Technical Note

Gross Domestic Product, Third Quarter 2021 (Advance Estimate)

October 28, 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 Third-Quarter 2021 GDP

Real GDP increased 2.0 percent at an annual rate (0.5 percent at a quarterly rate[1]) in the third quarter of 2021, following an increase of 6.7 percent at an annual rate (1.6 percent at a quarterly rate) in the second quarter. In the third quarter, a resurgence of COVID-19 cases resulted in new restrictions and delays in the reopening of establishments in some parts of the country. Government assistance payments in the form of forgivable loans to businesses, grants to state and local governments, and social benefits to households all decreased. Advance Child Tax Credit payments authorized by the American Rescue Plan started in the third quarter and partly offset the decline in social benefits to households.

Real GDP for the third quarter of 2021 is 1.4 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 third 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 third 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; manufacturing, 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 third 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

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

include volume data, such as health care patient visits and traveler throughput; and news reports providing information on the operating status of businesses. More information on the source data and BEA assumptions that underlie the third-quarter estimate is shown in the Key Source Data and Assumptions table on the BEA website.

Real GDP and Related Aggregates

Real GDP increased 2.0 percent (annual rate) in the third quarter, following an increase of 6.7 percent in the second quarter. The increase in real GDP reflected increases in private inventory investment, consumer spending, state and local government spending, and nonresidential fixed investment that were partly offset by decreases in residential fixed investment, federal government spending, and exports. Imports, which are a subtraction in the calculation of GDP, increased.

- The increase in private inventory investment was widespread, led by wholesale and retail trade industries, primarily reflecting Census Bureau book values for all three months of the quarter. Within retail, motor vehicle dealers was the leading contributor, based on monthly inventory data from Census and Wards Intelligence.

- The increase in consumer spending reflected an increase in services that was partly offset by a decrease in goods. Within services, the leading contributors to the increase were “other” services, transportation services, health care, and food services and accommodations. Within goods, a decrease in durable goods was partly offset by an increase in nondurable goods.

    - Within “other” services, the leading contributor to the increase was foreign travel, based on data from BEA’s International Transactions Accounts and airline companies’ earnings reports.

    - The increase in transportation services reflected increases in public transportation (notably, air transportation), based on data from the Transportation Security Administration and airline companies’ earnings reports, and motor vehicle services (notably, motor vehicle rental), based primarily on payment card transactions data.

    - Within health care, the increase was led by hospitals (notably, nonprofit hospitals), based on Bureau of Labor Statistics (BLS) Current Employment Statistics (CES) data as well as data from trade sources.

    - Within food services and accommodations, both categories contributed to the increase. The increase in accommodations primarily reflected increases in hotels and motels, based on private data from STR, as well as housing at schools, based primarily on university occupancy rates from trade sources. The increase in food services was based on Census Monthly Retail Trade Survey (MRTS) data.

    - Within goods, the decrease in durable goods was led by motor vehicles and parts (notably, new light trucks), based on Wards Intelligence unit sales data and IHS Markit-Polk registrations data. For nondurable goods, the leading contributor to the increase was gasoline and other motor fuel, based primarily on data from the Energy Information Administration.

- The increase in state and local government spending primarily reflected an increase in compensation of state and local government employees (notably, education), based on BLS employment data.

- Within nonresidential fixed investment, an increase in intellectual property products was partly offset by decreases in structures and equipment.

    - The increase in intellectual property products reflected increases in software (notably, prepackaged software) and research and development, based primarily on trends in Census Quarterly Services Survey revenue data as well as BLS CES data.

    - Within equipment, the leading contributors to the decrease were transportation equipment (notably, new light and heavy trucks) and information processing equipment (notably, communication equipment). For trucks, the decrease was based primarily on unit sales data from Wards Intelligence. For communication equipment, the decrease primarily reflected Census-BEA U.S. International Trade in Goods and Services imports data and the Census Advance Economic Indicators Report for September.

    - The decrease in structures was led by commercial and health care structures, based primarily on July and August Census Value of Construction Put in Place data.

