Chapter 1

Creating the Fastest Economic Recovery

The beginning of 2020 ushered in a strong U.S. economy that was delivering job, income, and wealth gains to Americans of all backgrounds. By February 2020, the unemployment rate had fallen to 3.5 percent—the lowest in 50 years—and unemployment rates for minority groups and historically disadvantaged Americans were at or near their lowest points in recorded history. Wages were rising faster for workers than for managers, income and wealth inequality were on the decline, and median incomes for minority households were experiencing especially rapid gains. The fruits of this strong labor market expansion from 2017 to 2019 also included lifting 6.6 million people out of poverty, which is the largest three-year drop to start any presidency since the War on Poverty began in 1964. These accomplishments highlight the success of the Trump Administration's pro-growth, pro-worker policies.

The robust state of the U.S. economy in the three years through 2019 led almost all forecasters to expect continued healthy growth through 2020 and beyond. However, in late 2019 and the early months of 2020, the novel coronavirus that causes COVID-19, with origins in the People's Republic of China, began spreading around the globe and eventually within the United States, causing a pandemic and bringing with it an unprecedented economic and public health crisis. Both the demand and supply sides of the economy suffered sudden and massive shocks due to the pandemic. During the springtime lockdowns aimed at "flattening the curve," the labor market lost 22.2 million jobs, and the unemployment rate jumped 11.2 percentage points, to 14.7 percent—the largest monthly changes in the series' histories.

The healthy foundation of the Trump Administration's prepandemic economy, coupled with strong and decisive action during the crisis, helped the Nation weather the catastrophic COVID-19 shock and rebound faster than either official or private forecasters had projected. After a sharp contraction in the second quarter of 2020, the U.S. economy posted a 33.1 percent annualized gain in gross domestic product (GDP) in the third quarter—the largest jump on record, and nearly double the previous record from 70 years ago. As a result, the U.S. economy has recovered two-thirds of the GDP damage from COVID-19 in just one quarter.

This chapter first documents the strength and resilience of the U.S. economy leading up to the COVID-19 pandemic, both in absolute and relative senses. The chapter demonstrates that the U.S. economy under the Trump Administration suffered from fewer macroeconomic vulnerabilities than the pre–Great Recession economy and that the economic experience during the pandemic would have been even worse if it had not been for the economic improvement from 2017 to the beginning of 2020.

In addition, this chapter details how, relative to the Great Recession, the Federal Government acted with greater speed and provided more robust relief in response to the COVID-19 crisis. In particular, the $2.2 trillion Coronavirus Aid, Relief, and Economic Security (CARES) Act—passed by Congress within two weeks of the President's National Emergency Declaration—delivered the most extensive fiscal relief in U.S. history. Moreover, it was targeted primarily to vulnerable families, workers, and small businesses, in stark contrast to the larger focus on banks and big businesses in the fiscal response to the Great Recession.

Two overarching objectives have characterized the Federal Government's approach to combating the economic consequences of COVID-19: the alleviation of financial distress to reduce hardship, and the preservation of underlying economic health to facilitate a faster recovery. For example, enhanced unemployment insurance benefits and eviction moratoriums supported household balance sheets, and the Paycheck Protection Program strengthened the

connective tissue of the labor market by helping maintain matches between employers and furloughed employees, setting the stage for the fastest employment rebound in U.S. history.

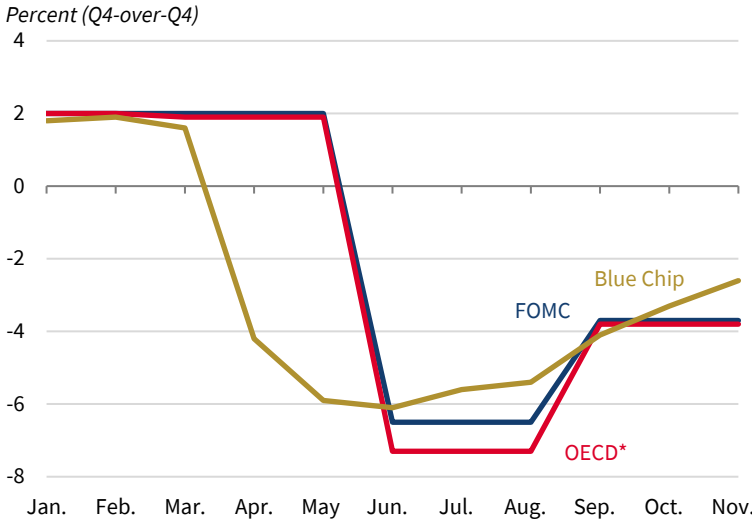
Chapters 2, 3, and 4 of this *Report* analyze the specific responses that this Administration has implemented to address the dual public health and economic crises resulting from the COVID-19 pandemic.

The U.S. economy entered 2020 with historically low unemployment and poverty, declining inequality, and some of the strongest household income and wealth gains on record. In short, the American economy was delivering greater opportunity to people across the socioeconomic spectrum. At the time, leading forecasters were predicting this prosperity to continue in 2020 and beyond with healthy GDP growth. However, COVID-19 interrupted this boom after it spread beyond the borders of China and instigated the most severe global public health and economic crisis in almost a century. This chapter describes the healthy state of the U.S. economy before COVID-19 reached American shores, the evolution of what has become the largest shock to the U.S. economy since the Great Depression, and the historic range of policies that were quickly passed into law to support the economy and lay the foundation for a robust recovery.

Before delving into each of these issues individually, it is worth taking stock of the broader economic account of 2020 and just how far the U.S. economy has recovered since the peak crisis period of the spring shutdowns. As shown in figure 1-1, leading forecasters had been forecasting healthy 2 percent GDP growth for 2020 at the beginning of the year. Then, as the pandemic worsened, they sharply revised their forecasts down, predicting the worst contraction in annual GDP in the post–World War II period. However, in the face of a much stronger recovery to date than almost anyone had predicted, forecasters have responded by substantially revising their predictions for the year upward, especially in light of the 33.1 percent annualized GDP rebound in the third quarter that eclipsed the prior record from 70 years ago.

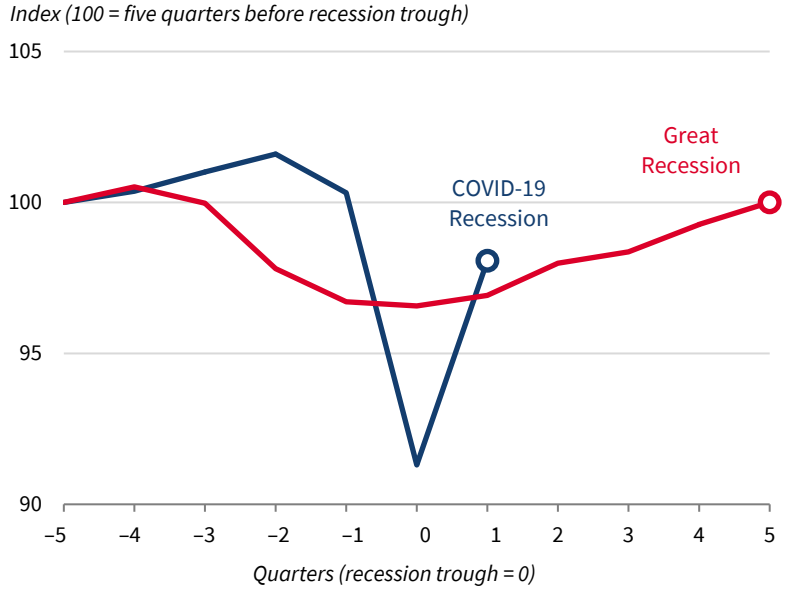
Figure 1-2 puts into stark relief the differences in economic behavior during the COVID-19 pandemic versus during the Great Recession. Each curve plots real GDP indexed to its level five quarters before the trough of each downturn. As shown by the time-0 point on the horizontal axis, the onset of COVID-19 led to a drop in indexed GDP more than twice as large as that of the Great Recession. However, the figure also reveals the much more dramatic rebound in economic fortunes during the pandemic thus far, driven by the Federal government's swift and bold economic interventions to deliver relief

Figure 1-1. Evolution of 2020's Gross Domestic Product Forecast, 2020



Sources: FOMC; OECD; Blue Chip Economic Indicators.
Note: FOMC = Federal Open Market Committee; OECD = Organization for Economic Cooperation and Development. *The OECD's GDP forecast is the year-over-year percent change.

Figure 1-2. Real Gross Domestic Product Fell and Rose More Sharply Now Than during the Great Recession



Sources: Bureau of Economic Analysis; CEA calculations.

particularly to households and small businesses. Provided that the economy continues to receive appropriate and responsive fiscal support, the recovery is poised to remain on a healthy trajectory. In contrast, in the aftermath of the Great Recession, the economy suffered from a weaker and more protracted recovery—especially when viewed through the lens of the labor market, as this chapter discusses later.

