funds rate at only 1.6 percent and the debt-to-GDP ratio at 107 percent. In other words, the economy entered COVID-19 with reduced fiscal and monetary capacity.

The Policy Response

The Federal government's policies to address the financial crisis of 2007–9 evolved over a number of years, and they ranged from the fiscal stimulus of increased government expenditures for infrastructure, health, education, energy independence, tax rebates targeting low- and middle-income families and tax incentives for business investment to assistance on refinancing or modifying mortgages to monetary open market operations and liquidity-enhancing programs to bailouts and subsidies of various entities and, finally, to regulatory reform. It was a bipartisan effort that began in 2007 as policymakers observed a decline in housing markets and foresaw a recession and possible financial turbulence. This section summarizes some of these policy approaches.

Throughout that period, the Federal Reserve employed open market operations and later a program of large-scale asset purchases (commonly referred to as quantitative easing) after the Federal Funds rate hit the zero lower bound. The Federal Reserve also took a variety of approaches to help provide liquidity to various markets and market participants. For example, beginning in December 2007, the Federal Reserve initiated the Term Auction Facility (TAF), which provided term discount window loans to depository institutions in sound financial condition. In March 2008 the Federal Reserve introduced the Term Securities Lending Facility under Section 13(3) of the Federal Reserve Act to address funding pressures faced by primary dealers, who serve as the trading counterparties for the Federal Reserve's open market operations. Also in March 2008, the Federal Reserve introduced the Primary Dealer Credit Facility, which constituted an overnight loan facility for primary dealers. In November 2008, the Term Asset-Backed Securities Loan Facility, a joint program of the Federal Reserve and the Treasury, was introduced to generate demand for certain asset-backed securities—including those backed by car, student, and small business loans, as well as credit card debt—by accepting those securities as collateral for loans. The Federal Reserve also introduced a \$1.25 trillion Agency MBS [mortgage-backed security] Purchase Program in January 2009 in order to support the housing and mortgage lending markets.

Besides these and other Federal Reserve interventions, Congress passed significant stimulus bills over the course of the crisis. In February 2008, in an effort to ameliorate the growing crisis, the Economic Stimulus Act of 2008 was passed, offering tax recovery rebates to individuals and their dependents, and targeting low- and middle-income taxpayers. The Act also created incentives for business investment by permitting the accelerated depreciation or immediate expensing for certain items. In October 2008, the Emergency Economic Stabilization Act of 2008 was passed, allocating \$700 billion to address the financial crisis by purchasing or insuring troubled assets and attempting to avert the failure of key systemic financial institutions. This established the Troubled Asset Relief Program (TARP). In 2009, the American Recovery and Reinvestment Act (ARRA) was passed, which included tax cuts and government expenditures totaling over \$800 billion, for national infrastructure, energy independence, education, health care, and tax relief. The Federal Government also stepped in to bail out the auto industry. In

