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COVID-19 and the U.S. Economy

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SUMMARY

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COVID-19 and the U.S. Economy

On June 8, 2020, the National Bureau of Economic Research (NBER) announced that the United States entered into a recession in March 2020, a result of the Coronavirus Disease 2019 (COVID-19) pandemic. To prevent the spread of COVID-19, lockdown orders were issued in many parts of the country and travel restrictions were put in place. These measures, along with general fears of the coronavirus, caused swift and large aggregate demand and supply shocks that resulted in the deepest economic downturn the United States has seen since the Great Depression.

In the post-World War II era, the peak unemployment rate of 14.7% in April 2020 was the highest recorded monthly rate, and the second quarter annualized decline in gross domestic product (GDP) of 31.4%, driven by decreases in personal consumption expenditures and gross private fixed investment, was the highest recorded single quarterly decline in real GDP. The pandemic caused relatively low inflation in the aggregate, and prices for certain goods, such as gasoline, decreased by double-digits. Although the economy has improved since the second quarter of 2020, including the highest single quarterly increase in GDP (33.1% annualized) in the third quarter and the decline in unemployment to 6.1% in April 2021, many economic indicators show that economic activity has still not fully recovered. In some cases recovery appears to be slowing. When the public health crisis began, many workers were laid off on temporary furloughs, but since then, many of those temporary job losses have become permanent, leading to concerns that unemployment may remain elevated for several years.

Other indicators are harder to parse. The personal saving rate in the United States increased to a peak of 33.7% in April 2020 and remains elevated from pre-pandemic rates. Although a higher saving rate means lower consumption, which could hamper growth in the short run, it could also translate to higher investment levels, which would contribute to long-run growth. Labor productivity, a measure of labor efficiency, also increased in most major sectors in the beginning of the pandemic, which would tend to positively affect short-run growth. This pattern is consistent with changes in productivity seen during recessions since the 1980s. It is likely caused by employers' ability to furlough or lay off their least efficient workers first, resulting in a temporary increase in capital per remaining worker. Following this initial increase, labor productivity fell in most sectors by the fourth quarter of 2020. Some longer-lasting changes could be possible for specific groups of individuals, such as those who work for industries that have been hardest hit by the pandemic. Questions of changing consumer preference and the potential for the saving rate to remain high could result in changing landscapes for many businesses and for the nature of work itself.

Over the course of the pandemic, Congress approved six major laws—the Coronavirus Preparedness and Response Supplemental Appropriations Act 2020 (P.L. 116-123); the Families First Coronavirus Response Act (P.L. 116-127); the Coronavirus Aid, Relief, and Economic Security (CARES) Act (P.L. 116-136); the Paycheck Protection Program and Health Care Enhancement Act (P.L. 116-139); the Consolidated Appropriations Act, 2021 (P.L. 116-260); and the American Rescue Plan Act of 2021 (P.L. 117-2)—to address the effects of COVID-19 and provide direct assistance to households and businesses. In addition, the Federal Reserve lowered the federal funds rate (the overnight interbank lending rate), increased asset purchases, revived and created new emergency credit facilities, and encouraged the use of the discount window. These policies mitigated the decline in aggregate economic conditions in the short run. Of note, total personal income increased and remains elevated from February 2020 levels. The three rounds of economic impact payments (sometimes referred to as stimulus checks) greatly contributed to personal income in the first few months of the pandemic. In April 2020, January 2021, and March 2021, the payments made up more than 12%, 7%, and 16% of total personal income, respectively, and contributed to increases in the level of total personal income. The overall increase in personal income was very large relative to normal fluctuations in personal income, especially given the unprecedented decreases in employment and GDP in the wake of COVID-19.

There have been some notable debates about potential adverse effects of pandemic-related legislation, including whether the stimulus payments will cause inflation and whether they will add too much to the debt. The legislation is expected to boost GDP in the short term, and the Federal Reserve projects that, in part due to the relief and stimulus, real GDP will increase by 6.5% in 2021. However, some are worried that the economy will grow too quickly and cause overheating. Inflation has picked up in recent months but remains within target for the Federal Reserve's goal of an average of 2%.

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Introduction

On March 13, 2020, President Trump declared the Coronavirus Disease 2019 (COVID-19) pandemic to be a national emergency.[1] As COVID-19 spread across the country, businesses closed, state lockdown orders were put in place, and social distancing measures were adopted in an attempt to slow the spread of the disease. Economic activity skidded to a halt, resulting in a rapid decrease in both employment and gross domestic product (GDP). On June 8, 2020, the National Bureau of Economic Research (NBER) declared that economic activity had peaked in February and a recession began in March 2020.[2]

Most recessions are caused by either an aggregate demand shock (a sudden change in the amount of goods and services desired at a specific price point) or an aggregate supply shock (a sudden change in the amount of goods and services sold at a specific price point), but the pandemic caused problems to both aggregate demand and supply. COVID-19 caused a swift decline in productive capacity and aggregate demand following the implementation of social distancing measures and individual concerns about the spread of the virus.[3] The unemployment rate increased rapidly and consumer spending plummeted as individuals either lost income, ceased patronizing in-person stores and restaurants, or both. As demand for certain goods and services (such as gasoline as people began to telework at unprecedented rates) dropped, demand for others rose quickly and supply chains could not meet that demand. Grocery stores experienced shortages in food, toilet paper, and cleaning supplies and personal protective equipment became scarce.[4] With time, some of these supply chains have corrected but problems continue to arise as the public health crisis evolves. The combination of aggregate demand and aggregate supply problems makes the economic dynamics of this recession unusual and the path of the recession and recovery difficult to predict.

In response to the pandemic and resultant economic downturn, in March and April 2020, Congress passed four laws to provide economic stimulus and assistance to the American people—the Coronavirus Preparedness and Response Supplemental Appropriations Act, 2020 (P.L. 116-123); the Families First Coronavirus Response Act (P.L. 116-127); the Coronavirus Aid, Relief, and Economic Security (CARES) Act (P.L. 116-136); and the Paycheck Protection Program and Health Care Enhancement Act (P.L. 116-139). Additional relief and stimulus was enacted in December 2020 and March 2021 in the Consolidated Appropriations Act, 2021 (P.L. 116-260), and the American Rescue Plan Act of 2021 (P.L. 117-2), respectively. The rollout of vaccination is underway, but in the meantime, some social distancing measures remain in place, and economic activity is not expected to fully return to normal until the pandemic has sufficiently subsided.

This report provides a synopsis of the economic conditions caused by the pandemic and the theoretical context for how and why economic conditions deteriorated so rapidly in many cases.

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[1] President Donald J. Trump, *Proclamation on Declaring a National Emergency Concerning the Novel Coronavirus Disease (COVID-19) Outbreak*, The White House, March 13, 2020, at https://www.whitehouse.gov/presidential-actions/proclamation-declaring-national-emergency-concerning-novel-coronavirus-disease-covid-19-outbreak/.

[2] National Bureau of Economic Research (NBER), "Business Cycle Dating Committee Announcements," at https://www.nber.org/cycles/main.html.

[3] Pedro Brinca, Joao B. Duarte, and Miguel Faria e Castro, *Is the COVID-19 Pandemic a Supply or a Demand Shock?* Federal Reserve Bank of St. Louis, Economic Synopsis no. 31, May 20, 2020, at https://files.stlouisfed.org/research/publications/economic-synopses/2020/05/20/is-the-covid-19-pandemic-a-supply-or-a-demand-shock.pdf.

[4] Ana Swanson, "Global Trade Sputters, Leaving Too Much Here, Too Little There," *The New York Times*, April 10, 2020, at https://www.nytimes.com/2020/04/10/business/economy/global-trade-shortages-coronavirus.html.

The report discusses the following economic indicators: employment and unemployment, GDP and its components, saving, productivity, and inflation. The report then discusses the impacts of fiscal and monetary policy on the economy, most specifically on GDP and personal income. Finally, the report closes with a discussion about the economic landscape moving forward and the potential lasting impacts to the economy from both the pandemic and the recession.

Economic Indicators

The recession caused by COVID-19 is unprecedented in many ways. By many measures, this recession is the deepest since the Great Depression. The peak unemployment rate of 14.7% in April 2020 was the highest monthly rate recorded by the Bureau of Labor Statistics (BLS)[5] since 1948 when the series started; the second quarter of 2020 annualized decline in gross domestic product (GDP) of 31.4% was the highest single quarterly decline in real GDP recorded by the Bureau of Economic Analysis (BEA) since that series started in 1947.[6] The rate of decline in economic activity was also very rapid—seemingly overnight states put lockdown orders into effect, trade and travel were disrupted, and commerce screeched to a halt. The economy has improved since the worst months of the second quarter of 2020 but is still not fully recovered. This section discusses key economic indicators and how the pandemic has affected them.