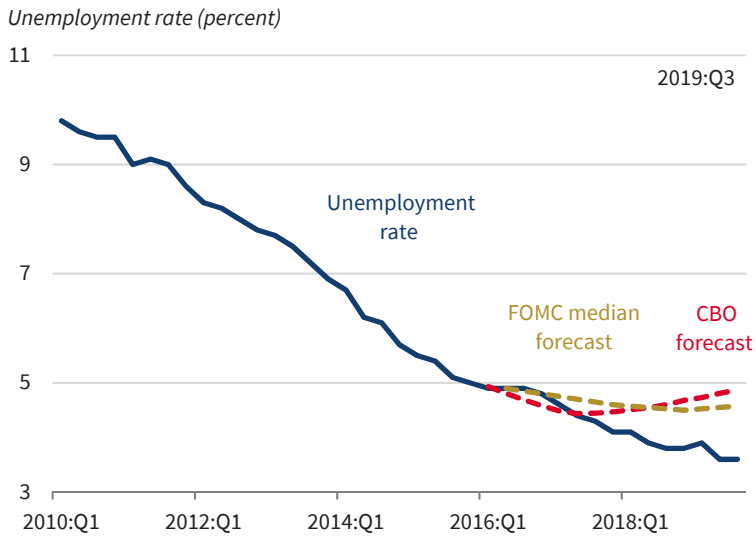
The Historic Strength of the U.S. Economy before COVID-19

Before the COVID-19 pandemic, the U.S. economy under President Trump was surpassing milestone after milestone, delivering broad-based economic gains to Americans of all backgrounds. After years of historically slow recovery following the Great Recession, the unemployment rate fell below 4 percent for the first time since December 2000, reaching 3.5 percent at the end of 2019. The more comprehensive "U-6" unemployment rate—which includes people not looking for work but wanting a job and people working part-time who would prefer to have a full-time job—reached an all-time low of 6.7 percent in December 2019.

Moreover, the advances in labor market opportunity extended to all corners of American society. The unemployment rate for African Americans fell to 5.4 percent in late 2019, down from 7.5 percent when President Trump took office and the lowest level on record. For reference, the lowest rate achieved under any previous administration was 7.0 percent in April 2000. Hispanic Americans also enjoyed the lowest unemployment rate on record, with the rate dropping to 3.9 percent in late 2019. Those with a less formal education were also beneficiaries of a labor market of unparalleled strength, with the unemployment rate for people with less than a high school diploma reaching 4.8 percent in late 2019, and Americans with only a high school degree facing a 3.6 percent rate.

These strong pre-COVID labor market conditions were no mere coincidence; nor were they a passive continuation of economic momentum carried over from the preceding years of the expansion. Although the unemployment rate had managed to fall below 5 percent after six years of the slowest labor market recovery in recorded history, the Congressional Budget Office and the Federal Open Market Committee issued forecasts before the 2016 election showing that the unemployment rate would flatten and stay well above 4 percent, as shown in figure 1-3. However, the combination of the landmark Tax Cuts and Jobs Act in 2017 and the implementation of President Trump's pro-growth deregulatory agenda laid the groundwork for the economy to surpass

Figure 1-3. The Unemployment Rate versus Preelection Forecasts, 2011–19



Sources: Congressional Budget Office; Bureau of Labor Statistics; Federal Reserve.
Note: CBO = Congressional Budget Office; FOMC = Federal Open Market Committee.
The CBO forecast is from August 2016; the FOMC forecast is from September 2016.

these expectations by boosting economic competitiveness and dynamism (CEA 2019, 2020a).[1]

Besides increasing the abundance of job opportunities, a low unemployment rate also confers greater bargaining power on workers when they are negotiating pay with employers. Both when looking to recruit new workers and retain existing talent, employers must offer a compelling pay package when unemployment is low or else risk losing valuable workers to their competitors. In fact, 2019 data from the Job Openings and Labor Turnover Survey (JOLTS) shows the highest quit rate since 2001—a sign of a challenging environment for employers to retain workers who were availing themselves of the tight competition for their services. Table 1-1 compares the magnitude of earnings growth for different types of workers under the pre-COVID Trump economy with the expansion period from the previous administration. Table 1-1 shows that earnings growth was higher across the board in the period since 2017 to before COVID-19, and on top of that, workers' earnings were outpacing those of managers, and the bottom 10 percent of wage earners were experiencing more rapid earnings growth than the top 10 percent.

[1] Chapter 1 in both the 2019 and 2020 editions of the *Economic Report of the President* provides a comprehensive analysis of the pro-growth benefits of the Tax Cuts and Jobs Act. Chapter 3 of the 2020 *Report* discusses the benefits of the Trump Administration's focus on deregulation for household income.

Table 1-1. Growth in Earnings, 2009–20

Group	Pre-COVID Economy (Jan. 2017–Feb. 2020)	Previous Expansion Period (Jul. 2009–Dec. 2016)
Workers	3.3	2.3
Managers	2.7	2.5
	(2017:Q1–2019:Q4)	(2009:Q3–2016:Q4)
No bachelor's	3.0	1.3
Bachelor's or more	2.9	1.5
Bottom 10% wage earners	4.9	1.9
Top 10% wage earners	3.3	2.4

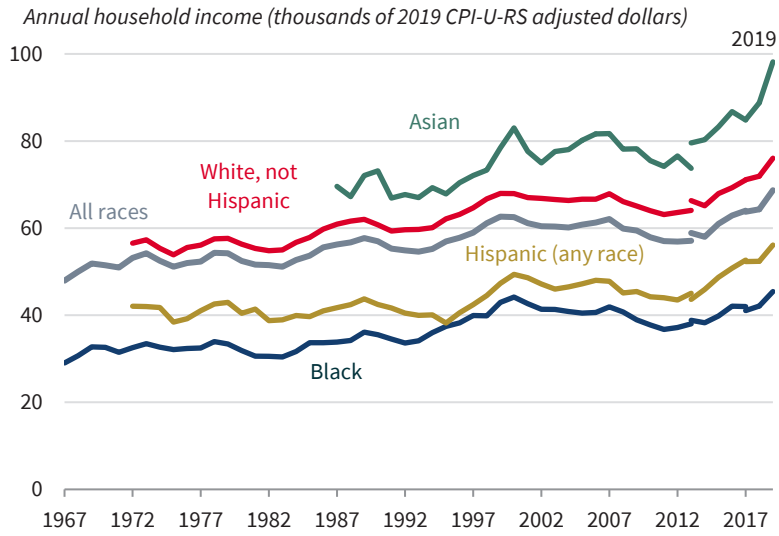
Sources: Bureau of Labor Statistics; CEA calculations.
Note: Data represent a compound annual growth rate for 2009:Q3–2016:Q4 or July 2009–December 2016 and 2017:Q1–2019:Q4 or January 2017–January 2020. For workers and managers, earnings are defined as average weekly earnings. For all other categories, earnings are defined as median usual weekly earnings.

The CEA finds that higher earnings growth among low-wage workers is a result of rising labor demand in the Trump economy. Although some assert the importance of State-level minimum wage increases based on cross-state comparisons of wage growth since 2016 (Van Dam and Siegel 2020; Nunn and Shambaugh 2020; Tung 2020; Tedeschi 2020), there are serious limitations and flaws in these analyses that undermine their conclusions. In particular, the limitation of these studies is that they do not show that the timing of wage increases aligns with the timing of minimum wage hikes in States that have instituted such hikes. Thus, the studies do not distinguish wage growth that occurred before a minimum wage hike from wage growth that occurred after a hike. Because of their failure to consider this timing issue, these studies do not provide strong evidence that minimum wage hikes are responsible for wage growth. Additionally, wage growth could have been higher in the States that increased their minimum wages even without the increases.

In contrast, the CEA's analysis uses detailed microdata from the Current Population Survey to identify workers with direct exposure to minimum wage hikes based on their position in the wage distribution. The CEA then calculates the effect of the minimum wage by estimating what wage growth for the directly-affected group would have been had no minimum wage hike occurred. Based on these calculations and a sensitivity analysis, the CEA attributes as an upper bound only 0.2 percentage points of wage growth among workers in the bottom third of the wage distribution to minimum wage hikes. To put this number in perspective, such workers experienced total annual wage growth of 3.8 percent between 2017 and 2019.

