

Technical Note

Gross Domestic Product, First Quarter 2021 (Advance Estimate)

April 29, 2021

This technical note provides background information about the source data and estimating methods used to produce the estimates presented in the GDP news release; a brief summary of "highlights" is available on BEA's website at www.bea.gov.

COVID-19 Impact on First-Quarter 2021 GDP

Real GDP increased 6.4 percent at an annual rate (1.6 percent at a quarterly rate¹) in the first quarter of 2021, following an increase of 4.3 percent at an annual rate (1.1 percent at a quarterly rate) in the fourth quarter. The increase in first quarter GDP reflected the continued economic recovery, reopening of establishments, and continued government response related to the COVID-19 pandemic. In the first quarter, government assistance payments, such as direct economic impact payments, expanded unemployment benefits, and Paycheck Protection Program loans, were distributed to households and businesses through the Coronavirus Response and Relief Supplemental Appropriations Act and the American Rescue Plan Act. Real GDP for the first quarter of 2021 is 0.9 percent below the level of real GDP for the fourth quarter of 2019². The full economic effects of the COVID-19 pandemic cannot be quantified in the GDP estimate for the first quarter of 2021 because the impacts are generally embedded in source data and cannot be separately identified.

Key Source Data and Assumptions for the Advance Estimate

The advance estimate of GDP for the first quarter is based on source data that are incomplete and subject to updates. Three months of source data were available for consumer spending on goods; shipments of capital equipment; motor vehicle sales and inventories; durable goods manufacturing inventories; wholesale and retail trade inventories; exports and imports of goods; federal government outlays; and consumer, producer, and international prices. For major source data series for which only two months of data were available, or for where data for the first quarter are not yet available, BEA's assumptions were based on a variety of sources, most notably: private high-frequency payment card transactions data to capture rapid shifts in consumer spending; industry and trade association reports that include volume data, such as health care patient visits and traveler throughput; and news reports

¹ Percent changes in quarterly seasonally adjusted series are displayed at annual rates, unless otherwise specified. For more information, see the FAQ "[Why does BEA publish percent changes in quarterly series at annual rates?](#)"

² The fourth quarter of 2019 was the most recent quarter prior to the onset of the COVID-19 pandemic. Calculated as the percent change from the fourth quarter of 2019 to the first quarter of 2021 in news release table 3, line 1.

providing information on the re-opening of businesses. More information on the source data and BEA assumptions that underlie the first-quarter estimate is shown in the [Key Source Data and Assumptions](#) table on the BEA website.

Real GDP and Related Aggregates

Real GDP increased 6.4 percent (annual rate) in the first quarter, following an increase of 4.3 percent in the fourth quarter. The increase in real GDP reflected increases in consumer spending, nonresidential fixed investment, federal government spending, residential fixed investment, and state and local government spending that were partly offset by decreases in private inventory investment and exports. Imports, which are a subtraction in the calculation of GDP, increased.

- The increase in consumer spending reflected increases in durable goods, nondurable goods, and services.
 - Within durable goods, the leading contributors to the increase were motor vehicles and parts (notably, new light trucks), based on unit sales data from Ward’s Automotive Reports; furnishings and durable household equipment (notably, furniture) based on Census Monthly Retail Trade Survey (MRTS) data; and recreational goods and vehicles (notably, information processing equipment) also based on MRTS data.
 - Within nondurable goods, the leading contributors to the increase were food and beverages purchased for off-premises consumption, “other” nondurable goods (notably, recreational items such as games, toys, and hobbies), and clothing and footwear, all based primarily on MRTS data.
 - Within services, the leading contributors to the increase were food services and accommodations (notably, food services), based on MRTS data, and recreation services (notably, gambling) based primarily on states’ casino revenue reports.
- Within nonresidential fixed investment, increases in equipment and intellectual property products were partly offset by a decrease in structures.
 - Within equipment, the increase was widespread. The leading contributor was information processing equipment, based primarily on the Census-BEA U.S. International Trade in Goods and Services Report and the Census Advance Economic Indicators Report.
 - The increase in intellectual property products primarily reflected increases in software and research and development, based primarily on trends in Census Quarterly Services Survey revenue data as well as information from Bureau of Labor Statistics (BLS) Current Employment Statistics (CES).
 - The decrease in structures was led by a decrease in commercial and health care structures, based primarily on January and February Census Value of Construction Put in

Place (VPIP) data, that was partly offset by an increase in mining exploration, shafts, and wells, based primarily on footage drilled data from the American Petroleum Institute.