Employment and Unemployment

COVID-19 and the subsequent public health crisis led to precipitous increases in unemployment and underemployment since March 2020. **Figure 1** contrasts the official U3 unemployment rate—unemployed workers as a percentage of the labor force—with the U6 rate, which also includes those working part-time for economic reasons and discouraged workers (i.e., workers who dropped out of the labor force for a labor market-related issue). The U3 rate reached a peak of 14.7% in April 2020 and has fallen to 6.1% as of April 2021. The U6 rate followed a similar pattern, rising to a high of 22.8% in April 2020 and falling each subsequent month, reaching 10.4% in April 2021.[7] Both the U3 and U6 rates continue to be elevated as compared with pre-pandemic rates, by 2.5 percentage points for U3 and 3.7 percentage points for U6.[8] Although the U6 is the broadest measure of labor underutilization, in this case it does not capture the full effects of the pandemic on the labor force. While discouraged workers account for a portion of the drop in the labor force, many parents (especially women) have also been exiting the labor force due to childcare needs, especially given many schools are now virtual, or other care needs.[9]

[5] Bureau of Labor Statistics (BLS), "Labor Force Statistics from the Current Population Survey: Access to historical data for the "A" tables of the Employment Situation News Release," at https://www.bls.gov/cps/cpsatabs.htm.

[6] Bureau of Economic Analysis (BEA), "National Data: National Income and Product Accounts," at https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=2#reqid=19&step=2&isuri=1&1921=survey.

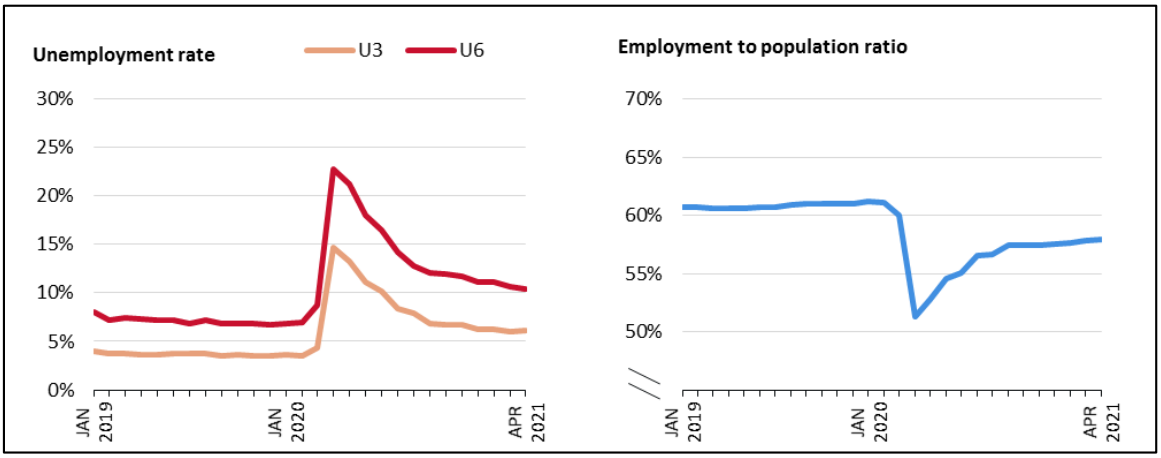
[7] BLS, "Employment Situation Summary—April 2021," news release, May 7, 2021, at https://www.bls.gov/news.release/empsit.nr0.htm.

[8] For further explanation of these rates, see CRS In Focus IF10443, *Introduction to U.S. Economy: Unemployment*, by Lida R. Weinstock.

[9] See, for example, Nicole Bateman and Martha Ross, "Why Has COVID-19 Been Especially Harmful for Working Women?" Brookings Institution, *19A: The Brookings Gender Equality Series*, October 2020, at https://www.brookings.edu/essay/why-has-covid-19-been-especially-harmful-for-working-women/; and Alisha Haridasani Gupta, "Why Did Hundreds of Thousands of Women Drop Out of the Work Force?" *The New York Times*, October 3, 2020, at https://www.nytimes.com/2020/10/03/us/jobs-women-dropping-out-workforce-wage-gap-gender.html.

Analysis of changes in employed workers may offer additional, and in some situations more stable,[10] insights into the state of the labor force. The number of employed workers as a percentage of the noninstitutionalized population decreased substantially during the pandemic. The employment-population ratio hit a low of 51.3% in April 2020 as compared with rates consistently above 60% in the preceding year, and it has since risen to 57.9% in April 2021. In terms of the number of people employed, as compared with pre-pandemic levels in February, the number of employed persons fell by more than 25 million in April 2020 but was down by roughly 7.6 million by April 2021.[11]

Figure 1. The (Un)employment Situation



Source: Bureau of Labor Statistics (BLS).

Note: Seasonally adjusted.

Although unemployment and employment-population rates have begun to recover from April 2020 lows, concerns still exist about significant permanent job loss in the economy. When the public health crisis began, many workers were laid off on temporary furloughs, but since then many of those temporary job losses have become permanent.[12] Assuming jobs return eventually after the pandemic subsides, this increase in permanent layoffs would be considered an increase in cyclical unemployment—unemployment that is a result of the business cycle. However, if the pandemic results in permanent changes to and job losses in some industries, the level of structural unemployment—relatively long-lasting unemployment as a result of shifts in the economy—could increase. **Figure 2** illustrates this phenomenon. In April 2020, due to the sudden closure of many businesses, the percentage of individuals unemployed for less than five weeks increased. Since the shock, the duration of unemployment has been increasing, with those unemployed for more than 14 weeks accounting for over half of all unemployed individuals in October 2020. By April 2021, the percentage of unemployed individuals who had been unemployed for 27 or more weeks was a seasonally adjusted 43.0%, up from 19.2% in February 2020, before the pandemic began.[13]

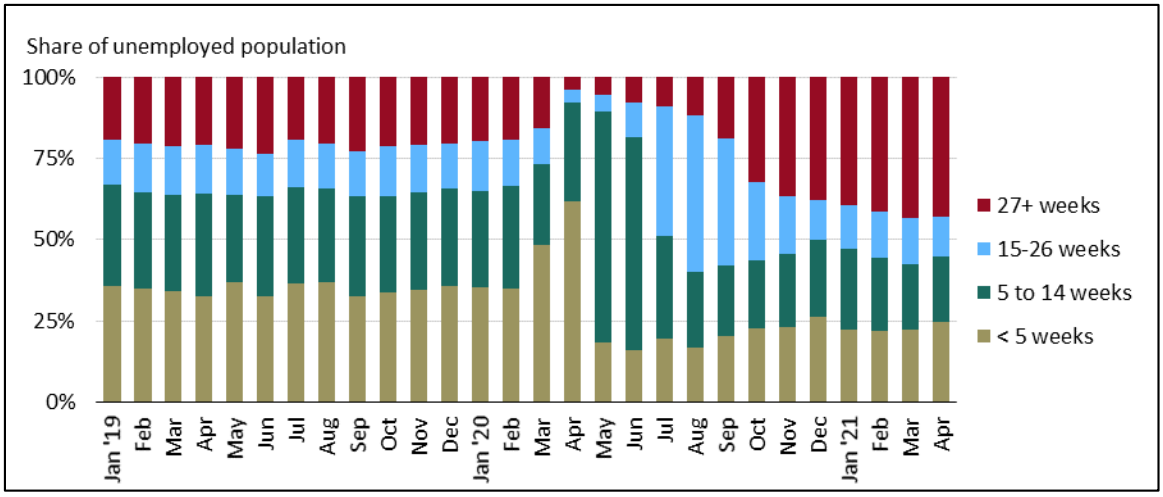
[10] For explanation of why unemployment rates may not be as accurate as normal, see CRS Insight IN11456, *COVID-19: Measuring Unemployment*, by Lida R. Weinstock.

[11] BLS, "Employment Situation Summary—April 2021."

[12] For example, see Greg Iacurci, "Unemployment Was Supposed To Be Temporary. Now, It's Permanent for Almost 4 Million," *CNBC*, October 13, 2020, at https://www.cnbc.com/2020/10/13/covid-related-unemployment-is-now-permanent-for-almost-4-million.html.

[13] BLS, "Access to Historical Data for the "A" Tables of the Employment Situation News Release," May 7, 2021, at https://www.bls.gov/cps/cpsatabs.htm.

Figure 2. Duration of Unemployment



Source: BLS.