In support of the view that strong labor market conditions—not minimum wages—drove the observed wage gains, research by the Federal Reserve Bank of Atlanta compares wage growth in States that increased their minimum

Figure 1-4. Real Median Household Income by Householder Race, 1967–2019



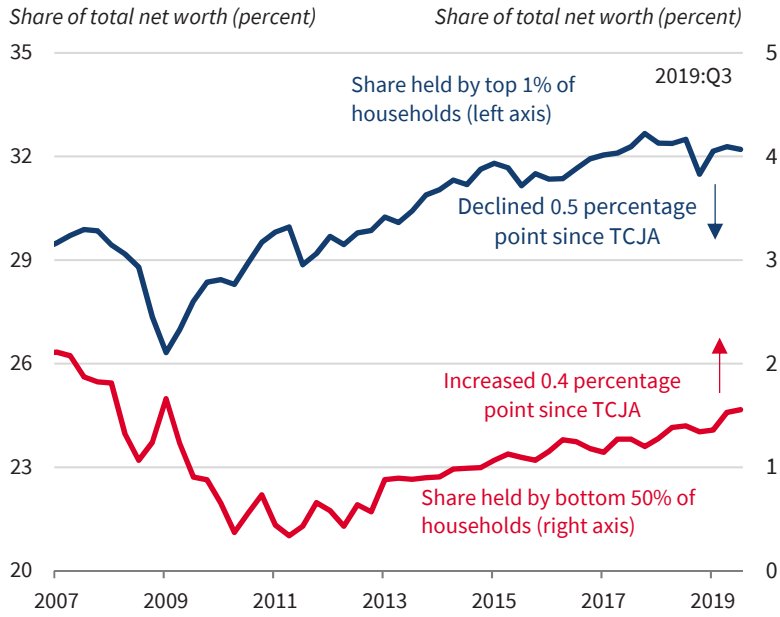
Source: Census Bureau, Current Population Survey, 1968 to 2020 Annual Social and Economic Supplements.
Note: CPI-U-RS = Consumer Price Index Reserach Series.

wages with those that did not. Robertson (2019) examines the ratio of the 12.5th percentile wage (i.e., the median wage of the lowest quartile) relative to the median wage for all workers. Between 2014 and 2019, this ratio was increasing, indicating faster wage growth at the bottom of the distribution. Notably, the ratio was increasing at about the same rate among States that increased their minimum wages and among States that did not. Robertson (2019) concludes, "The increased tightness of labor markets, or some other factor than hikes in State minimum wages, is playing a role in pushing up the pay for those in lower-wage jobs."

Looking back further than just the previous administration, the $4,400 jump in real median income in 2019 marked the largest one-year increase on record, capping a nearly 10 percent increase since 2016 after adjusting for the U.S. Census's redesign in 2017. Moreover, figure 1-4 reveals that the boost to household incomes occurred for all races, with minorities experiencing outsized gains. Specifically, in 2019 real median income for Black households rose by 7.9 percent, Hispanic Americans saw a 7.1 percent boost, and Asian Americans enjoyed an even larger 10.6 percent increase, while White households experienced a smaller but still substantial 5.7 percent jump. Each of these figures represents record increases and record absolute levels.

The broad-based income and employment gains before COVID-19 also fueled rising household net worth, lower income and wealth concentration,

Figure 1-5. Share of Total Net Worth by Percentile, 2007–19



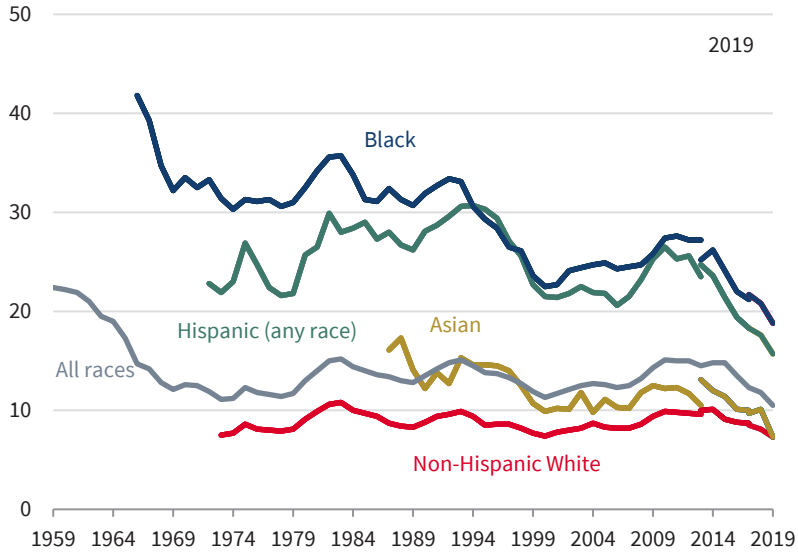
Sources: Federal Reserve Board; CEA calculations.
Note: TCJA = Tax Cuts and Jobs Act.

and a record fall in the official poverty rate. Through the fourth quarter of 2019, the net worth of the bottom 50 percent increased by 38.9 percent during President Trump's first term, while it increased by 20.1 percent for the top 1 percent. Since the Tax Cuts and Jobs Act passed, the wealth share of the top 1 percent fell by 0.5 percentage point, while that of the bottom 50 percent rose by 0.4 percentage point, as shown in figure 1-5. This broad increase in net worth partly reflects the stark turnaround in the homeownership rate, which reached 65.1 percent in 2019 after recovering from a 2016 trough of 62.9 percent. Income concentration also fell, with the Gini coefficient—a widely used measure of concentration that ranges between 0 and 1—declining from 0.489 in 2017 to 0.484 in 2019. Data from the 2019 Survey of Consumer Finances reveal broad wealth increases driven by the lower earners, with median net worth in the lower two income quintiles up by over 30 percent since 2016. Hispanics and African Americans enjoyed respective gains of 64 percent and 32 percent.

At the bottom of the income distribution, the robust labor market expansion between 2016 and 2019 lifted 6.6 million people out of poverty, which is the largest three-year reduction to start any presidency since the War on Poverty began in 1964. As a proportion of the population, the poverty rate fell to an all-time low of 10.5 percent in 2019—with especially large poverty declines for African Americans, Hispanics, and Asians—as figure 1-6 makes

Figure 1-6. Poverty Rates by Race and Hispanic Origin, 1959–2019

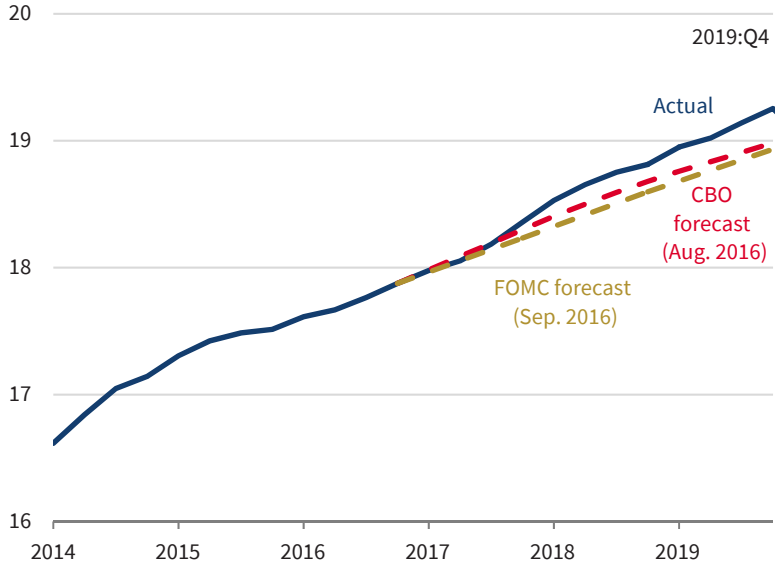
Percent



Source: Census Bureau.

Figure 1-7. U.S. Real Gross Domestic Product, 2014–19

2012 dollars (trillions)



Sources: Bureau of Economic Analysis; Congressional Budget Office (CBO); Federal Open Market Committee (FOMC).

evident. Moreover, 2.8 million children were lifted out of poverty between 2016 and 2019, driving the child poverty rate down to a 50-year low of 14.4 percent.

In the years immediately preceding the pandemic, the United States experienced robust GDP growth that exceeded what the Congressional Budget Office and the Federal Open Market Committee had previously forecast for those years, as seen in figure 1-7. Real GDP grew 2.5 and 2.3 percent in 2018 and 2019, respectively, faster than any other Group of Seven country. Entering 2020, many forecasters slated U.S. output to grow at a healthy pace of about 2 percent in 2020, though it is entirely plausible that the U.S. economy could have continued exceeding projections if the global economy had not been hit with the COVID-19 pandemic—the largest exogenous shock since the Great Depression.