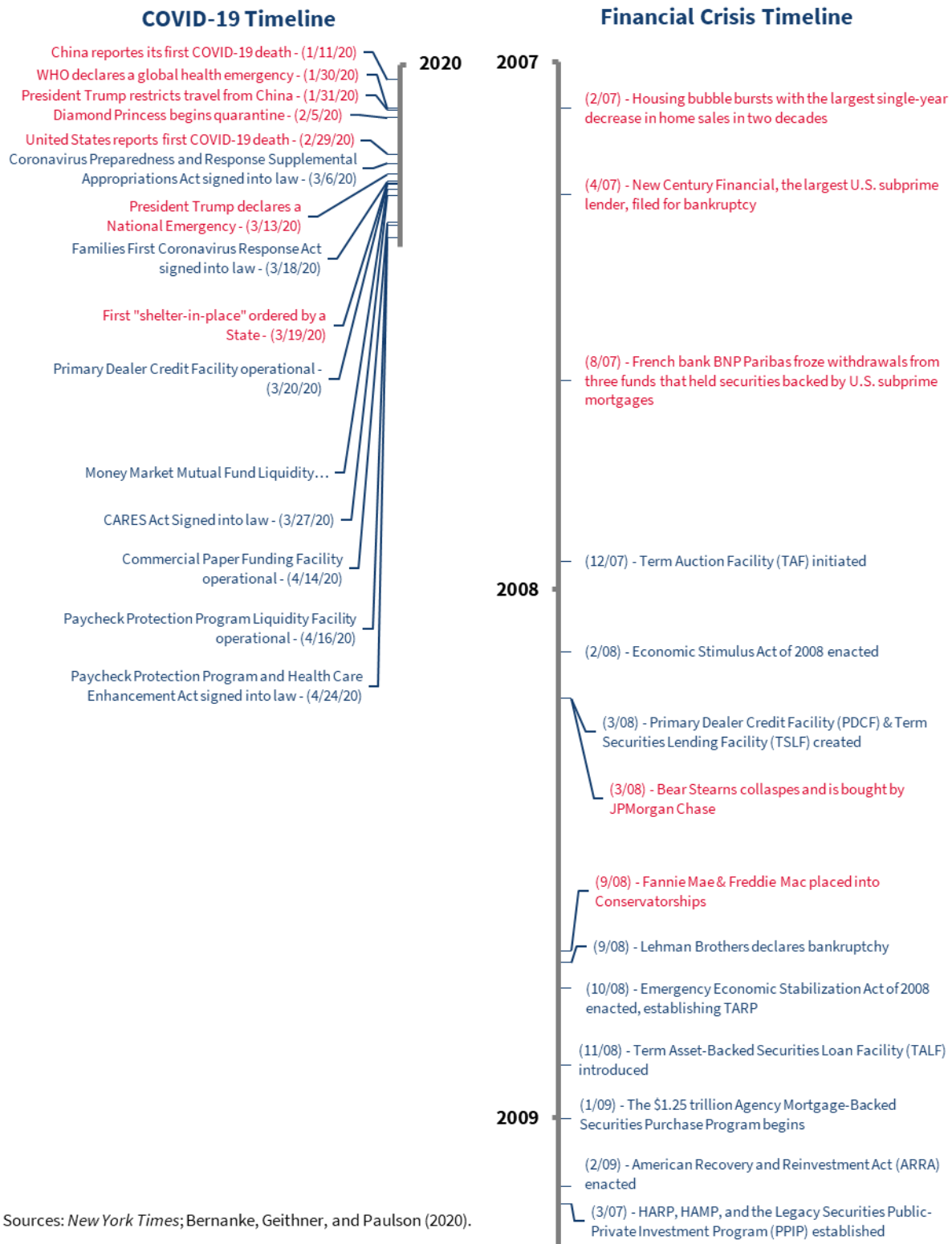
2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act was enacted, entailing an array of regulatory reforms.

Additionally, the Federal government took several actions to directly aid the housing market. It instituted the First-Time Homebuyer Tax Credit between 2008 and 2010, with the goal of stimulating home buying and house prices. The government also created the Home Affordable Modification Program (HAMP) and Home Affordable Refinance Program (HARP) to prevent distressed or underwater borrowers from going into foreclosure. The main distinction between the two was that HAMP modified a borrower's existing mortgage contract—often by extending the term or lowering the rate to reduce payments—whereas HARP loosened underwriting requirements to allow underwater borrowers with negative home equity to take advantage of lower interest rates through refinancing.

Relative to the Great Recession, the Federal government has responded with even greater speed and coordination to COVID-19, and with an even more expansive suite of policies (see figure 40). The Federal Reserve rapidly cut the Federal Funds rate target range to 0 percent at the effective lower bound (0.00 to 0.25 percent) and began to reactivate liquidity facilities that it had set up during the 2007–9 financial crisis. In a matter of just a couple of months, the Federal Reserve balance sheet has jumped by over \$3 trillion compared with the five years it took to swell by that amount during the Great Recession. The Federal Reserve has also created Main Street Lending Facilities to direct relief to a larger swath of small and mid-sized firms.