Gross Domestic Product and Its Components

Real gross domestic product (GDP)—economic output adjusted for inflation—fell at an annual rate of 5.0% in the first quarter of 2020 and fell at an annual rate of 31.4% in the second quarter of 2020, the largest quarterly decline on record.[14] The decline was driven largely by decreases in personal consumption expenditures and gross private fixed investment.[15] Gross domestic income—a parallel measure to GDP that measures all income derived from production, including wages, profits, and taxes—fell by an annualized 2.5% in the first quarter and 33.5% in the second quarter.[16] GDP partially recovered in the third quarter. BEA's advance estimate[17] of third quarter 2020 real GDP indicates that it rose at an annual rate of 33.1%, a historic gain, but still a smaller-dollar-magnitude gain than the second quarter 2020 dollar loss.[18] Real GDP has recovered significantly, but as of the first quarter of 2021, it is still 0.9% lower than in the fourth quarter of 2019, before the pandemic began (see **Figure 3**).[19]

[14] BEA, "Gross Domestic Product (Third Estimate), Corporate Profits (Revised), and GDP by Industry, Second Quarter 2020," September 30, 2020, at https://www.bea.gov/news/2020/gross-domestic-product-third-estimate-corporate-profits-revised-and-gdp-industry-annual.

[15] For more information on the composition of GDP in the second quarter, see CRS Insight IN11478, *Understanding the Second-Quarter Fall in GDP*, by Mark P. Keightley and Marc Labonte.

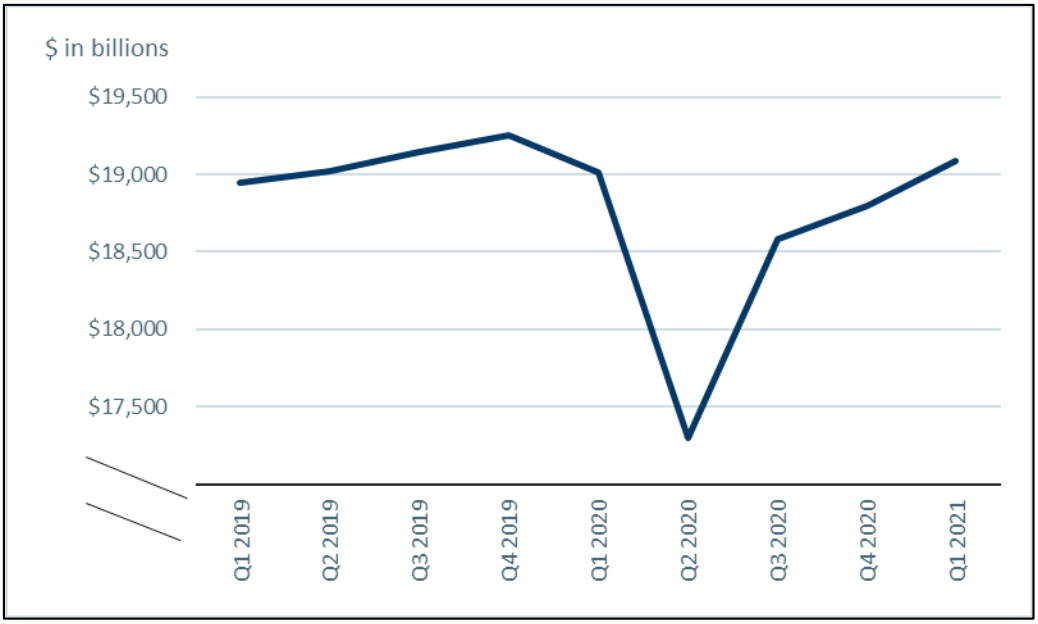
[16] BEA, "Gross Domestic Product (Third Estimate), Corporate Profits (Revised), and GDP by Industry, Second Quarter 2020," September 30, 2020, at https://www.bea.gov/news/2020/gross-domestic-product-third-estimate-corporate-profits-revised-and-gdp-industry-annual.

[17] An advance estimate is based on incomplete data and is subject to revision.

[18] It is important to note that the 33.1% gain in GDP was not larger than the 31.4% fall in GDP in dollar terms. For example, a 31.4% decrease in $100 would result in a $31.4 loss, leaving $68.6. A subsequent 33.1% increase in the remaining $68.6 would result in a $22.7 increase, leaving only $91.3, a lower amount than what was started with.

[19] BEA, "Gross Domestic Product, First Quarter 2021 (Advance Estimate)," April 29, 2021, at https://www.bea.gov/sites/default/files/2021-04/gdp1q21_adv.pdf.

Figure 3. Real Gross Domestic Product (GDP)



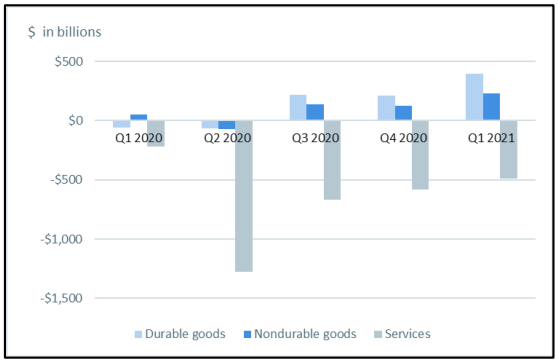
Source: Bureau of Economic Analysis (BEA).

Note: Data using billions of chained 2012 dollars seasonally adjusted at annual rates.

The below series of figures illustrate the cumulative change in each major component of GDP—personal consumption expenditures, gross private domestic investment, net exports of goods and services, and government consumption expenditures and gross investment—since the fourth quarter of 2019. A sharp decline and then rebound in personal consumption expenditures largely drove both the decline and partial recovery of real GDP in 2020.

Figure 4. Personal Consumption Expenditures

(cumulative change from Q4 2019)



Source: CRS calculations based on Bureau of Economic Analysis (BEA) data.

Note: Underlying data chained to 2012 dollars and seasonally adjusted at annual rates.

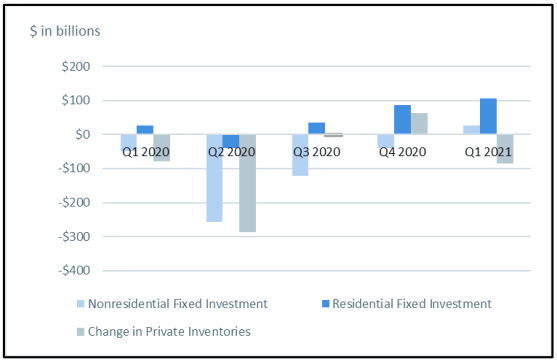
Figure 4 shows the breakdown of personal consumption expenditures into expenditures on goods—durable and nondurable—and services. The majority of the drop in total personal consumption expenditures was due to a decline in spending on services, which decreased by a relatively small amount in the first quarter and then by a large amount in the second quarter before increasing in the latter half of 2020 and, most recently, in the first quarter of 2021. The large impact on services was likely a result of business closures, social distancing, and other measures taken to limit the spread of COVID-19. Spending on nondurable goods (goods that are "single use" or are consumed over a short period of time) has behaved more pro-cyclically than durable goods (goods that can be used over a long period of time) in dollar terms during the pandemic. This can be largely explained by the nature of the public health crisis, which halted spending on certain nondurable goods, such as gasoline for a car or new clothing, to such an extent that nondurable goods as a whole fell by

more than durable goods did. Swift action by the Federal Reserve to lower interest rates and the economic impact payments that went to a sizable portion of the population may have also helped bolster spending on durable goods, which are typically larger investments than nondurable goods, and may have involved taking out a loan or otherwise paying in installments.

Figure 5 shows the breakdown of gross private domestic investment by nonresidential and residential fixed investment, and the change in private inventories. Despite its small share, change in private inventories contributed significantly to the overall fall in gross private domestic investment in the second quarter but recovered to fourth quarter 2019 levels in the third quarter. When COVID-19 first emerged, it led to disruptions in supply chains, which were only further exacerbated when the pandemic reached the United States. Supply chain disruptions, along with a sudden decrease in demand, caused many producers to slow production and run down inventories instead. GDP is based on new production, and therefore the large decrease in inventories contributed to the decline in annualized GDP in the second quarter of 2020 by more than three percentage points.[20] Inventories increased significantly in the third quarter and even surpassed fourth quarter 2019 levels, but inventories decreased again in the first quarter of 2021. Decreases in equipment investment, most notably transportation equipment, contributed to the decrease in nonresidential fixed investment and decreases in new single-family housing investment led the decrease in residential fixed investment in the second quarter of 2020.[21] However, demand for housing has remained strong during the pandemic, and starting in the third quarter of 2020, new single-family housing investment increased, and residential fixed investment therefore picked up as well and remains elevated compared to fourth quarter 2019 levels.[22]

Figure 5. Gross Private Domestic Investment

(cumulative change from Q4 2019)



Source: CRS calculations based on Bureau of Economic Analysis (BEA) data.

Note: Underlying data chained to 2012 dollars and seasonally adjusted at annual rates.