The Early Economic Effects of COVID-19

On January 7, 2020, Chinese researchers announced the discovery of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)—which causes the disease COVID-19—in the travel hub city of Wuhan, China.[2] On January 21, the first case of a person contracting the new coronavirus after traveling from Wuhan was reported in the United States.[3] By late February, the Centers for Disease Control and Prevention had confirmed the first possible instance of community transmission in the United States, and the Standard & Poor's 500 began a sharp sell-off that continued through March 23, losing 33.9 percent of its value compared with its peak just before the outbreak.[4]

The Trump Administration responded by promptly putting in place non-pharmaceutical intervention policies to contain the virus.[5] 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 (White House 2020a, 2020b). On March 13, President Trump declared COVID-19 a national emergency (White House 2020c). 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

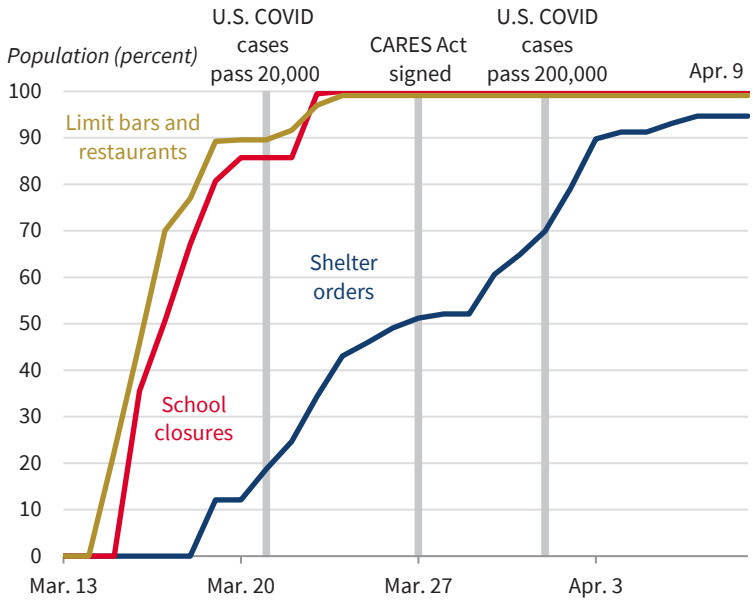
[2] Chinese researchers isolated and confirmed a novel coronavirus after identifying a cluster of acute respiratory illnesses in Wuhan on December 31, 2019 (Patel, Jernigan, and 2019-nCov CDC Response Team 2020).

[3] 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 (CDC 2020a).

[4] The first case of COVID-19 with no prior travel to infected regions was confirmed by the CDC (2020b).

[5] 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 (CDC 2020c).

Figure 1-8. Percentage of the U.S. Population under Statewide Restrictions, 2020



Sources: *New York Times*; State policy announcements; CEA calculations.

1-8). By March 30, 30 States had issued stay-at-home orders, with an additional 13 States having issued these orders for State sections. By early April, over 90 percent of the U.S. population lived in a State that had issued a stay-at-home order.[6]

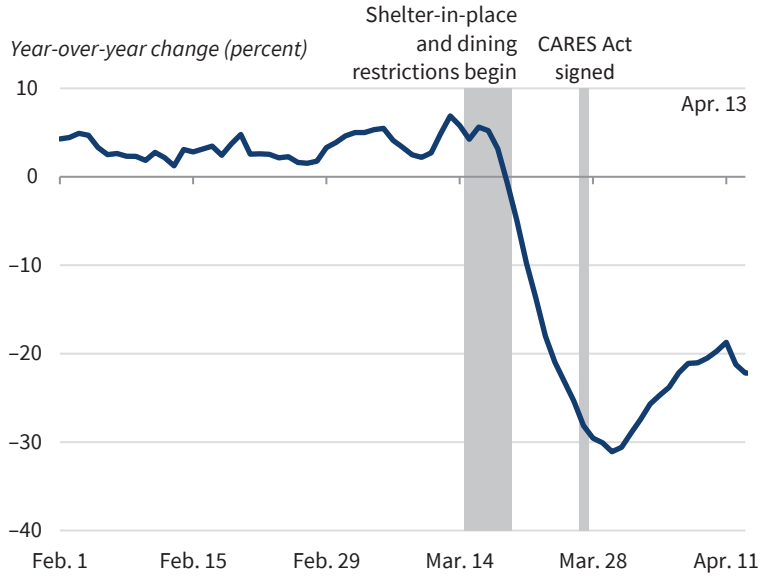
Studies of the economic effects of past pandemics indicate that there are three main channels through which pandemics affect economic activity:[7] (1) increased mortality, (2) illness and absenteeism, and (3) avoidance behavior to reduce infection. These shocks reduce the size of the labor force, aggregate productivity, and aggregate demand. Consistent with these observations, the economy has experienced sudden, large, and simultaneous shocks to supply and demand as a result of the COVID-19 outbreak in the United States.

On the supply side, many businesses were shuttered by social-distancing measures that States and local authorities put in place or businesses

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

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

Figure 1-9. Retail Spending during the Early Stages of the Pandemic, Seven-Day Average, 2020



Source: Proprietary spending data.
Note: The CARES Act was signed into law on March 27, 2020.

voluntarily adopted to stop the spread of the virus and "flatten the curve."[8] 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.[9] Consumers also changed the composition of their demand; for example, they replaced restaurant meals with home-cooked meals and increased their demand for cleaning supplies.

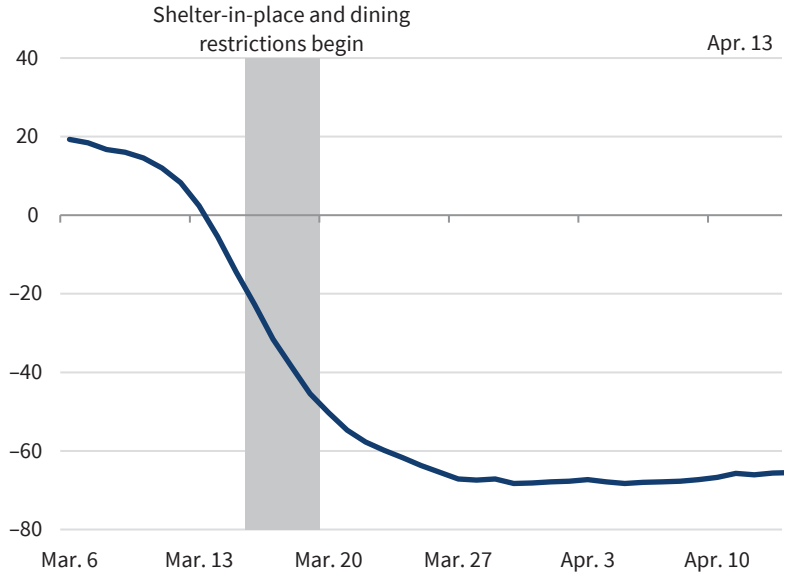
High-frequency indicators that serve as proxies for demand across various economic activities show that the downturn began in early March, in some cases before Statewide social-distancing measures were implemented, and reached its trough at the end of April. Daily retail spending data started plunging in mid-March and bottomed out at a 30 percent year-over-year decline at the end of March (figure 1-9). By the time shelter-in-place orders and dining

[8] E.g., 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.

[9] 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.

Figure 1-10. Traffic Congestion during the Early Stages of the Pandemic, Median across All States, Seven-Day Average, 2020

Year-over-year change (percent)



Sources: TomTom; Exante; CEA calculations.

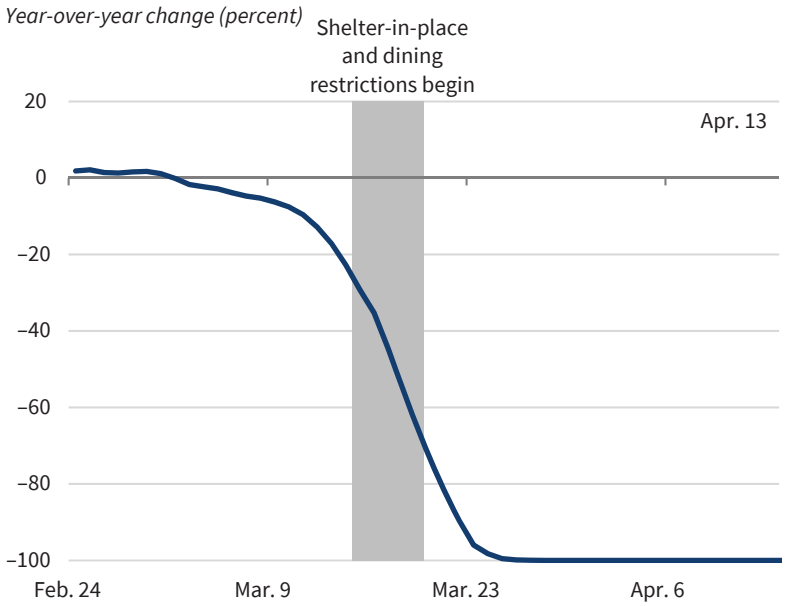
restrictions began, daily traffic congestion (figure 1-10) and seated diners (figure 1-11) across all States had already dropped over 20 percent year-over-year. Similarly, weekly hotel occupancy had dropped 56 percent year-over-year in the week these shelter-in-place measures began (figure 1-12).