The fiscal response to COVID-19 has also been swifter and larger (figure 40). 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 COVID-19 Response Act and the CARES Act both within March 2020. Moreover, the CARES Act is slated to deliver \$2.2 trillion in stimulus compared with a bit over \$800 billion by the ARRA. In terms of composition, both stimulus bills delivered direct aid to households in the form of rebates and unemployment insurance. The ARRA also contained a payroll tax cut and direct aid to States to address revenue shortfalls. Unlike in the Great Recession, however, the CARES Act during COVID-19 established the PPP, which has authorized up to \$659 billion in loans to small businesses to help them maintain payrolls and avoid insolvency.

Figure 40. Fiscal and Monetary Responses to COVID-19 and the Financial Crisis



The CARES Act's Focus on Low-Income Households

A primary focus of the CARES Act and other relief bills has been the provision of cash and economic support to economically vulnerable households. In this section, we compare these measures with those adopted during the Great Recession.

The Economic Stimulus Act of 2008, passed during the Bush Administration, included an individual income tax “recovery rebate.” The typical tax filer received a credit of up to \$600 or up to \$1,200 for joint filers. Eligible individuals received an additional \$300 per dependent child. Individuals without a net tax liability were still eligible for the rebate, but only if they had earnings of at least \$3,000 annually. The rebate phased out at a rate of 5 percent for incomes over \$75,000, and \$150,000 for those filing jointly (the same as the CARES Act).

Under the CARES Act, Economic Impact Payments are larger and more widespread than both the Economic Stimulus Act and ARRA, which was passed in 2009 under the Obama Administration. In response to the COVID-19-induced crisis, the U.S. government swiftly passed a provision that offers Economic Impact Payments to individuals. While the phaseout rate and income thresholds are the same as they were under ARRA, the CARES Act offers up to \$1,200 to individuals and \$2,400 to joint filers (El-Sibai et al. 2020). The CARES Act stimulus payment is more generous than ARRA was for eligible individuals with children; parents can receive an extra \$500 per dependent child under the age of 17. Unlike the 2008 recovery rebate, the CARES Act does not require a minimum tax liability to receive the full rebate (Marr et al. 2020).

Of the \$787 billion ARRA stimulus package, about \$12 billion helped finance various public workforce programs to accommodate expanded participation (table 8). State unemployment insurance agencies received \$500 million in administrative support funding and \$7 billion in modernization funds in order to address increased demand (BLS 2014). By comparison, the Families First COVID-19 Response Act authorized \$1 billion in additional funding to support UI administration to assist States with processing increased caseloads and expanded programs (Emsellem and Evermore 2020; Goger, Loh, and George 2020).

Table 8. Funding of Major Workforce Program Initiatives of ARRA, 2009

<i>ARRA funding category</i>	<i>Funding amount (billions of dollars)</i>
UI Administration	0.5
UI Modernization	7.0
Wagner–Peyser Act grants to States	0.15
Wagner–Peyser Act reemployment services	0.25
Workforce Innovation Act Adult	0.5
Workforce Innovation Act Dislocated Worker	1.25
Workforce Innovation Act Dislocated Worker National Reserve	0.2
High Growth and Emerging Industry grants	0.75
Workforce Innovation Youth	1.2
Job Corps	0.25
YouthBuild	0.05
Senior Community Service Employment Program	0.12

Sources: Bureau of Labor Statistics; Bradley and Lordeman (2009).

In addition to these funds listed in table 8, Congress funded additional enhancements and extensions to the UI program. In response to the rise in the number of workers unemployed for more than 26 weeks, Congress enacted a temporary extension to UI. This Emergency Unemployment Compensation included additional tiers of benefit weeks to supplement regular State UI and expanded Extended Benefits programs. In combination, between November 2009 and September 2012 these programs extended the maximum number of weeks UI recipients could receive benefits for up to 99 weeks.

The Recovery Act not only expanded UI duration, but also included a Federal Additional Compensation benefit that funded an additional \$25 per eligible worker in weekly UI benefits through the temporary Emergency Unemployment Compensation. This increased benefit cost the Federal government \$20.1 billion during 2009–11. The permanent Extended Benefits program became completely federally funded through January 1, 2010, and State eligibility rules were relaxed to make more unemployed workers eligible. These Extended Benefits cost the Federal government \$24 billion during 2009–11. ARRA also temporarily suspended the taxation of the first \$2,400 of UI benefits.