Neither net exports of goods and services nor government consumption expenditures and gross investment contributed significantly to the fall in GDP. As shown in **Figure 6**, although both exports and imports did drop significantly in the first and second quarters of 2020, they did so by a fairly proportional amount, resulting in only a small change to net exports (exports minus imports). Both imports and exports picked back up starting in the third quarter of 2020 but, as of the first quarter of 2021, are still below pre-pandemic levels.

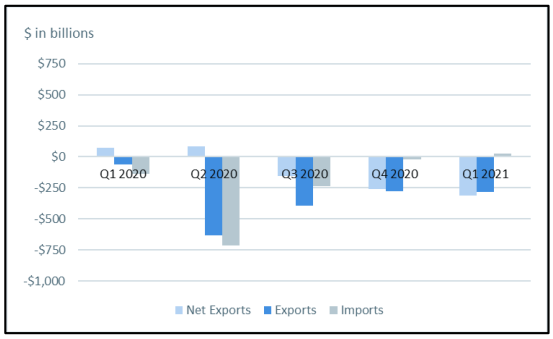
[20] Justin Lahart, "Bullwhip Effect Could Boost U.S. Economy," *The Wall Street Journal*, September 23, 2020, at https://www.wsj.com/articles/bullwhip-effect-could-boost-u-s-economy-11600858980.

[21] BEA, "Gross Domestic Product (Third Estimate), Corporate Profits (Revised), and GDP by Industry, Second Quarter 2020," news release, September 30, 2020, at https://www.bea.gov/news/2020/gross-domestic-product-third-estimate-corporate-profits-revised-and-gdp-industry-annual.

[22] BEA, "Gross Domestic Product, First Quarter 2021 (Advance Estimate)."

Figure 6. Net Exports of Goods and Services

(cumulative change from Q4 2019)

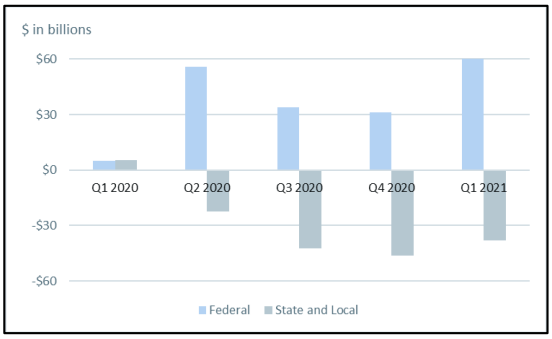


Source: CRS calculations based on Bureau of Economic Analysis (BEA) data.

Note: Underlying data chained to 2012 dollars and seasonally adjusted at annual rates.

Figure 7. Government Consumption Expenditures and Gross Investment

(cumulative change from Q4 2019)



Source: CRS calculations based on Bureau of Economic Analysis (BEA) data.

Note: Underlying data chained to 2012 dollars and seasonally adjusted at annual rates.

As illustrated in **Figure 7**, government consumption expenditures and gross investment did increase throughout the first half of 2020, in part owing to the stimulus measures enacted in March and April that increased federal consumption expenditures, but decreases in state and local expenditures somewhat offset this, resulting in a total 0.82% contribution to the change in real GDP in the second quarter of 2020.[23] Federal spending decreased from the second to third quarter of 2020, in part because certain stimulus spending was completed. State and local spending fell further in the third quarter of 2020, in part due to decreases in revenue necessitating spending cuts in order to balance budgets. Both state and federal spending were up in the first quarter of 2021, due, in part, to the additional legislation.

Saving

Consumer spending and saving are inversely related. Individuals receive a certain amount of after-tax income that they can spend or save. By definition, what is not spent is saved. For this reason, it follows that when personal consumption expenditures decreased as the coronavirus spread, personal saving as a percentage of disposable income would increase, as evidenced by **Figure 8**. As shown, the personal saving rate in the United States increased rapidly to 33.7% by April 2020, fell through November 2020, and then rose in December 2020 and January 2021 and rose again in March 2021. The personal saving rate remains elevated at 27.6% in March 2021 but is still below April 2020's peak. Although personal saving has been on the rise since the financial crisis of 2007-2009,[24] the personal saving rate would likely increase during the pandemic for several reasons, including cash hoarding, the inability to spend money due to business closures, and increased personal income from various stimulus programs, notably the three rounds of economic impact payments. An NBER working paper, in which the authors used a large-scale

[23] BEA, "National Data: National Income and Product Accounts," at https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=2&isuri=1&categories=survey.

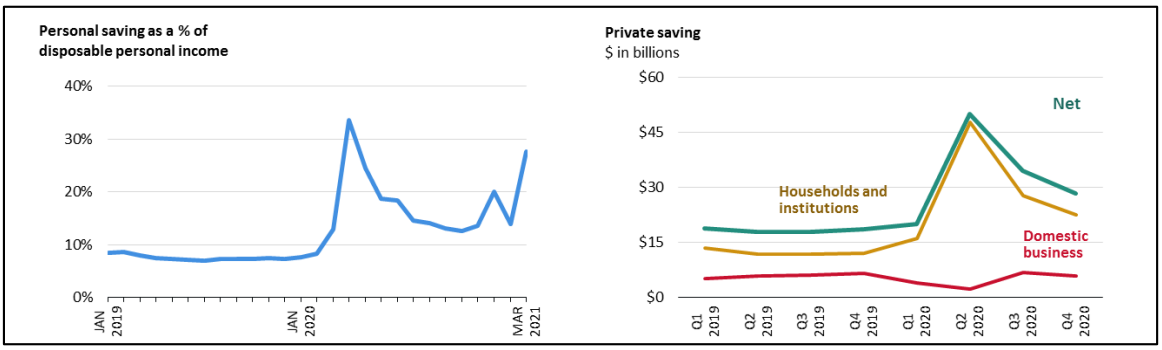
[24] E. Katarina Vermann, "Wait, Is Saving Good or Bad? The Paradox of Thrift," *Economic Research Federal Reserve Bank of St. Louis*, May 2012, at https://research.stlouisfed.org/publications/page1-econ/2012/05/01/wait-is-saving-good-or-bad-the-paradox-of-thrift/.

survey of consumers, found that 33% of individuals reported mostly saving the first round payment, and 52% used it to pay down debt, which would qualify as saving in the context of this report.[25] The Federal Reserve Bank of New York Survey of Consumer Expectations found that respondents saved or expected to save 36.4% of the first round of stimulus, 37.1% of the second round of stimulus, and 41.6% of the third round of stimulus.[26] According to the Census Household Pulse Survey for the period of March 17-29, 2021, for households that had received a stimulus payment in the past seven days, roughly 32% reported mostly saving it.[27]

The inability to spend money due to business closures may be the primary reason for the spike in the personal saving rate. Notably, most of the increase in saving appears to be due to high-income households. According to an economic tracker based on private-sector data created by economists to record the effects of COVID-19 in real-time, as of June 10, high-income households reduced spending by 17% as compared with low-income households by only 4%.[28]

Figure 8 illustrates quarterly net private saving, broken down by domestic businesses and households and institutions. Net private saving, driven by household saving, increased and fell during 2020 but still remained higher than 2019 levels by the fourth quarter of 2020. Levels of business saving decreased over the same period and, despite recovering somewhat in the third quarter of 2020, remain depressed as of the first quarter of 2021, reflecting the cash-flow problems that still plague many industries as the coronavirus forces closures and reduces activities, most notably in the retail and travel sectors.[29]

Figure 8. Saving



Source: BEA.

Note: Data seasonally adjusted.

Productivity

Productivity measures the efficiency of production and is, therefore, an important indicator of how well the economy is running. There are two kinds of production inputs—labor and capital.

[25] Olivier Coibion, Yuriy Gorodnichenko, and Michael Weber, *How Did U.S. Consumers Use Their Stimulus Payments?* NBER, Working Paper no. 27693, August 2020, pp. 2-3.

[26] Olivier Armantier et al., "An Update of How Households Are Using Stimulus Checks," Liberty Street Economics, April 7, 2021, at https://libertystreeteconomics.newyorkfed.org/2021/04/an-update-on-how-households-are-using-stimulus-checks.html.

[27] U.S. Census Bureau, *Week 27 Household Pulse Survey: March 17-March* 29, April 7, 2021, at https://www.census.gov/data/tables/2021/demo/hhp/hhp27.html.

[28] Raj Chetty et al., *How Did COVID-19 and Stabilization Policies Affect Spending and Employment? A New Real-Time Economic Tracker Based on Private Sector Data*, NBER, Working Paper no. 27431, June 2020, p. 2.

[29] BEA, "National Income and Product Accounts," at https://apps.bea.gov/iTable/index_nipa.cfm.