Supply indicators—the number of small businesses that were open, the number of hourly employees who were working, and number of hours worked—also saw the steepest year-over-year contraction in March and April. Figure 1-13 illustrates how these indicators compared with a January pre-COVID-19 baseline, as reported by Homebase.[10] After shelter-in-place orders became widespread in mid-March, the proportion of employees working fell from about 15 percent below normal conditions to about 55 to 60 percent.

As the indicators discussed above show, the restrictions on mobility and the shift toward social distancing played a major role in limiting economic activity. Academic research conducted since the COVID-19 pandemic began attempts to quantify the extent to which government restrictions versus voluntary mitigation behaviors can account for the decline in mobility during the

[10] 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 its 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 restaurants, food and beverages businesses, retail outlets, and service establishments.

Figure 1–11. Seated Diners in U.S. Restaurants, per OpenTable, during the Early Stages of the Pandemic, Seven-Day Average, 2020

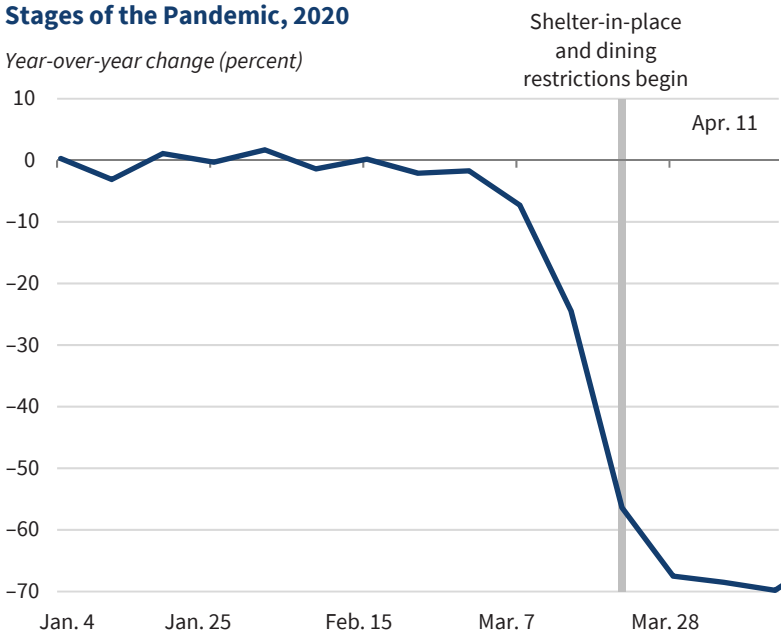


Sources: OpenTable; *New York Times*; CEA calculations.

spring. For example, Goolsbee and Syverson (2020) examine cellular phone records data on customer visits to individual businesses across contiguous boundaries with different policies. They conclude that consumer traffic started to decline before State and local restrictions were put in place, that the degree of private mitigation behavior was tied to the local severity of the virus (i.e., number of deaths in the county), and that, overall, legal restrictions explained only a small fraction of the total decline in activity. However, they do find that the shutdown orders caused a reallocation of consumer activity from "nonessential" to "essential" businesses and from restaurants and bars to groceries. Another study by Cronin and Evans (2020) contains similar findings, concluding that private, self-regulating behavior explained more than three-quarters of the decline in foot traffic but that regulations had large effects on foot traffic to restaurants, hotels, and nonessential retail.

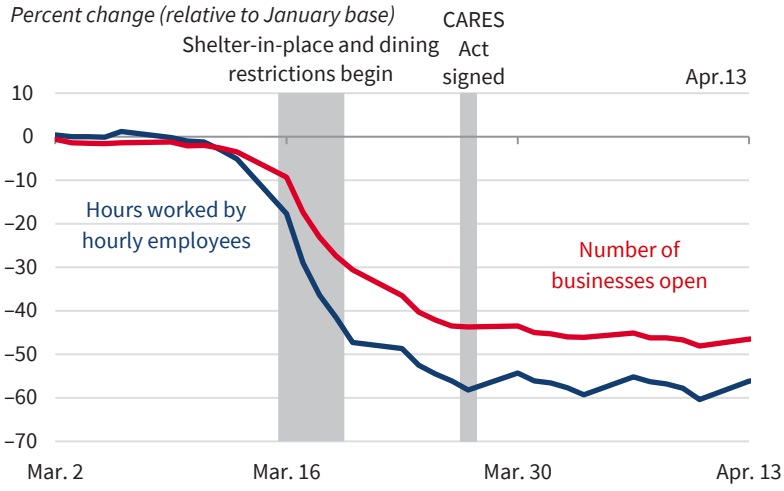
The pandemic also caused significant disruptions to the labor market and to macroeconomic activity. Due to their short reporting lag, initial claims for Unemployment Insurance (UI) provide timely information on how the COVID-19 pandemic and containment measures have affected the labor market. In March, job losses occurred at a level not seen since the Great Depression, with initial UI claims spiking from 282,000 the week ending March 14 to 6.9 million two weeks later.

Figure 1-12. Weekly U.S. Hotel Occupancy Rate during the Early Stages of the Pandemic, 2020



Sources: STR; CEA calculations.

Figure 1–13. Percent Change in Small Businesses That Are Open and Hourly Employees Who Are Working in the Early Stages of the Pandemic, 2020



Source: Homebase.
Note: All rates compare a given date versus the median for that day of the week during the period January 4–31, 2020. The number of hourly employees working traces hours worked by hourly employees.

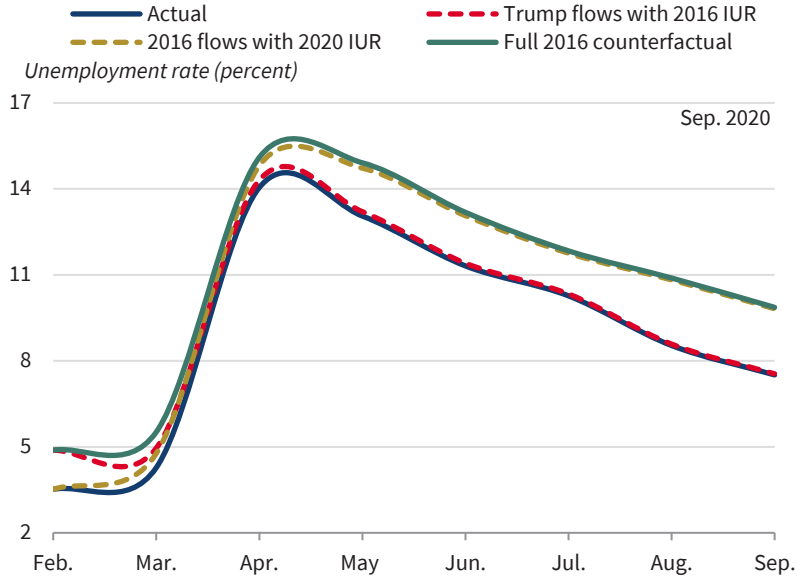
Data on total economic output also reflect the enormous negative shock that the COVID-19 pandemic and containment measures had on the economy. First-quarter real GDP declined at an annualized rate of 5.0 percent—itself significant—but this drop would later be dwarfed by the annualized 31.4 percent collapse in second-quarter GDP. In early June, the Organization for Economic Cooperation and Development (OECD) estimated that the COVID-19 pandemic and containment measures would decrease U.S. Q4-over-Q4 GDP by 7.4 percent in 2020 in the absence of a second wave in the fall (single-hit scenario), or 12.3 percent if such a wave were to occur (double-hit scenario). This forecast was more pessismistic than those provided by the Congressional Budget Office and the Blue Chip survey of the private sector in July, which were still large, at 5.9 and 5.6 percent decreases, respectively.

The U.S. Economy's Resilience in Weathering the COVID-19 Shock

Beyond the immediate prosperity that Americans were enjoying before COVID-19, the vibrant state of the U.S. economy rendered it more resilient and better prepared to weather the COVID-19 shock than if it had occurred in earlier years. To quantify this resilience, the CEA simulates the likely path of the unemployment rate if the COVID-19 shock had occurred under the weaker economic conditions of 2016 instead of the stronger actual 2020 pre-COVID conditions. To construct this simulation, the CEA uses Current Population Survey data to measure the monthly probability that workers transit between employment, unemployment, and not being in the labor force. The CEA's analysis assumes that any year-over-year deterioration in transition probabilities from 2019 to 2020 is attributable to COVID-19, which makes it possible to isolate the magnitude of the COVID-19 shock to labor flows. Then, the CEA applies this measured COVID-19 shock to monthly 2016 labor market transition probabilities to arrive at likely counterfactual labor market flows and ultimately unemployment dynamics if COVID-19 had occurred under 2016 economic conditions.