Under the CARES Act, UI benefits are expanded for up to an additional 13 weeks and States are allowed to eliminate the mandatory one-week waiting period before benefits can be released to recipients. It also offers a significant increase in additional UI income—24 times greater than the additional benefit that was offered during the Great Recession. Workers claiming UI now receive a \$600 weekly supplement. Furthermore, unlike the Recovery Act, the CARES Act added a new program to expand eligibility for UI benefits to include the self-employed, gig workers, and other types of workers who would not otherwise qualify for regular UI benefits.

Under ARRA, individuals eligible for UI were referred to the Employment Service for job referral and reemployment services. ARRA allocated an additional \$250 million in Reemployment Services Grants to local employment offices to better serve UI recipients. The Bureau of Labor Statistics notes that, despite increased funding, the local offices still faced major constraints, which resulted in increased enrollment in low-cost services (e.g., orientations, assessments), but smaller increases in expensive and labor-intensive services (e.g. counseling, education, training). Other employment services, such as the Workforce Innovation Dislocated Worker program and the Workforce Innovation Adult program, also received increased funding (see table 8).

The CARES Act does not increase funding for Reemployment Services Grants or Workforce Innovation and Opportunity Act formula programs. As outlined in a previous CEA report (2019) many government training programs lack rigorous evidence based results demonstrating their effectiveness at training or retraining workers and getting them employed. The CARES Act does, however, provide \$345 million for Dislocated Worker Grants to prevent, prepare for, and respond to the coronavirus. Additionally, the CARES Act does offer incentives to States to adopt or make better-use of Short-Time Compensation programs, which would allow employers to avoid laying off their employees by reducing their hours. Under this program, workers would still be eligible for UI benefits to make up for their reduced working hours.

Tax Provisions. The ARRA stimulus package included about \$14 billion for the Economic Recovery Payment, a one-time payment of \$250 to seniors, persons with disabilities, and veterans. The Recovery Act also authorized the Making Work Pay personal tax credit for 2009 and 2010. The provision provided a refundable tax credit of up to \$400 for single working individuals and up to \$800 per couple. The credit phased out for incomes over \$75,000 (or \$150,000 for joint filers) at a rate of 2 percent.

ARRA lowered the refundability threshold of the Child Tax Credit (CTC) and increased the Earned Income Tax Credit (EITC), thereby allowing more low-income people to claim the credit. The Recovery Act expanded the threshold for couples claiming the EITC, and raised the minimum credit claimed by workers with three or more children.

The Recovery Act also subsidized the purchase of cars and first-time homeowners through an automobile sales tax credit (\$1.7 billion total) and a homeownership tax credit (\$6.6 billion). Homebuyers who purchased their property by the end of April 2010 and settled by the end of September 2010 were eligible for a credit up to \$8,000.

The CARES Act does not make any changes to the existing tax credits. However, the CTC was recently expanded under the Tax Cuts and Jobs Act, providing enhanced tax relief to families with children.

Healthcare. Before the Great Recession, Consolidated Omnibus Budget Reconciliation Act (COBRA) required many employers to provide continued healthcare coverage to workers (and their dependents) who lost their job, but it did not require employers to continue subsidizing the premium payments. ARRA provided a 65 percent subsidy for employers to help cover premium payments of most COBRA-eligible workers who lost their job between September 2008 and May 2010. This subsidy covered workers and their dependents for up to 9 months (later extended to 15 months).