Productivity is typically measured by labor productivity or total factor productivity (sometimes referred to as multifactor productivity, which is the productivity of all inputs combined). This discussion focuses on the former. **Figure 9** shows labor productivity in three major sectors before and during the COVID-19 pandemic. Labor productivity, measured in output per hour, increased in the business and nonfarm business sectors during the second quarter of 2020. Manufacturing labor productivity decreased, likely a result of supply chain problems as described in previous sections. Labor productivity increased across all three sectors in the third quarter, although the increase was smaller than the second quarter increase for the business and nonfarm business sectors. Business and nonfarm business productivity decreased in the fourth quarter. Manufacturing productivity still increased but by a lesser degree than in the third quarter.

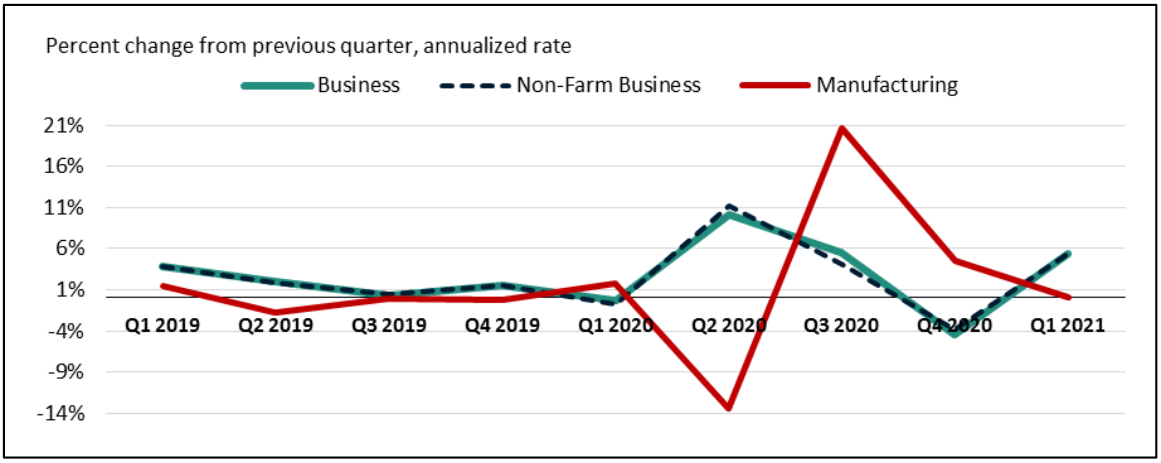
That productivity would increase at all during a recession may seem counterintuitive, but labor productivity has displayed countercyclical behavior for several decades. The mechanical explanation for this is that, during recessions, output drops but hours worked drops by a greater amount, resulting in an overall increase in output per hour. This is observable in the data; in the third quarter of 2020 output remained 4.0% lower that it was in the fourth quarter of 2019 but hours worked was an even greater 7.5% below the fourth quarter of 2019 level.[30] More generally, in a downturn, management can lay off low-skilled or low-performing workers without reducing output by a large margin. During a recession, as unemployment rises, capital per worker increases, a concept known as capital deepening, and this, in turn, causes a short-term boost in worker productivity.[31] The boost in productivity appears to have been temporary, as might be expected given the theory of capital deepening. In the fourth quarter of 2020 both business and nonfarm business productivity fell. All three sectors showed increased productivity in the first quarter of 2021, a result of increases in both output and hour worked, with output increasing by a larger magnitude.[32] This report discusses the possibility of a more structural change to productivity in a later section.

[30] BLS, "Productivity and Costs, Third Quarter 2020, Preliminary," news release, November 5, 2020, at https://www.bls.gov/news.release/prod2.nr0.htm.

[31] See Robert J. Gordon, "The Evolution of Okun's Law and of Cyclical Productivity Fluctuations," EES/IAB Workshop, Labor Market Institutions and the Macreconomy, June 17-18, 2011, pp. 29-34 at http://economics.weinberg.northwestern.edu/robert-gordon/files/RescPapers/EvolutionOkunsLaw.pdf; and John G. Fernald and J. Christina Wang, *Why Has the Cyclicality of Productivity Changed? What Does It Mean?* Federal Reserve Bank of San Francisco, Working Paper no. 2016-7, April 2016, p. 5, at https://www.frbsf.org/economic-research/files/wp2016-07.pdf.

[32] BLS, "Productivity and Costs, First Quarter 2021, Preliminary," news release, May 6, 2021, at https://www.bls.gov/news.release/prod2.nr0.htm.

Figure 9. Major Sector Labor Productivity



Source: BLS.

Inflation

There are a few comparable sources for measuring consumer price inflation in the United States—the personal consumption expenditure (PCE) index, the GDP deflator, and the consumer price index (CPI). All of these indices measure how prices change over time across a series of goods and services. Food and energy prices are typically more volatile than other types of goods and services, and as they often make up a large proportion of total spending, in some circumstances fluctuations in food or energy prices can affect overall inflation in a way that is not indicative of how other goods and services prices are behaving. For this reason, economists calculate a version of inflation that does not include food or energy, known as *core* inflation.[33] Measures of inflation that do include food and energy prices in calculations are often referred to as measures of *headline* inflation.

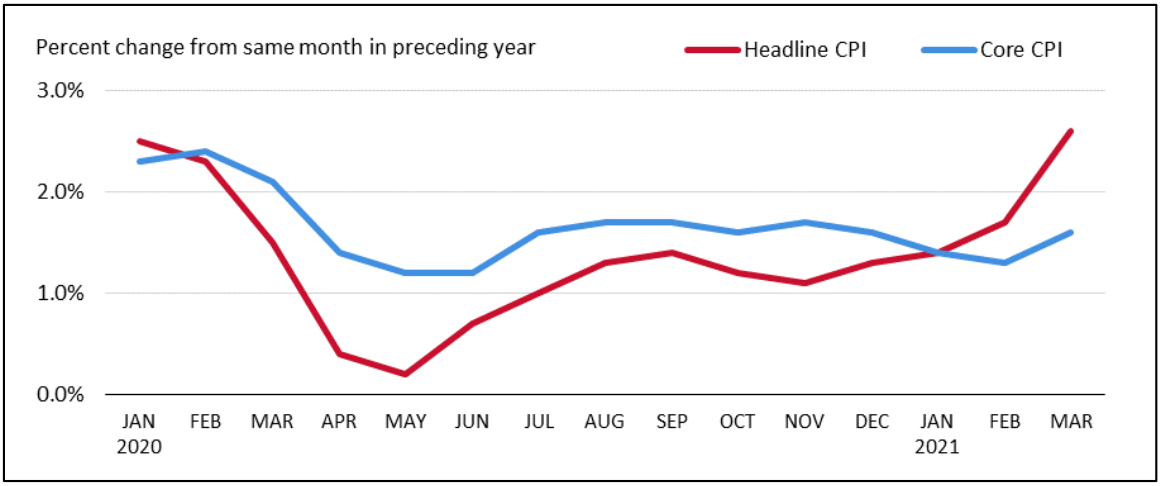
Figure 10 shows the percentage change from a year ago in CPI headline and core inflation for each month in 2020 through March 2021. PCE and GDP deflator methodologies differ slightly from the CPI methodology but show largely similar patterns. As illustrated below, core inflation was more stable than headline inflation, in part due to the large decreases in fuel prices (see **Figure 11**).[34] The Federal Reserve has targeted an inflation rate of 2% in the past, although with its recent change to its monetary policy strategy, it will be targeting an average rate of 2% moving forward.[35] Given 2% as a guide, inflation during the pandemic would be considered low, although headline CPI inflation did surpass 2% in March 2021.

[33] For more information about inflation, see CRS In Focus IF10477, *Introduction to U.S. Economy: Inflation*, by Lida R. Weinstock.

[34] BLS, "Consumer Price Index (CPI) Databases," at https://www.bls.gov/cpi/data.htm.

[35] For more information about the Federal Reserve's Monetary Policy Strategy Statement and the recent changes to it, see CRS Insight IN11499, *The Federal Reserve's Revised Monetary Policy Strategy Statement*, by Marc Labonte.