- The decrease in exports reflected a decrease in goods that was partly offset by an increase in services, based on Census-BEA U.S. International Trade in Goods and Services data and the Census Advance Economic Indicators Report for September. The decrease in goods was led by foods, feeds, and beverages and nondurable industrial supplies and materials (notably, petroleum and petroleum products). The increase in services was led by other business services.

- The decrease in residential fixed investment primarily reflected decreases in improvements, based primarily on data from the Census MRTS and BLS CES, and single-family structures, based on Census Value of Construction Put in Place.

- The decrease in federal government spending primarily reflected a decrease in nondefense spending on intermediate goods and services, notably services, as the processing and administration of Paycheck Protection Program (PPP) loan applications by banks on behalf of the federal government dropped to zero in the third quarter with the June expiration of the PPP loan application period.

- The increase in imports primarily reflected an increase in services, based on Census-BEA U.S. International Trade in Goods and Services data and the Census Advance Economic Indicators Report for September. The increase was led by travel (notably, personal travel) and transport.

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 1.1 percent in the third quarter after increasing 10.1 percent in the second quarter.

Prices

BEA's featured measure of inflation in the U.S. economy, the price index for gross domestic purchases, increased 5.4 percent in the third quarter, following a 5.8 percent increase in the second. Excluding food and energy, gross domestic purchases prices increased 4.8 percent, after increasing 5.6 percent.

The price index for personal consumption expenditures (PCE) increased 5.3 percent in the third quarter, after increasing 6.5 percent in the second. Excluding food and energy, the "core" PCE price index increased 4.5 percent, after increasing 6.1 percent. The third quarter increase in "core" PCE prices was widespread; the leading contributors were motor vehicles and parts (for both new and used motor vehicles), foods services and accommodations (for meals as well as hotels and motels), and housing, based primarily on BLS consumer price indexes.

Disposable Personal Income

Real disposable personal income (DPI) decreased 5.6 percent (at an annual rate) in the third quarter, compared with a 30.2 percent decrease in the second. The decrease in current-dollar DPI primarily reflected a decrease in personal current transfer receipts (notably, government social benefits) that was partly offset by an increase in compensation.

- Within government social benefits, unemployment insurance and "other" social benefits decreased, primarily reflecting decreases in Pandemic Unemployment Compensation payments which ended in September, based on data from the Department of Labor, and in Economic Impact Payments, based on Monthly Treasury Statement data. These declines were partly offset by an increase in the advance Child Tax Credit payments.

- Within compensation, the leading contributor to the increase was private wages and salaries, based primarily on BLS CES data.

The personal saving rate was 8.9 percent in the third quarter, compared with 10.5 percent in the second. 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. 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].

Impact of Hurricane Ida on Third Quarter 2021 Estimates

Hurricane Ida struck the United States on August 29 causing wind and flood damage in Louisiana, Mississippi, and Alabama. On September 1, the storm caused significant flash flooding in the northeast. These natural disasters disrupted consumption and business activities while provision of emergency and remediation services increased in response to the disasters. These impacts on production are included, but not separately identified, in the source data that BEA uses to prepare the estimates of GDP; consequently, it is not possible to estimate the overall impact of Hurricane Ida on 2021 third quarter GDP. The destruction of fixed assets, such as residential and nonresidential structures, does not directly affect GDP or personal income. BEA estimates of disaster losses are presented in NIPA table 5.1, "Saving and Investment." BEA's preliminary estimates show that Hurricane Ida resulted in losses of $58.0 billion in privately-owned fixed assets ($232.0 billion at an annual rate) and $4.0 billion in state and local government-owned fixed assets ($16.0 billion at an annual rate).

BEA also estimates the insurance benefits paid and received as a result of major disasters. These benefits are recorded on an accrual basis in the quarter in which the disaster occurred and are classified as capital transfers; they do not directly affect the measures of GDP, personal income, or saving. BEA's preliminary estimates, presented in NIPA table 5.11U, "Capital Transfers," show domestic insurance companies expect to pay benefits for disaster losses related to Hurricane Ida in the amount of $23.7 billion ($94.8 billion at an annual rate), and foreign insurance companies expect to pay $3.8 billion ($15.2 billion at an annual rate).

For additional information, see "How are the measures of production and income in the national accounts affected by a natural or man-made disaster?"

More Information

The complete set of statistics for the third 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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