The solid blue line in figure 1-14 shows the actual observed path of unemployment, and the solid green line shows the simulated path of the unemployment response to COVID-19 under full 2016 conditions—specifically, starting from the 4.9 percent February 2016 unemployment rate (compared with 3.5 percent in February 2020) and with the worse baseline (without COVID-19) labor dynamism from 2016. As the figure shows, if COVID-19 had arrived with the U.S. economy in its 2016 state, the unemployment rate would likely have peaked at a higher rate and been nearly 2 percentage points above the actual level in October. If, instead, the U.S. economy had entered the COVID-19 crisis with the 2016 level of unemployment but the healthier Trump labor market flows—as shown in the red dashed curve in the figure—the dynamics of unemployment would not have looked substantially different than what has actually

Figure 1-14. Unemployment and COVID-19: The Trump Economy versus the 2016 Counterfactual, 2020



Sources: Census Bureau; CEA calculations.
Note: IUR = Initial unemployment rate.

occurred. In other words, the difference in initial unemployment rates is not the crux of the superior resilience of the Trump economy. To the contrary, the gold dashed curve shows that, holding fixed the initial February unemployment rate at 3.6 percent, the unemployment rate would have followed a much worse trajectory if the economy had suffered from the worse underlying dynamism of the 2016 economy.

Comparing the COVID-19 Recession and the Great Recession

The pre-COVID U.S. economy possessed fewer macroeconomic vulnerabilities than it had in the lead-up up to the Great Recession, when overextended household borrowers and a highly leveraged financial sector precipitated the Great Recession. Unlike the previous recession, the COVID-19 crisis was not the consequence of underlying economic imbalances, and the greater resilience of the pre-COVID U.S. economy coupled with the superior fiscal response augurs well for the continuing prospects of a much more robust recovery. This section sheds light on the comparative health of the U.S. economy before the current crisis relative to the years before the 2007–9 financial crisis and Great Recession.

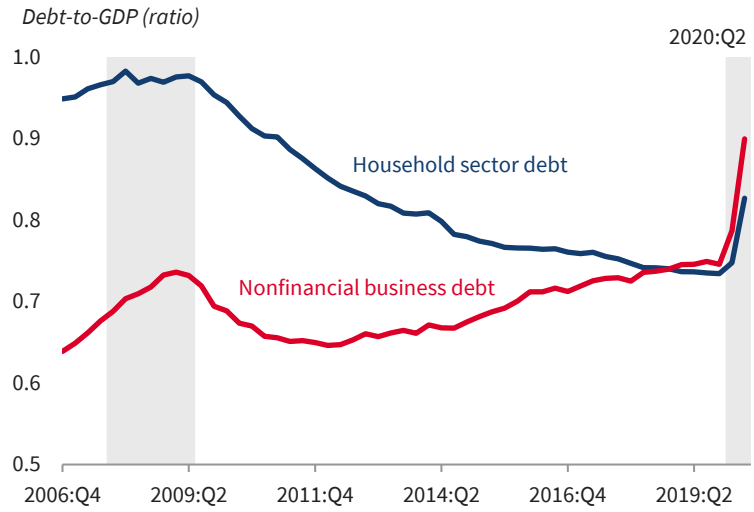
The State of the Economy before the Crises

This subsection looks at various sectors of the U.S. economy before the crises. We consider households, nonfinancial businesses, and banks.

Households. The financial situation of the household sector was stronger in early 2020 than at the start of the Great Recession. 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, which is captured more accurately by the tails of the distribution. Even along this dimension, however, the U.S. economy was in a stronger position before the COVID-19 crisis than it was back in 2006 before the start of the financial crisis. The share of mortgages with debt-to-income ratios above 50 percent fell from 11.0 percent in 2006 to only 6.9 percent in 2018. Though the loan-to-value ratio for new mortgages was similar to what it was in 2006, credit had 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 were also taking out safer loans by 2018. The share of mortgages with less than full amortization fell from 29.2 percent in 2006 to 0.6 percent in 2018, and mortgages for which 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. The bureau also shows that, for automobile 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 simulated 2020 economic response generates fewer defaults because of healthier household balance sheets (Bhutta et al. 2019). Although the COVID-19 economic shock differs from that of the last crisis, the combined effect of stronger household balance sheets and a bolder fiscal response has greatly reduced the amount of actual financial distress that one would expect from such a large disruption.

Figure 1–15. Ratio of Household Sector and Nonfinancial Business Debt to Gross Domestic Product, 2006:Q4–2020:Q2



Sources: Bureau of Economic Analysis; Federal Reserve Board; CEA calculations.
Note: Household sector debt includes debt owned by nonprofit organizations. Debt is defined as oustanding loans and debt securities. Shading denotes a recession.

Nonfinancial businesses. Although 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 1-15).[11]

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 the debt burden is the ratio of company earnings to their interest payments, or the interest coverage ratio. In the years leading up to the pandemic, the interest coverage ratio for the median firm 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 were all declining; and in early 2020, at the onset of COVID-19, 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 thus carries more risk of default than higher-grade debt. Another concern is that in recent years, loans to large

[11] These ratios spiked in the second quarter of 2020 as GDP contracted sharply.

corporations have increasingly focused on highly leveraged firms. In February 2020 at the onset of the pandemic recession, the rate was higher than at the start of the Great Recession (Federal Reserve 2020; IMF 2019, 2020). Overall, the second quarter of 2020 had the highest quarterly volume of defaults in leveraged loans since the first quarter of 2009 (LCD News 2020).

Banks. The banking sector was well capitalized at the start of the COVID-19 pandemic. According to data compiled by the Federal Deposit Insurance Corporation, as of the fourth quarter of 2019, 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 Federal Deposit Insurance Corporation'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 banking sector also entered the crisis with stable indicators of asset quality.

The Origins and Progression

This subsection reviews the different origins of the COVID-19-induced recession and the Great Recession, and the important differences in how these shocks played out over time. The financial crisis and resulting Great Recession of 2007–9 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. The weakness in housing then 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 their book *First Responders*, Bernanke, Geithner, and Paulson (2020, 12) 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." By the 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 unemployment rate increased from 4.7 percent in November 2007 to a peak of 10.0 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 several Sun Belt 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.

Both the origins of the COVID-19 recession and the progression of the recovery have been quite different from those of the Great Recession. First, as discussed above, the pre-COVID U.S. economy was in a much healthier state, lacking the household balance sheet vulnerabilities that exacerbated the wave of defaults and financial distress during the 2007–9 financial crisis. House prices have also remained remarkably stable—likely buoyed by the surge in personal income fueled by the CARES Act—and these prices are boosting family finances and have helped prevent a repeated wave of foreclosures like the one that ripped through the economy during the Great Recession. Most important, the speed of the recovery to date has been dramatically faster, with the unemployment rate spending only 4 months above 9 percent during the COVID-19 pandemic, compared with the over two years it hovered above 9 percent during the sclerotic recovery from the last recession. In the 7 months of data since the trough of employment during COVID-19, the U.S. economy has already recovered 56 percent of the lost jobs. By comparison, it took 30 months to gain back more than half the jobs lost in the aftermath of the Great Recession. Moreover, the broader "U-6" unemployment rate spent five years above 13 percent during the slow recovery from the Great Recession, whereas during COVID-19, the rate fell below that level after just 5 months.

Fiscal and Monetary Responses

Despite the health and resilience of the U.S. economy at the beginning of 2020, the initial negative shock was unprecedented. Moreover, even though the immediate economic losses were concentrated in the second quarter of 2020, when shutdowns were widely in place throughout the United States, the Federal Government took action to combat the short-term liquidity crisis and minimize the extent to which it could turn into a widespread solvency crisis for families and businesses with long-lasting negative effects on bankruptcies, unemployment, and production. This subsection compares the speed and scale of the Federal response to COVID-19 with the actions taken to combat