Figure 10. Consumer Price Index (CPI) Inflation

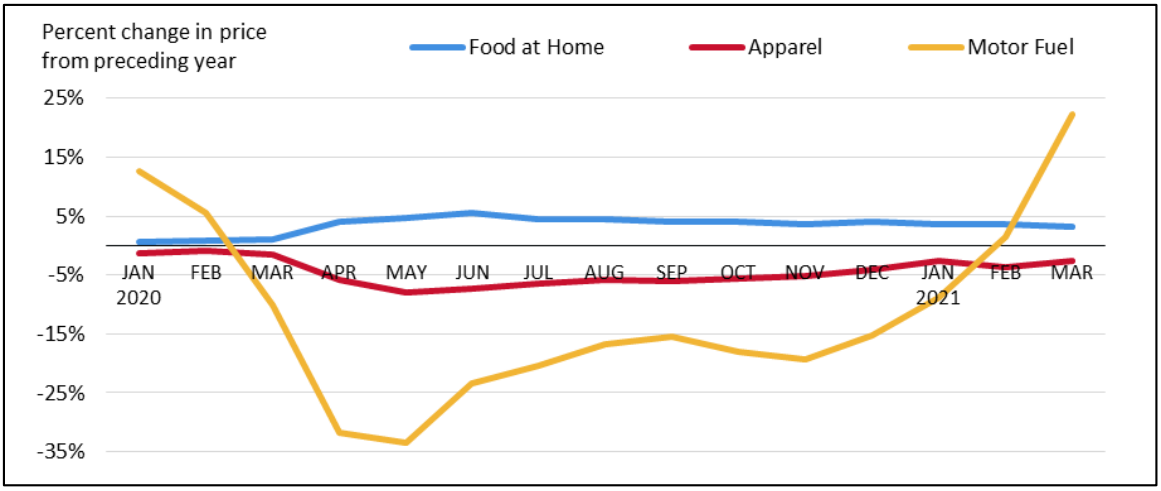


Source: BLS.

In the aggregate, inflation has been low throughout the pandemic, but the price level of individual goods has varied greatly. Because of the nature of the public health crisis, demand for certain goods has increased significantly and demand for other goods has decreased significantly. **Figure 11** shows the magnitude of some of these changes on a few selected consumer goods. Patterns of the spread of COVID-19 and social distancing measures have limited the extent to which people have been able to eat in restaurants and thus demand for food at home, a category that includes groceries, has increased. As discussed in the "Introduction," some supply chains could not meet demand, as was the case for certain food products. Food at-home prices have been consistently around 3-5% higher than they were in the same month of the previous year. Apparel saw an opposite trend. Given fears of the virus and any potential consumer preference changes given the state of the economy, increased telework, or other employment changes, demand for apparel (clothing) fell, and with it apparel prices. A dramatic example of deflation (and inflation) comes with motor fuel (gasoline) prices. A sudden decrease in travel and commuting caused demand for fuel to drop and prices fell drastically, over 33% lower in May 2020 than in May 2019.[36] Since then, fuel prices have generally risen and were 22.2% higher in March 2021 than in March 2020.

[36] BLS, "Consumer Price Index (CPI) Databases," at https://www.bls.gov/cpi/data.htm.

Figure 11. Price Changes of Selected Consumer Goods



Source: BLS.

Policy Impact on the Economy

In response to the COVID-19 pandemic, the federal government implemented a wide range of stimulus and liquidity measures. Congress passed, and the President signed, four major laws between March and April 2020, another in December 2020, and a sixth in March 2021 to address the effects of COVID-19 and provide direct assistance to households and businesses:

- Coronavirus Preparedness and Response Supplemental Appropriations Act, 2020 (P.L. 116-123);
- Families First Coronavirus Response Act (P.L. 116-127);
- Coronavirus Aid, Relief, and Economic Security (CARES) Act (P.L. 116-136);
- Paycheck Protection Program and Health Care Enhancement Act (P.L. 116-139);
- Consolidated Appropriations Act, 2021 (P.L. 116-260); and
- American Rescue Plan Act of 2021 (P.L. 117-2).

The Federal Reserve's response included lowering the federal funds rate (the overnight interbank lending rate), purchasing assets, reviving and creating new emergency credit facilities, and encouraging use of the discount window.[37]

This section discusses the impacts of these policies.

Enacted Policy

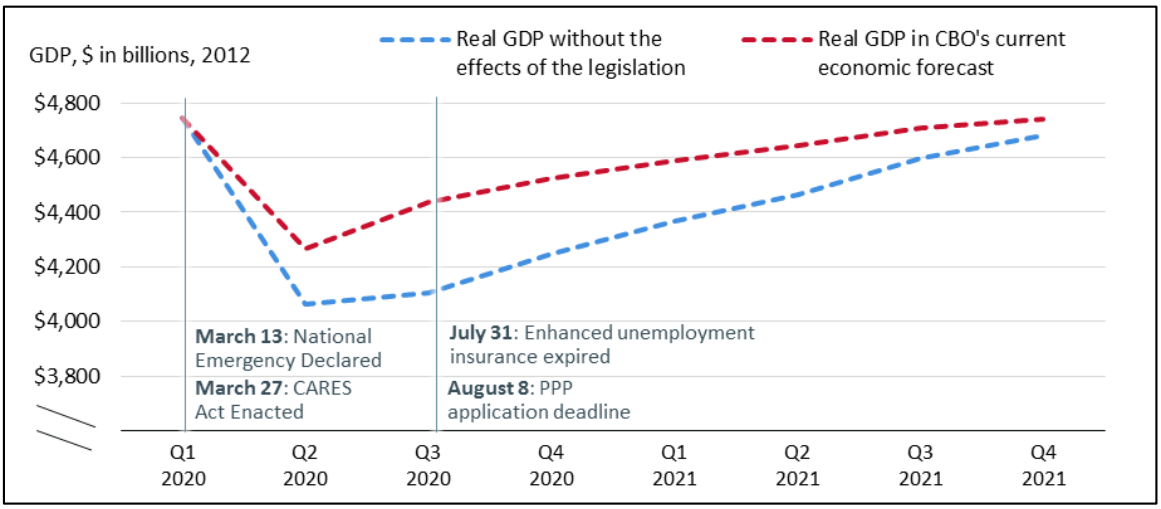
Fiscal Policy Impact

The size and speed of the initial policy response to COVID-19 was historic in both nature and proportion. While much uncertainty still exists, it is clear that the policies enacted over the course

[37] For more information on the Federal Reserve's response to the COVID-19 pandemic, see CRS Report R46411, *The Federal Reserve's Response to COVID-19: Policy Issues*, by Marc Labonte.

of the pandemic have had some positive effects on the economy. The Congressional Budget Office (CBO) published a report on the potential short- and long-term effects of legislation enacted in March and April 2020 on the domestic economy.[38] In the short term, CBO projected the policies enacted would increase real GDP by 4.7% and 3.1% in 2020 and 2021, respectively. In the longer term, CBO expects the policies to increase the debt-to-GDP ratio, resulting in higher borrowing costs, dampened GDP, and smaller national income, assuming no austerity measures are taken.[39] By 2023, CBO projected that GDP would be slightly smaller than if fiscal stimulus had not been implemented. CBO calculates that the policies will increase GDP by 58 cents for every dollar they add to the deficit between 2020 and 2023.[40] **Figure 12** illustrates the quarterly impact of pandemic-related legislation on real GDP through 2021, as projected by CBO. The largest impact occurs in the third quarter of this year and decreases in each subsequent quarter but remains positive through 2021.[41]

Figure 12. Estimated Effects of Pandemic-Related Legislation on Gross Domestic Product



Source: Congressional Budget Office (CBO).

Note: GDP not annualized.

The Consolidated Appropriations Act, 2021, and American Rescue Plan Act of 2021 are also expected to boost GDP in the short term. When additionally accounting for this legislation, the Federal Reserve projects that real GDP will increase by 6.5% in 2021.[42]

[38] CBO, *The Effects of Pandemic-Related Legislation on Output*, September 2020, at https://www.cbo.gov/system/files/2020-09/56537-pandemic-legislation.pdf.

[39] Austerity measures (actions taken to reduce the budget deficit, often through decreased government expenditures) could result in lower levels of debt, and therefore lower borrowing costs, higher GDP, and larger national income in the long-run, although in the short-term could cause further harm to GDP and related measures.

[40] CBO, *The Effects of Pandemic-Related Legislation on Output*, September 2020.

[41] Others have done analyses on the effects of specific legislation on the U.S. economy in the short- and long-term. For example, a study from the Wharton School of the University of Pennsylvania found that the CARES Act would "produce around 1.5 million additional jobs by 2020 Q3 and increase GDP by $812 billion over the next two years." For more detailed information on this analysis, see Alexander Arnon, Zheli He, and Jon Huntley, "Short-Run Economic Effects of the CARES Act," University of Pennsylvania, *Penn Wharton Budget Model*, April 8, 2020, at https://budgetmodel.wharton.upenn.edu/issues/2020/4/8/short-run-effects-of-the-cares-act.