- The increase in federal government spending primarily reflected an increase in nondefense spending on intermediate goods and services purchased by government. In the first quarter, the processing and administration of [Paycheck Protection Program](#) loan applications by banks on behalf of the federal government added approximately \$13.2 billion (\$52.6 billion at an annual rate) to nondefense services. Federal government purchases of COVID-19 vaccines for distribution to the public contributed to the increase in nondefense goods, and was based on data from the Centers for Disease Control and Prevention.
- Within residential fixed investment, new single-family structures led the increase, primarily reflecting January and February Census VPIP data and a BEA assumption for March based on housing starts.
- Within state and local government spending, the increase reflected increases in compensation, based primarily on BLS CES data, as well as purchases of intermediate goods and services.
- The decrease in private inventory investment was led by decreases in retail trade (notably, motor vehicle dealers), based primarily on Census inventory book value data and unit inventory data from Ward's Automotive Reports, and manufacturing, based primarily on Census inventory data.
- The decrease in exports was led by decreases in foods, feeds, and beverages; other business services; and automotive vehicles, engines, and parts, primarily reflecting Census-BEA U.S. International Trade in Goods and Services data and the Census Advance Economic Indicators Report. For more information, see "[What is the impact of COVID-19 on statistics on trade in services?](#)"
- The increase in imports was led by increases in consumer goods and non-automotive capital goods, based on the Census-BEA U.S. International Trade in Goods and Services Report and the Census Advance Economic Indicators Report.

Real final sales to private domestic purchasers, which measures private demand in the domestic economy and is derived as the sum of consumer spending and private fixed investment, increased 10.6 percent in the first quarter after increasing 5.5 percent in the fourth quarter.

Prices

BEA's featured measure of inflation in the U.S. economy, the price index for gross domestic purchases, increased 3.8 percent in the first quarter, following a 1.7 percent increase in the fourth. Excluding food and energy, gross domestic purchases prices increased 3.1 percent, after increasing 1.6 percent.

The price index for personal consumption expenditures (PCE) increased 3.5 percent in the first quarter, after increasing 1.5 percent in the fourth. Excluding food and energy, the PCE price index increased 2.3 percent, after increasing 1.3 percent. The increase in the PCE price index excluding food and energy

primarily reflected increases in health care (including hospitals and outpatient services) based primarily on BLS producer price indexes.

Disposable Personal Income

Real disposable personal income (DPI) increased 61.3 percent in the first quarter, following a 10.1 percent decrease in the fourth. The increase in current-dollar DPI primarily reflected increases in personal current transfer receipts (notably, government social benefits) and compensation that were partly offset by decreases in proprietors' income and personal dividend income.

- Within government social benefits, “other” social benefits and unemployment insurance increased, primarily reflecting increases in [Economic Impact Payments](#), based on Monthly Treasury Statement data, and in [Pandemic Unemployment Compensation](#) payments, based on data from the Department of Labor.
- Within compensation, the leading contributor to the increase was private wages and salaries, based primarily on BLS CES data.
- Within proprietors' income, a decrease in farm proprietors' income was partly offset by an increase in nonfarm proprietors' income. For farm proprietors' income, the decrease primarily reflected a decrease in payments related to the Coronavirus Food Assistance Program designed to support farmers and ranchers impacted by COVID-19.
- The decrease in personal dividend income was based primarily on company financial data for the first quarter.

The personal saving rate was 21.0 percent in the first quarter, compared with 13.0 percent in the fourth. Additional information on factors impacting quarterly personal income and saving can be found in [“Effects of Selected Federal Pandemic Response Programs on Personal Income”](#).

Federal Government Economic Response to the COVID-19 Pandemic

Since the onset of the COVID-19 pandemic, several [legislative acts](#), including the Coronavirus Aid, Relief, and Economic Security (CARES) Act, the Coronavirus Response and Relief Supplemental Appropriations (CRRSA) Act and the American Rescue Plan (ARP) Act, were signed into law. The acts established several temporary programs and provided additional funding for existing federal programs to support individuals, communities, and businesses impacted by the pandemic. Because the effects of the acts were in the form of transfers to individuals, subsidies to businesses, and grants to state and local governments, their effects on GDP show up indirectly through the components of GDP, such as consumer spending, business investment, and government spending. Thus, BEA cannot separately identify the total effect of the acts on changes in GDP.

It is possible, however, to identify the impacts of select recovery programs on aggregate federal government spending. In the first quarter, the CRRSA and ARP expanded provisions provided through the [Unemployment Insurance Program](#) and the Paycheck Protection Program originally introduced by

the CARES Act. These programs provided additional social benefit payments to persons and government subsidies to industry in the first quarter.

Further information on these and other pandemic response programs, including estimates of the effects of these programs on federal government spending, is available in "[Effects of Selected Federal Pandemic Response Programs on Federal Government Receipts, Expenditures, and Saving](#)" on BEA's website.

Looking Ahead: 2021 Annual Update of the National Economic Accounts

BEA will release results from the 2021 annual update of the National Economic Accounts, which includes the National Income and Product Accounts (NIPAs) as well as the Industry Economic Accounts, later this year. Results from the annual update of the NIPAs will be released on July 29, 2021, along with the advance estimate of GDP for the second quarter of 2021. Results from the annual update of the Industry Economic Accounts will be released on September 30, 2021, along with the third estimate of GDP for the second quarter of 2021. The update of the National Economic Accounts will cover the first quarter of 1999 through the first quarter of 2021 and will result in revisions to GDP, GDP by Industry, and gross domestic income. More information on the 2021 annual update will be included in the forthcoming May *Survey of Current Business* article, "GDP and the Economy."

More Information

The complete set of statistics for the first quarter is available on [BEA's website](#). In a few weeks, the *Survey of Current Business*, BEA's online monthly journal, will present a more detailed analysis of the estimates ("GDP and the Economy").

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