Unlike ARRA, the CARES Act is responding directly to the effects of a health-related crisis. As such, it established the Provider Relief Fund meant to support families, workers, and healthcare providers in the midst of a pandemic. The CARES Act, through the Department of Health and Human Services, allotted \$100 billion to hospitals and other healthcare providers. The Paycheck Protection Program and Health Care Enhancement Act (PPP/HCE) provided an additional \$75 billion for the Provider Relief Fund to healthcare providers to reimburse heightened costs and lost revenues that are attributable to COVID-19. In addition, PPP/HCE provided \$25 billion to help increase COVID-19 testing. This includes \$1 billion to reimburse the cost of testing uninsured individuals, in addition to the \$1 billion previously appropriate for this purpose by the Families First Coronavirus Relief Act (FFCRA). The FFCRA also, as amended by the CARES Act, requires Medicare Part B, State Medicaid and Children's Health Insurance Programs, and group health plans and health insurance issuers to cover COVID-19 diagnostic testing without cost-sharing for patients. Uninsured individuals may also obtain COVID-19 diagnostic testing free of charge under the State Medicaid programs, if the State offers this option. The Centers for Medicare and Medicaid Services has made an accessible and easy-to-use toolkit for states to amend their Medicaid programs in order to offer this service.

COVID-19 also poses a substantial financial cost to hospitals and other healthcare providers. The American Hospital Association (AHA) estimates that the pandemic has imposed over \$200 billion in losses to the American healthcare system in the four-month period between March 1 and June 30. Over 80 percent of this estimated cost is due to revenue losses from canceled surgeries and other services. This includes both elective and nonelective procedures, outpatient treatments, and emergency department services. The remaining 20 percent of estimated losses are based on the direct costs of COVID-19 to hospitals: losses from COVID-19 hospitalizations, additional purchases of PPE, and additional support that hospitals provide to their front-line workers. This may underestimate the total financial losses to the healthcare system as it does not include potential losses from drug shortage costs, increased salaries and wages paid to front-line workers, non-PPE medical supplies such as ventilators, and capital costs such as setting up additional space for COVID-19 testing tents and additional ICU beds.

With funding allocated by the CARES Act and the Paycheck Protection Program and Health Care Enhancement Act, the Department of Health and Human Services is set to allocate \$175 billion of aid to hospitals and other healthcare providers to offset these costs. This includes specific programs to provide relief to safety net hospitals that serve the most vulnerable segment of

the population as well as rural hospitals and those in small metropolitan areas. While this is likely to help ease the financial burden on healthcare providers, hospitals are only expected to receive about 50 percent of the healthcare funds in the CARES Act, with the remainder going to suppliers and other organizations. This means that the relief is likely to offset less than half of the financial losses experienced by hospitals between March and June. Additionally, the distribution of relief funds provided by the Federal government has not been targeted to those experiencing the greatest economic harm from the pandemic, as initial rounds of payments did not account for whether a potential recipient had experienced revenue losses due to canceling elective procedures or undertaken significant costs to treat COVID-19 patients.

Education. The Recovery Act included the American Opportunity Tax Credit, which modified an existing education credit (the HOPE credit) by making it available to more parents and students by raising the income eligibility limits. It also expanded the qualifying expenses and allowed the credit to be claimed not only by two-year institutions but also by four-year higher education institutions. The maximum annual credit of \$2,500 per student was made available to individuals with a modified adjusted gross income of up to \$80,000, or up to \$160,000 for joint filers.

A major difference between the Great Recession and the current crisis is the large amount of school closures across the country in response to the pandemic. Between the first and third weeks 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.

Meanwhile, parents who miss work entirely because of childcare duties induced by school closures are likely to experience a persistent 1 percent drop in lifetime earnings because of lost job experience. The CEA estimates that 18 percent of the workforce may fall into this category. Overall, the data indicate that only about 30 percent of workers are likely to be able to telecommute.

Assuming that school closures 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—will 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.

Reopening schools would help boost the economy. The most recent literature suggests that school-age children are less susceptible to contract COVID-19, less likely to be severely ill, and

less likely to transmit the disease to others. In particular, those under the age of 20 are half as likely to contract COVID-19 as those over the age of 20. States and localities should therefore focus efforts on preventing teacher-to-teacher transmission of COVID-19.

Supplemental Nutrition Assistance Program. ARRA included a number of provisions related to SNAP, including an increase of \$40 billion in additional SNAP benefits for all participants. Additionally, the minimum benefit for one- and two-person households rose by \$2 to \$16. As a result of these changes, in 2009, the average monthly SNAP benefit increased by \$21. In addition to increasing the monthly benefit, ARRA suspended work requirements for nondisabled, childless adults between April 2009 and September 2010.