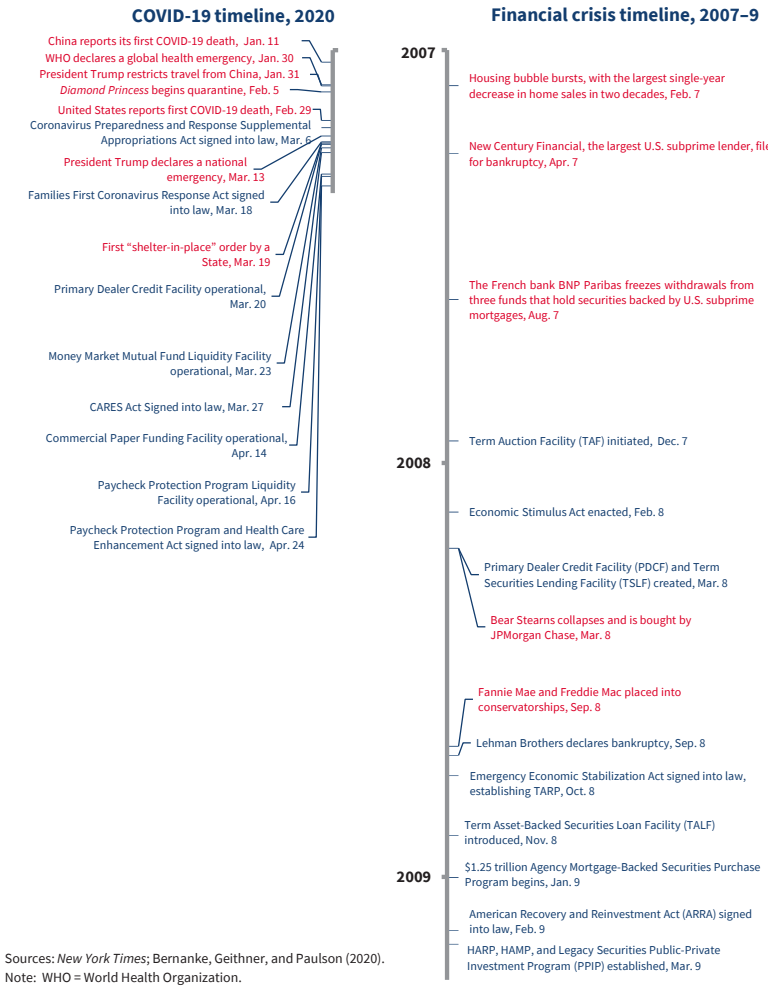
the Great Recession. Later chapters analyze the economic effect of the specific COVID-19 economic interventions.

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 substantial regulatory changes. On the monetary policy side, 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, primarily through the creation of several funding, credit, liquidity, and loan facilities.

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 assets. 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 financial institutions identified as systemically important. This established the Troubled Asset Relief Program, known as TARP. In 2009, the American Recovery and Reinvestment Act 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 automobile industry. In 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act was enacted, entailing substantial changes to the regulatory architecture of U.S. financial markets.

In addition, 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

Figure 1-16. Timelines for the Fiscal and Monetary Responses to COVID-19 and the Financial Crisis



Sources: *New York Times*; Bernanke, Geithner, and Paulson (2020).
Note: WHO = World Health Organization.

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 range of policies (figure 1-16). The Federal Reserve rapidly cut the Federal Funds rate target range to 0 percent at the effective lower bound (0.00–0.25 percent), and it 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's balance sheet jumped by over $3 trillion compared with the five years it took to expand by that amount during the Great Recession. The

Table 1-2. The Federal Response during the Great Recession and COVID-19

Relief Category	Stimulus Checks	Unemployment Insurance	Household Debt Relief	Mid-and-Large Business Relief	Small Business Relief	Healthcare	Education	Tax Cuts, Credits and Deferrals	State and Local Government Aid	Total Legislative Fiscal Relief
Great Recession (Nominal)	$1,200 to joint filers and $300 per dependent ($260 billion)	$25 weekly supplement; up to 99 week extension	Home Affordable Modification Program; Home Affordable Refinance Program	TARP ($700 billion allocated, $420 billion dispersed); Federal Reserve facilities; Bank, insurance and credit market insurance; Auto industry support	SBA loan adjustments	Healthcare subsidization ($128 billion)	K-12 school payroll and facility spending ($109 billion)	Temporary employee-side, 2-percentage-point payroll tax cut Income tax rebate	Funds for programs (some highlighted throughout this table) administered by States and local governments, paid out by theFederal government ($282 billion)	$1.4 trillion ($152 billion ESA 2008, $787 billion ARRA, $475 billion TARP)
COVID-19 Pandemic (Nominal)	$2,400 to joint filers and $500 per dependent (~$300 billion)	$600 weekly supplement; 13-week extension; expanded to include self-employed and others who do not qualify for regular UI ($268 billion)	Foreclosure moratorium; Eviction moratorium	Federal Reserve facilities ($454 billion); Airline loan guarantee and payroll grant; National security critical business loan guarantee ($32 billion)	Paycheck Protection Program ($649 billion); Employee Retention Tax Credit; SBA loan expansion/ modification	HHS public health and research appropriation; Provider Relief Fund ($175 billion)	Education Stabilization Fund ($31 billion); Student debt deferral	Temporary employer-side full payroll tax deferral; Temporary expansion of Net Operating Loss carrybacks; Deferred payments of Social Security taxes through December 2020	Coronavirus Relief Fund ($150 billion)	$2.7 trillion ($192 billion FFCRA, $2.2 trillion CARES, $321 billion PPHCEA)

Sources: Great Recession: Economic Stimulus Act of 2008 (ESA 2008); American Recovery and Reinvestment Act, 2009; Troubled Asset Relief Program (TARP, 2008); COVID-19: Families First Coronavirus Response Act; CARES Act; Paycheck Protection and Health Care Enhancement Act.

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 1-16). During the Great Recession, a fiscal stimulus was rolled out in phases over the course of a year: the Economic Stimulus Act (ESA) in February 2008, the Emergency Economic Stabilization Act in October 2008, and the American Reinvestment and Recovery Act (ARRA) in February 2009. By contrast, during COVID-19 the Federal government passed the Families First COVID-19 Response Act and the CARES Act both within March 2020 (along with the smaller Coronavirus Preparedness and Response Supplemental Appropriations Act). Moreover, the CARES Act delivered $2.2 trillion in fiscal relief, compared with a bit over $800 billion by the ARRA (or about $970 billion after adjusting for inflation). In terms of composition, both fiscal packages 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 Paycheck Protection Program (PPP), which has disbursed $525 billion in loans to small businesses to help them maintain payrolls and avoid insolvency.

Table 1-2 provides a summary comparison of the fiscal response to COVID-19 to that of the Great Recession. As is evident, not only has the magnitude of legislative fiscal relief during COVID-19 been nearly twice as large overall, but the increased aid has also gone primarily to households and small businesses, with more generous unemployment insurance and Economic Impact Payments to the former and the novel PPP to the latter. The next subsection provides a more detailed account of how the policy response to COVID-19 has been unprecedented in the support provided to low-income workers.

Federal Support for 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. This subsection compares these unprecedented measures with those adopted during the Great Recession.

Economic Impact Payments and other tax provisions. In both the COVID-19 recession and the Great Recession, the Federal Government used tax provisions to provide economic support to households. The Economic Stimulus Act of 2008 (ESA), passed during the Bush Administration, included an individual income tax "recovery rebate." The rebates were sent to taxpayers in the form of stimulus checks. The typical tax filer received a credit of up to $600 for single filers 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 was 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). ARRA, passed in 2009 under the Obama Administration, authorized a Making Work Pay personal tax credit for 2009 and 2010, which provided a refundable tax credit of up to $400 for single working individuals and up to $800 per couple. The credit was phased out for incomes over $75,000 (or $150,000 for joint filers) at a rate of 2 cents per $1 of higher income. ARRA also included one-time stimulus payments of $250 for seniors, persons with disabilities, and veterans.

During the COVID-19 recession, the Federal Government has also used tax provisions to provide economic relief to households. The support was larger in monetary value than in the ESA or ARRA, and it was not limited to households with Federal income tax liability, so it thereby extended relief to the lowest-income households. In the CARES Act, the U.S. government provided swift Economic Impact Payments to individuals generally based on 2018 and 2019 tax return information. Those not receiving the advance payments in 2020 can file for them as a tax credit on 2020 taxes. Although the phase-out rate and income thresholds are the same as under ESA and ARRA, the CARES Act payments were significantly larger, offering up to $1,200 to individuals and $2,400 to joint filers (El-Sibaie et al. 2020). The CARES Act payments were also larger for eligible individuals with children. ESA offered an extra $300 tax credit per dependent child, while ARRA expanded eligibility for the child tax credit. The CARES Act, by comparison, provided a $500 tax rebate per dependent child using the same eligibility criteria for dependent children as the child tax credit. Unlike the ESA tax credit, the CARES tax rebate does not require a minimum tax liability to receive the full rebate (Marr et al. 2020), meaning that those at the very lowest end of the income distribution received income support.

Some types of tax relief enacted under ARRA were not paralleled in the CARES Act. ARRA enhanced the Earned Income Tax Credit by expanding its coverage and raising the credit claimed by workers with three or more children. Although these changes were initially enacted on a temporary basis, Congress later made them permanent. ARRA 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).

Workforce programs. In its response to both recessions, the Federal Government provided support for the Nation's workforce. Overall, the CARES Act provided significantly more support. The support was also targeted to reflect the different nature of the crisis. In the Great Recession, out of the $787 billion ARRA stimulus package, about $12 billion helped finance various public workforce programs to accommodate expanded participation (table 1-3). State unemployment insurance agencies received $500 million in administrative support funding and $7 billion in modernization funds 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

Table 1-3. Funding of Major Workforce Program Initiatives under the America Reinvestment and Recovery Act, 2009

Act Funding Category	Funding Amount (billions of dollars)
UI Administration	0.5
UI Modernization	7.0
Wagner–Peyser Act grants to States	0.15
Wagner–Peyser Act reemployment services	0.25
WIA Adult	0.5
WIA Dislocated Worker	1.25
WIA Dislocated Worker National Reserve	0.2
High Growth and Emerging Industry grants	0.75
WIA 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).
Note: WIA = Workforce Investment Act.

to assist States with processing increased caseloads and expanded programs (Emsellem and Evermore 2020; Goger, Loh, and George 2020).