[42] Board of Governors of the Federal Reserve System, *Summary of Economic Projections*, March 17, 2021, p. 2, at

Figure 13 displays the effects of certain pandemic-related enacted provisions on personal income as determined by BEA. The effects are measured as a percentage of total monthly personal income.[43] The economic impact payments had the largest single-month impact on personal income of the programs analyzed. In April 2020, the payments constituted more than 12% of total personal income and were largely responsible for the 12.2% increase in total personal income in the same month. This overall increase in personal income was significant, especially given the unprecedented decreases in employment and GDP in the same month. Personal income in March 2021 remained higher than pre-pandemic levels. This increase and maintenance of levels of personal income, in large part due to pandemic-related legislation, could be responsible for some of the unusual phenomena happening during this recession, such as the maintenance of housing demand and the smaller than usual drop in durable goods spending.

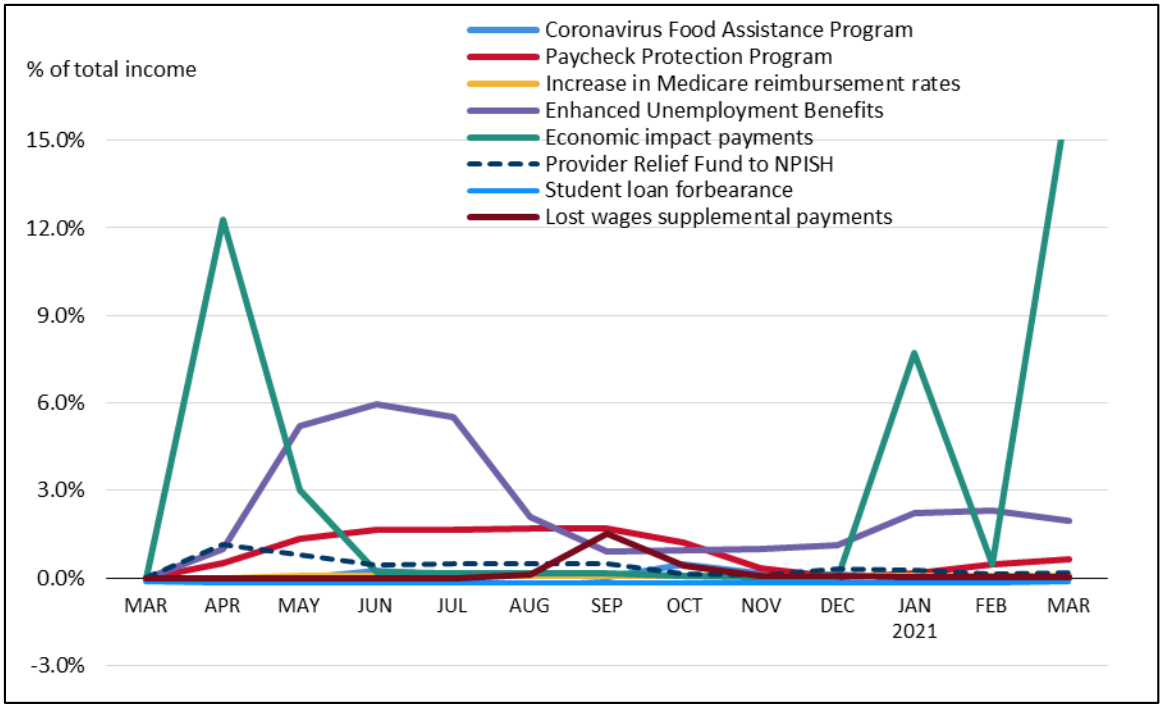
Most of the first round of one-time payments were made in April 2020, and therefore the effects on personal income dropped off very quickly—total personal income fell 4.2% and 1.2% in May and June 2020, respectively. The enhanced unemployment benefits each month also contributed significantly to personal income—over 5% in May, June, and July 2020, at which point the provision for the additional $600 per week expired, likely contributing to a 2.7% drop in total personal income in August 2020.[44] Of note, this 5% represents the effect on total personal income; for those unemployed individuals actually receiving the benefits, this percentage will be much higher because their incomes would be lower than average. Other programs such as the Paycheck Protection Program contributed relatively less to total personal income but would also have much larger effects for those individuals directly receiving the benefits. Despite the amount being lowered, enhanced unemployment benefits have still contributed significantly to personal income since July 2020, generally between 1% and 2%. As can be seen in **Figure 13**, the second and third round of economic impact payments also constituted a large share of personal income in January 2021 (7.7%) and March 2021 (16.7%). As with the first round payment, the bulk of payments were delivered in one month, and therefore it is possible that personal income will fall after March 2021.

https://www.federalreserve.gov/moneteraypolicy/file/fomcprojtabl20210317.pdf.

[43] For example, if total personal income in a given month was $100 and a specific program contributed $10 to total personal income in that month, that program would constitute 10% of total personal income.

[44] BEA, "Effects of Selected Federal Pandemic Response Programs on Personal Income, September 2020," table, October 30, 2020, at https://www.bea.gov/sites/default/files/2020-10/effects-of-selected-federal-pandemic-response-programs-on-personal-income-september-2020.pdf; and BEA, "Personal Income and Outlays," news release, August 2020, October 1, 2020, at https://www.bea.gov/news/2020/personal-income-and-outlays-august-2020.

Figure 13. Effects of Selected Policies on Personal Income



Source: CRS calculations using BEA data.

Notes: Underlying data seasonally adjusted at annual rates. Data subject to revision. NPISH stands for nonprofit institutions serving households.

Monetary Policy Impact

The CBO report cited above includes a brief analysis of the impact of the Federal Reserve's emergency lending facilities on GDP.[45] CBO estimates the lending facilities will increase real GDP by 0.1% and 0.3% in 2020 and 2021, respectively. The budgetary costs to the Federal Reserve are expected to be offset by interest income generated by the programs. More generally, CBO determined that the lending facilities should increase confidence and provide a more stable and favorable lending environment, thereby increasing "overall demand by supporting businesses' and consumers' spending, helping increase businesses' chance of survival, and preserving production capacity, all of which will help expedite a recovery."[46] The emergency lending facilities backed by CARES Act funds expired at the end of 2020, and the Consolidated Appropriations Act, 2021, prohibited the Fed from reopening CARES Act programs for corporate bonds, municipal debt, and the Main Street Lending Program.[47]

Debates About Stimulus

The economic downturn caused by COVID-19 is unusual in that many aspects of dampened demand have been caused by the nature of the public health crisis as opposed to a problem with

[45] CBO, *The Effects of Pandemic-Related Legislation on Output*, September 2020.

[46] CBO, *The Effects of Pandemic-Related Legislation on Output*, September 2020.

[47] For more information about the Federal Reserve's policy response to the pandemic and the expiration of some of these programs, see CRS Report R46411, *The Federal Reserve's Response to COVID-19: Policy Issues*, by Marc Labonte.

economic or financial fundamentals. As such, it is possible that aggregate demand will rebound quickly once the health crisis comes to an end. In this way, the current situation may differ from past recessions, and the need for stimulus may diminish quickly. However, the longer the pandemic persists, the more likely there are to be lasting impacts that could affect aggregate demand and supply even once the crisis has passed. Given the uneven nature of the impacts of COVID-19, it might further be expected that the recovery will be uneven, which could also result in the need for additional targeted stimulus.

No consensus exists in economic or policy communities regarding how long or how much stimulus is appropriate as it relates to recessions generally or COVID-19 specifically. One might look to past fiscal stimulus to help answer these sorts of queries, but economists continue to debate the efficacy and timing of past stimulus. For example, there is debate within the economic community about the effectiveness of the fiscal response to the 2007-2009 recession, with one of the concerns being that stimulus was removed too soon.[48]

As it relates to COVID-19, many economists are concerned about the growing debt and historically large debt-to-GDP ratio. However, many also believe that stimulus should not be withdrawn until the crisis is over and the economy is fully recovered.[49] Others believe that stimulus should be eased and deficit-reduction measures put in place sooner rather than later.[50] Still others argue that stimulus should have already been removed and that short-term gains based on deficit spending will hurt longer-term growth and stability as future generations are forced to pay for the economic decisions of today.[51]

One of the largest concerns raised about pandemic-related legislation is inflation. The Fed projects that inflation will rise modestly to 2.4% in 2021 but decrease to 2% in the longer run.[52] However, some economists believe that after past legislation, the funding provided in the American Rescue Plan Act of 2021 is too large and will result in an overheating economy and a larger temporary or sustained increase in inflation.[53] Inflation did rise above 2% in March 2021, but at this point, it is not clear that higher inflation will be sustained.[54]

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[48] Gerald A. Carlino, *Did the Fiscal Stimulus Work?*, Federal Reserve Bank of Philadelphia, *Economic Insights*, vol. 2, no. 1 (First Quarter 2018), pp. 6-16.