The Families First COVID-19 Response Act (FFCRA), which passed in March 2020, provided authority for work requirement waivers and 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 the increased costs associated with the FFCRA provisions, as well as anticipated increased participation in SNAP. As provided by the FFCRA and the CARES Act, the Department of Agriculture also provided waivers of certain requirements so that nutrition programs could reach families and children during the social-distancing restrictions. The FFCRA also suspended work requirements for nondisabled, childless adults through the month after the end of the COVID-19 public health emergency.

Housing assistance programs. ARRA provided \$13.6 billion for programs administered by the Department of Housing and Urban Development, including \$1.5 billion for the Homelessness Prevention and Rapid Re-Housing Program.

The CARES Act is even more aggressively assisting these vulnerable populations. Congress has provided \$4 billion for homelessness alone. These funds will support Emergency Solutions Grants targeted to homeless populations or populations at-risk of becoming homeless. About \$3 billion of these funds are being used to operate emergency shelters (covering food, rent, security, etc.), make even more emergency shelters available, provide essential services to homeless populations (including childcare, employment assistance, and mental health services), and prevent individuals from becoming homeless through rapid rehousing.

Conclusion

President Trump has often referred to this coronavirus as the “invisible enemy,” which all Americans face. As such, Americans have faced the virus with bravery, optimism, and sacrifice, while this Administration, working in a bipartisan way, has equipped them with the resources needed to maintain their livelihoods. Unprecedented legislation and Federal action, enacted swiftly, has mitigated the effects of this historic adverse shock.

During the pandemic’s peak, over 6 million Americans filed for unemployment insurance in a single week and 10 million Americans filed in just two weeks, leading to an unemployment rate in April of 14.7 percent. Immediate action taken by the Administration and Congress, coupled with a historically strong economy before COVID-19, has allowed millions of Americans to maintain ties to their workplace through expanded unemployment insurance benefits, PPP loans for small businesses, and several Federal Reserve facilities that have eased liquidity constraints on businesses.

Moreover, surges of liquidity and income replacement targeted to the most vulnerable income groups 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 10.7 percent since February. As a further consequence, the consumer debt and credit indicators for April and May have not shown the deterioration expected as severe delinquencies on mortgages have fallen to new lows. While we continue to monitor small business bankruptcies with weekly data, another potential area of concern, the levels for April and May are still lower than what were observed earlier this year, suggesting that relief measures may have played an important role in staving off business failures.

This CEA report has documented the successes and effects of these 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 note, however, that the crisis is far from over. As the Nation continues its slow path to recovery, the Administration remains committed to taking the necessary steps needed to make the process as smooth and painless as possible for all Americans.

Appendix

Figure 15

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 the loss of earnings from job loss, the receipt of unemployment insurance, and Economic Impact Payments.

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 we 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). We then impute the lost earnings for these individuals 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. We then use these regression results 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.

We impute unemployment insurance benefits without the CARES Act by applying State-specific rules on earnings replacement rates and caps for different family types to the earnings imputed above. Unemployed self-employed workers are assigned zero unemployment insurance. For unemployment insurance benefits with the CARES Act, we add \$600 weekly to unemployment insurance benefits, and we assign State and Federal supplement benefits to unemployed self-employed workers, in both April and May.

Economic Impact Payments are imputed to households on the basis of the reported family income of the household head, the number of adults and their marital status, and the number of children. Phase-outs of Economic Impact Payments begin at \$75,000 for single adult households, \$112,500 for unmarried, multiple adult households, and \$150,000 for married, multiple adult households. Economic Impact Payments then phase out at \$0.05 per \$1 of income above these thresholds. Economic Impact Payments are applied to households in April 2020.

Figure 16

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 his or her job beginning in April. Unemployment insurance replaces 50 percent of earnings up to \$475 per week, the mean State cap weighted by workers in the 2019 monthly CPS surveys. Under the CARES Act, unemployment insurance pays an additional \$600 per week. A stimulus payment of \$3,400 is applied in April to both households.

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