Congress also funded additional enhancements and extensions to the Unemployment Insurance program. In response to the rise in the number of workers unemployed for more than 26 weeks, Congress enacted a temporary extension UI. The Emergency Unemployment Compensation Act of 2008 and its extensions 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.

In 2009, ARRA added to these benefits, providing both for expanded UI duration and an additional benefit of $25 per eligible worker in weekly UI benefits through temporary Emergency Unemployment Compensation. This benefit enhancement cost the Federal Government $20.1 billion during the period 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.

In response to the COVID-19 recession, Congress both temporarily extended the duration of UI benefits and increased their level considerably relative to the Great Recession. Under the CARES Act, UI benefits were extended for up to an additional 13 weeks and States were allowed to eliminate the

mandatory 1-week waiting period before benefits can be released to recipients. The CARES Act also offered a considerable increase in additional UI income—24 times greater than the additional benefit of $25 that was offered during the Great Recession. Workers claiming UI received a $600 weekly supplement through July 15, 2020. 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, workers with limited work history, and other types of workers who would not otherwise qualify for regular UI benefits. After the $600 weekly supplement expired in July and in the absence of Congressional action, the Trump Administration extended relief to unemployed workers by issuing a Presidential Memorandum creating the Lost Wages Assistance Program, which authorized the use of Disaster Relief Funds to make supplemental payments of up to $400 ($300 Federal contribution, $100 optional State contribution) per week for lost wages. Forty-nine states along with Washington, DC and some US territories ultimately signed up for the program, which provided six weeks' worth of benefits to every State and territory that applied by September 10.

During the Great Recession, 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 (table 1-3).

The CARES Act does not have a parallel to ARRA's increase in funding for Reemployment Services Grants and Workforce Innovation and Opportunity Act formula programs. As outlined in a previous CEA report (2019), many government training programs lack rigorous evidence-based results that demonstrate their effectiveness in training or retraining workers and helping them find employment. The CARES Act does, however, provide $345 million in Dislocated Worker Grants to prevent, prepare for, and respond to COVID-19. In addition, the act offers 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 these programs, workers would still be eligible for UI benefits to make up for their reduced working hours.

The CARES Act goes far beyond ARRA to support the workforce through its funding of the PPP. The program was designed to support small business employers and their employees during the pandemic. The CARES Act authorized $349 billion in PPP loans to support payroll and other expenses for America's small businesses, 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.

Healthcare. The Federal response to support healthcare during the COVID-19 recession has been much different from its response in the Great Recession because of the need to directly address the effects of the COVID-19 health crisis. There was no parallel to this in the Great Recession, which was driven by a financial crisis rather than a health-related crisis.

During the Great Recession, the Federal response for healthcare focused on temporarily increasing healthcare benefits for people who lost their jobs. Before the Great Recession, the Consolidated Omnibus Budget Reconciliation Act (COBRA) required many employers to provide continued healthcare coverage to workers (and their dependents) who lost their jobs, but it did not require employers to continue subsidizing the premium payments. ARRA provided a 65 percent subsidy for employers to help cover the premium payments of most COBRA-eligible workers who lost their jobs between September 2008 and May 2010. This subsidy covered workers and their dependents for up to 9 months (later extended to 15 months). The CARES Act did not change the terms of COBRA, but the Department of Labor temporarily extended deadlines for workers who lost their jobs to sign up for coverage and pay premiums.

To respond directly to the COVID-19 health-crisis, the CARES Act established the Provider Relief Fund to support healthcare providers in the midst of the 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 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. The Department of Health and Human Services is currently allocating this $175 billion in aid. The aid includes specific programs to provide safety net relief to hospitals that serve the most vulnerable segment of the population as well as rural hospitals and those in small metropolitan areas.

Although this aid is substantial, the portion going to hospitals is unlikely to fully offset the losses that hospitals have experienced during the pandemic. The American Hospital Association estimates that the pandemic imposed over $200 billion in losses on 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 or so percent of estimated losses are based on the direct costs of COVID-19 to hospitals: losses from COVID-19

hospitalizations, additional purchases of personal protective equipment, and additional support that hospitals provide to their front-line workers.

The CARES Act also provided $25 billion to help increase COVID-19 testing. This includes up to $1 billion to reimburse the cost of testing uninsured individuals, in addition to the $1 billion previously appropriated 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 State Medicaid programs, if a State offers this option. The Centers for Medicare & Medicaid Services has made an accessible and easy-to-use toolkit for States to amend their Medicaid programs in order to offer this service.

Education. During the Great Recession, the Federal Government directed a considerable portion of stimulus spending to education, allocating $100 billion in additional spending under ARRA. A central goal of the funding was to avert layoffs in school districts and universities. About half the funding was allocated to State governors for use in primary, secondary, and higher education through the State Fiscal Stabilization Fund. An additional $10 billion was targeted to low-income students and about $12 billion was designated to support students with disabilities. About $17 billion was used to increase the funding available for Pell Grants for higher education that support students from low-income households. ARRA also established the American Opportunity Tax Credit, which modified an existing education credit (the HOPE credit) by relaxing income-based eligibility limits to cover more students, qualifying more expenses for the credit, and allowing the credit to be claimed not only for study at two-year institutions but also for study at four-year higher education institutions.

Under the CARES Act, the Federal Government provided $31 billion in emergency relief to educational institutions. This includes about $13 billion for K-12 schools allocated mainly in proportion to a State's enrollments of low-income students. Another $14 billion is allocated to higher education, with most of the allocation based on an institution's share of Pell Grant recipients, but with about $1 billion allocated to Historically Black Colleges and Universities and other institutions serving students of color, which are discussed further in chapter 11 of this *Report*. Another $3 billion in relief is for governors to distribute to schools or higher educational institutions that have been particularly affected by COVID-19.

A major difference between the Great Recession and the current crisis is the large number 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. Prorated estimates based on analyses by Angrist and Krueger (1992) and Bhuller, Mogstad, and Salvanes (2017) suggest 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 have had to miss work entirely because of childcare duties induced by school closures may also experience a reduction in lifetime earnings. The CEA estimates that 18 percent of the workforce may experience a persistent 1 percent drop in lifetime earnings because of lost job experience due to school closures. 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. Accordingly, the safe reopening of schools will help to boost the economy and support economically vulnerable students and their families.

Supplemental Nutrition Assistance Program. The Federal Response in both recessions included support for the Supplemental Nutrition Assistance Program (SNAP), the Federal program that provides nutritional assistance to help America's neediest families purchase food. During the Great Recession, ARRA allocated $40 billion in additional SNAP benefits for all participants and raised the minimum benefits. 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 provided authority for work requirement waivers and SNAP 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. During the Great Recession, the Federal response under ARRA provided $13.6 billion for programs administered by the Department of Housing and Urban Development (HUD), including $1.5 billion for the Homelessness Prevention and Rapid Re-Housing Program. As discussed in chapter 2 of this *Report*, the CARES Act provided housing relief to homeowners and renters in the form of forbearance for federally backed mortgages and a 120-day eviction moratorium that was subsequently extended by the Trump Administration via Executive Order 13945, Fighting the Spread of COVID-19 by Providing Assistance to Renters and Homeowners. The CARES

Act also allocated $12.4 billion for programs administered by HUD for fiscal year 2020. The funding includes $4 billion for the homeless who are among the most vulnerable and hardest hit by the pandemic. These funds will support the Emergency Solutions Grants program, which assists 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

The COVID-19 pandemic has had a profound effect on what had been a robust U.S. economy at the start of 2020. The Blue Chip panel of professional forecasters immediately began to sharply revise down its 2020 GDP projections in March as the pandemic was taking hold, as did the Federal Reserve and the OECD when updating their forecasts. Instead of predicting GDP growth of about 2 percent for 2020, all three issued dire warnings of a GDP contraction of about 6 percent to as much as 12 percent—which would have marked the steepest contraction since the 1930s. However, the swift and dramatic fiscal interventions implemented in late March and early April by the Federal Government paid dividends throughout the summer, and the U.S. economy consistently outperformed expectations.

As a result, as of the fall of 2020, all three leading forecasters were taking a much more sanguine view of GDP growth for the year, predicting that GDP will end up falling by less than 4 percent. Whether this robust recovery maintains a healthy pace depends partly on the progression of virus mitigation efforts and the continuation of appropriate and responsive levels of fiscal support. The chapters that follow provide an in-depth discussion of the major components of the fiscal response and their ensuing effects on different aspects of the U.S. economy.