[49] For example, see Committee for a Responsible Federal Budget, "Policymakers Should Avoid Austerity in Addressing the Debt," November 25, 2020, at http://www.crfb.org/blogs/policymakers-should-avoid-austerity-addressing-debt; and Richard Kogan and Paul N. Van De Water, *Rising Federal Debt Should Not Shortchange Response to COVID-19 Crisis*, Center on Budget and Policy Priorities, September 9, 2020, at https://www.cbpp.org/research/federal-budget/rising-federal-debt-should-not-shortchange-response-to-covid-19-crisis.

[50] For example, see Sita Slavov and Alan Viard, "Sound the Alarm on the Federal Debt," *The Hill*, November 23, 2020, at https://thehill.com/opinion/finance/527146-sound-the-alarm-on-the-federal-debt?rl=1.

[51] Veronique de Rugy, *As Bastiat Would Say, Peer Past the Obvious with Pandemic Policies*, Mercatus Center, July 2, 2020, at https://www.mercatus.org/commentary/bastiat-would-say-peer-past-obvious-pandemic-policies.

[52] Board of Governors of the Federal Reserve System, *Summary of Economic Projections*, March 17, 2021, p. 2.

[53] For example, see Olivier Blanchard, *In Defense of Concerns over the $1.9 Trillion Relief Plan*, Peterson Institute for International Economics, February 18, 2021, at https://www.piie.com/blogs/realtime-economic-issues-watch/defense-concerns-over-19-trillion-relief-plan; and Lawrence H. Summers, "Opinion: The Biden Stimulus Is Admirably Ambitious. But It Brings Some Big Risks, Too," *Washington Post*, February 4, 2021, at https://www.washingtonpost.com/opinions/2021/02/04/larry-summers-biden-covid-stimulus/.

[54] For more information about the future path of inflation, see CRS Insight IN11644, *Is High Inflation a Risk in 2021?* by Mark P. Keightley, Marc Labonte, and Lida R. Weinstock.

Future Economic Outlook

Economic Uncertainty

Although the economy has begun to recover from the effects of the COVID-19 pandemic, how long it will take for the economy to fully recover is uncertain. GDP and unemployment improved in the latter half of 2020 but still remained depressed and elevated, respectively, from prior to the pandemic. The recovery has also slowed somewhat since the third quarter of 2020—real GDP rose by a historic annualized 33.4% in the third quarter of 2020, 4.3% in the fourth quarter of 2020, and 6.4% in the first quarter of 2021.[55] Unemployment fell to 6.9% in October 2020 from a high of 14.8% in April 2020 but has fallen only to 6.1% as of April 2021.[56] To a large extent, the economy is unlikely to fully recover until the pandemic has ended. Therefore, economic activity may depend on factors such as when most of the U.S. population will be vaccinated, how effective the vaccine is against new variants, or other advances in treatment. In this case, forecasting when employment will recover may be difficult. Yet current projections suggest possible long-run economic impacts. CBO forecasts, as of February 2021, that real GDP will remain below its potential until 2025 and the unemployment rate will remain elevated for several years, dropping below 5% by 2023 and below 4% by 2026.[57] The forecast assumes no policy changes (and therefore does not take the American Rescue Plan Act of 2021 into account) and is subject to change. Other forecasts are more optimistic about the rate of recovery.[58]

Once the public health crisis has passed, it is possible that the economy will recover at a relatively fast pace, as compared with other recessions. Normally, aggregate demand remains depressed and the economy could take several years to return to full employment after a recession. The current recession is different than past recessions in that it was caused not by an inherently economic or financial shock but by a public health crisis. Given that the macro-fundamentals prior to the pandemic appeared to be sound, once the cause of the recession has passed, it might be assumed that the economy can return to normal quickly. However, the longer the pandemic and resulting recession last, the more likely certain effects are to be longer lasting as well.

Potential Lasting Impacts

The depth and uncertainty of the COVID-19 pandemic and resultant recession have created speculation about potential long-lasting impacts to the economy. It is difficult to speculate about what lasting impacts there might be. To some extent, this will be driven by the length of the pandemic and any structural reforms the federal government might enact in response to the nature of the crisis. Although speculation as to the permanence of any effect is difficult, there is some research about the economic effects of prior pandemics (most notably the Spanish Flu of 1918) that could be of some use in helping frame possible economic hurdles in the coming years. For example, anecdotal evidence from the 1918 pandemic indicate that reduced investment in human capital could be a long-term problem because of any lasting morbidity among survivors and any long-run pressure that might be put on health care and government assistance programs.

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[55] BEA, "Gross Domestic Product, First Quarter 2021 (Advance Estimate)."

[56] BLS, *The Employment Situation—April 2021*, May 7, 2021, at https://www.bls.gov/news.release/empsit.nr0.htm.

[57] CBO, *An Overview of the Budget and Economic Outlook: 2021-2031*, February 1, 2021, at https://www.cbo.gov/publication/56965.

[58] For example, see Board of Governors of the Federal Reserve System, *FOMC Economic Projections*, March 17, 2021, at https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20210317.pdf.

However, the policy response to COVID-19 will likely result in a more positive outcome than the policy response in 1918 did.[59]

As discussed previously, unemployment may take a long time to reach pre-pandemic rates and GDP may take a long time to reach potential GDP, but both are expected to happen eventually. In the aggregate, the economy may fully recover, but there could be longer-lasting impacts for specific groups of individuals. These groups may include those who work for industries that have been hit hardest by the pandemic and may face higher and longer rates of unemployment,[60] individuals from geographical areas that suffered large losses (both of lives and businesses), or low-income individuals that could not bear the costs of the recession as easily as others. Some have forecasted a "K-shaped" recovery, meaning that some groups of individuals and businesses will recover quickly, but the economic situation for others will worsen and take much longer to recover, if ever. For example, telework is possible in certain industries and has allowed work to continue largely uninterrupted, whereas other industries require face-to-face services and have been struggling due to decreased demand. If consumer preferences change as a result of the pandemic, this could mean a changing landscape for businesses. For example, if enough individuals get used to cooking at home and eating out less, this could mean fewer restaurants will exist in the future. Questions of consumer preferences and unemployment rates cannot be answered until there are data on consumer behavior after the pandemic has ended.

In addition, further speculation exists about permanent changes to consumer behavior in the form of the personal saving rate, which has increased during the pandemic. A permanent increase, which cannot be predicted with accuracy at this stage, would dampen the recovery in the short term, but might be a net positive for the economy in the long run.

Another area that has seen much media speculation is changes to the nature of work. Given the overall increase in productivity and the switch to work-from-home for many industries, some speculate that these changes may be at least partially permanent and that there will be an increase in telework opportunities.[61] It is, however, not necessarily evident that the increase in productivity is a direct result of telework, and it is likely that some amount of innovation in the economy has been spurred out of necessity (e.g., research and development for a vaccine) and that innovation and then productivity may decrease once the crisis has passed. Changing norms and preferences towards more telework could still cause an increase in telework opportunities, even if telework turns out to be similarly or less productive than on-site work. Some prominent companies, notably Twitter, have even already made the announcement that they will provide the ability to telework permanently.[62] Such a change at a large scale would have wide-ranging implications for a variety of factors, including office space, transportation networks, IT services, and housing preferences. However, it is difficult to predict whether this type of action will be widespread; for all the ardent supporters of this type of change, there are also detractors, and for the change to be

[59] Vellore Arthi and John Parman, *Disease, Downturns, and Wellbeing: Economic History and the Long-Run Impacts of COVID-19*, NBER, Working Paper no. 27805, September 2020, pp. 2, 23-24, at https://www.nber.org/papers/w27805.pdf.

[60] For more information on industries most impacted by COVID-19 in terms of employment, see CRS Insight IN11564, *COVID-19: Employment Across Industries*, by Lida R. Weinstock.

[61] Katherine Guyot and Isabel V. Sawhill, *Telecommuting Will Likely Continue Long After the Pandemic*, Brookings Institution, Time and the Middle Class Series, April 6, 2020, at https://www.brookings.edu/blog/up-front/2020/04/06/telecommuting-will-likely-continue-long-after-the-pandemic/.

[62] Jessica Guynn, "How Would You Like to Work from Home 'Forever'? Twitter Is Encouraging Employees to Do So," *USA Today*, May 12, 2020, at https://www.usatoday.com/story/tech/2020/05/12/twitter-work-from-home-forever/3118879001/.

widespread across industries, considerable structural changes and technological improvements would need to be made.[63]

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Disclaimer

[63] Organisation for Economic Cooperation and Development (OECD), "Productivity Gains from Teleworking in the Post COVID-19 Era: How Can Public Policies Make It Happen?" *OECD Policy Responses to Coronavirus*, September 7, 2020, at https://www.oecd.org/coronavirus/policy-responses/productivity-gains-from-teleworking-in-the-post-covid-19-era-a5d52e99/.