Technical Note

Gross Domestic Product, Second Quarter 2021 (Advance Estimate) and Annual Update

July 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 Second-Quarter 2021 GDP

Real GDP increased 6.5 percent at an annual rate (1.6 percent at a quarterly rate[1]) in the second quarter of 2021, following an increase of 6.3 percent at an annual rate (1.5 percent at a quarterly rate) in the first quarter (revised). The increase in second quarter GDP reflected the continued economic recovery, reopening of establishments, and continued government response related to the COVID-19 pandemic. In the second quarter, government assistance payments in the form of loans to businesses and grants to state and local governments increased, while social benefits to households, such as the direct economic impact payments, declined. Real GDP for the second quarter of 2021 is 0.8 percent above the level of real GDP for the fourth quarter of 2019[2]. The full economic effects of the COVID-19 pandemic cannot be quantified in the GDP estimate for the second 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 second 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 which data for the second 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 more accurately capture changing trends in consumer spending; industry and trade association reports that include volume data, such as health care patient visits and traveler throughput; and news reports providing information on the re-opening of businesses. More information on the

[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 second quarter of 2021 in news release table 3, line 1.

source data and BEA assumptions that underlie the second-quarter estimate is shown in the Key Source Data and Assumptions table on the BEA website.

Real GDP and Related Aggregates

Real GDP increased 6.5 percent (annual rate) in the second quarter, following an increase of 6.3 percent in the first quarter (revised). The increase in real GDP primarily reflected increases in consumer spending, nonresidential fixed investment, and exports, that were partly offset by decreases in private inventory investment, residential fixed investment, and federal government spending. Imports, which are a subtraction in the calculation of GDP, increased.

- The increase in consumer spending reflected increases in both services and goods. Within services, the leading contributors to the increase were food services and accommodations as well as recreation services. Within goods, both durable and nondurable goods increased.
    - For food services and accommodations, food services led the increase, based on Census Bureau Monthly Retail Trade Survey (MRTS) data.
    - For recreation services, the largest contributor to the increase was gambling, based primarily on a sample of states' casino revenue reports.
    - Within durable goods, the leading contributor to the increase was motor vehicles and parts (led by new light trucks), based primarily on motor vehicle registrations data from IHS Markit Polk.
    - Within nondurable goods, the leading contributors to the increase were "other" nondurable goods (notably, pharmaceutical products based on data from IMS Health) as well as clothing and footwear, based primarily on Census MRTS data.
- Within nonresidential fixed investment, increases in equipment and intellectual property products were partly offset by a decrease in structures.
    - Within equipment, the leading contributors to the increase were transportation equipment (notably, light trucks and aircraft) and industrial equipment (notably, special industry machinery). For light trucks, the increase was led by used light trucks, based primarily on price data from the Bureau of Labor Statistics (BLS) Consumer Price Index. For aircraft and special industry machinery, the increases were based on manufacturers' shipments and trade data from the Census Bureau.
    - The increase in intellectual property products reflected increases in research and development as well as software, based primarily on employment, earnings, and hours data from the BLS Current Employment Statistics (CES).
    - The decrease in structures was led by a decrease in commercial and health care structures, based primarily on April and May Census Value of Construction Put in Place data.

- The increase in exports reflected increases in both goods and services, based on Census-BEA U.S. International Trade in Goods and Services data and the Census Advance Economic Indicators Report for June. Within goods, the increase was led by non-automotive capital and consumer goods. Within services, the increase was led by travel.

- The decrease in private inventory investment was widespread, the largest contributor to the decline was retail trade (notably, motor vehicle dealers), based primarily on Census inventory book value data, as well as unit inventory data from Wards Intelligence.

- The decrease in residential fixed investment primarily reflected a decrease in brokers' commissions and other ownership transfer costs, based primarily on existing home sales data from the National Association of Realtors.

- The decrease in federal government spending primarily reflected a decrease in nondefense spending on intermediate goods and services. In the second quarter, nondefense services decreased as the processing and administration of Paycheck Protection Program (PPP) loan applications by banks on behalf of the federal government declined by $20.9 billion, in current dollars, compared to the first quarter.

- The increase in imports reflected increases in both goods and services, based on Census-BEA U.S. International Trade in Goods and Services data and the Census Advance Economic Indicators Report for June. Within goods, the increase was led by non-automotive capital goods as well as industrial supplies and materials (notably, petroleum and products). Within services, the increase was led by travel.

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 9.9 percent in the second quarter after increasing 11.8 percent in the first quarter.

Prices

BEA's featured measure of inflation in the U.S. economy, the price index for gross domestic purchases, increased 5.7 percent in the second quarter, following a 3.9 percent increase in the first. Excluding food and energy, gross domestic purchases prices increased 5.5 percent, after increasing 3.2 percent.

The price index for personal consumption expenditures (PCE) increased 6.4 percent in the second quarter, after increasing 3.8 percent in the first. Excluding food and energy, the "core" PCE price index increased 6.1 percent, after increasing 2.7 percent. The second quarter increase in the "core" PCE price index excluding food and energy reflected widespread increases across goods and services, led by motor vehicles and parts (notably, used motor vehicles).

Disposable Personal Income

Real disposable personal income (DPI) decreased 30.6 percent (at an annual rate) in the second quarter, in contrast to a 57.6 percent increase in the first. The decrease in current-dollar DPI primarily reflected a decrease in personal current transfer receipts (notably, government social benefits) that was partly offset by increases in compensation and proprietors' income.

- Within government social benefits, "other" social benefits and unemployment insurance decreased, primarily reflecting decreases 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, both nonfarm and farm proprietors' income increased. For nonfarm income, the increase reflected the continued resumption of business operations as well as an increase in government assistance from the PPP. For farm income, an increase in payments related to the Coronavirus Food Assistance Program designed to support farmers and ranchers impacted by COVID-19 contributed to the overall increase.

The personal saving rate was 10.9 percent in the second quarter, compared with 20.8 percent in the first. 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 second quarter, there was a decrease in social benefit payments to persons provided through the Unemployment Insurance Program. Federal government subsidies to businesses increased, specifically in the form of additional Paycheck Protection Program loans and through the Restaurant Revitalization Fund, as authorized by the ARP.

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.

Summary Results from the Annual Update

Today's release presents results from the annual update of the NIPAs. This year's update includes revised estimates for the first quarter of 1999 through the first quarter of 2021. See Information on Updates to the National Economic Accounts for a summary of results through 2020 and a discussion of methodology changes.

The updated estimates show that real GDP increased 1.1 percent at an average annual rate for the most recent five years from 2015-2020, unrevised from the previously published estimate. Over the same period, real GDI increased 1.0 percent, compared with the previously published 0.9 percent.

The average annual rate of change during recent business cycles were little changed from previously published estimates.

- For the period of expansion from the second quarter of 2009 through the fourth quarter of 2019, real GDP increased at an annual rate of 2.3 percent, the same as previously published.

- For the period of contraction from the fourth quarter of 2019 through the second quarter of 2020, real GDP decreased at an annual rate of 19.2 percent, the same as previously published.

- For the period of expansion from the second quarter of 2020 through the first quarter of 2021, real GDP increased at an annual rate of 14.1, an upward revision of 0.1 percentage point from the previously published estimate.

Shortly after the release, BEA will post materials that discuss the results in more detail and will include a table showing the major source data incorporated as part of the update. The upcoming August *Survey of Current Business* will feature an article describing the results of the annual update.

Updates for the First Quarter of 2021

For the first quarter of 2021, real GDP is estimated to have increased 6.3 percent, a downward revision of 0.1 percentage point from the previously published estimate. The updated first quarter estimates primarily reflect downward revisions to federal government spending, state and local government spending, and exports that were partly offset by an upward revision to nonresidential fixed investment.

For the first quarter of 2021, real GDI is now estimated to have increased 6.3 percent, a downward revision of 1.3 percentage points. The leading contributor to the downward revision was compensation, based primarily on new first-quarter wage and salary estimates from the BLS Quarterly Census of Employment and Wages.

More Information

The complete set of statistics for the second 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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