Technical Note

Gross Domestic Product, Fourth Quarter and Year 2020 (Advance Estimate)

January 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 Fourth-Quarter 2020 GDP

Real GDP increased 4.0 percent at an annual rate (1.0 percent at a quarterly rate[1]) in the fourth quarter of 2020, following an increase of 33.4 percent at an annual rate (7.5 percent at a quarterly rate) in the third quarter. The increase in fourth quarter GDP reflected both the continued economic recovery from the sharp declines earlier in the year and the ongoing impact of the COVID-19 pandemic, including new restrictions and closures that took effect in some areas of the United States. Real GDP for the fourth quarter of 2020 is 2.5 percent below 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 fourth quarter of 2020 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 fourth quarter is based on source data that are 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 fourth 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 better capture shifts in consumer spending, and industry and trade association reports that include volume data, such as health care patient visits and traveler throughput. More information on the source data and BEA assumptions that underlie the fourth-quarter estimate is shown in the Key Source Data and Assumptions table.

[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. The percent change from the fourth quarter of 2019 to the fourth quarter of 2020 is presented in news release table 6, line 1.

Real GDP and Related Aggregates

Real GDP increased 4.0 percent (annual rate) in the fourth quarter, following an increase of 33.4 percent in the third quarter. The increase in real GDP reflected increases in exports, nonresidential fixed investment, consumer spending, residential fixed investment, and private inventory investment that were partly offset by decreases in state and local as well as federal government spending. Imports, which are a subtraction in the calculation of GDP, increased.

- The increase in exports reflected increases in both goods and services. Within goods, the increase was widespread; the largest contributors were non-automotive capital goods and non-petroleum industrial supplies and materials, based primarily on Census-BEA U.S. International Trade in Goods and Services and Census Advance Economic Indicators Report data. Within services, the largest contributor to the increase was travel, based primarily on data on international travelers from U.S. Customs and Border Protection. For more information, see "What is the impact of COVID-19 on statistics on trade in services?"

- Within nonresidential fixed investment, equipment and intellectual property products were the leading contributors to the increase.

    - Within equipment, the increases were widespread. The leading contributors were transportation equipment, notably light trucks, based primarily on sales data from Ward's Automotive Reports, and information processing equipment, based on manufacturers' shipments and trade data from the Census Bureau.

    - Within intellectual property products, both research and development and software investment increased, based primarily on data from the Bureau of Labor Statistics (BLS) Current Employment Statistics (CES).

- The increase in consumer spending reflected an increase in services that was partly offset by a decrease in goods. Within services, spending by both households and nonprofit institutions serving households increased. The increase in household spending primarily reflected increases in health care, recreation, and "other" services that were partly offset by a decrease in food services and accommodations.

    - Within health care, outpatient services (in particular, physician services and paramedical services) led the increase, based primarily on patient volume data, payment card transactions data, and BLS CES employment, earnings, and hours data.

    - Within recreation services, the increase was led by membership clubs, sports centers, parks, theaters and museums, based primarily on payment card transactions data.

    - Within "other" services, the leading contributors to the increase were personal care, professional, and social services based primarily on BLS CES data and volume data.

    - Within food services and accommodations, the leading contributor to the decrease was food services, based on data from the Census Monthly Retail Trade Survey (MRTS).

- The largest contributor to the increase in nonprofit services was hospital services, primarily reflecting BLS CES data.

- The decrease in goods primarily reflected declines in food and beverages for off-premises consumption as well as furnishings and durable household equipment, based on Census MRTS data, that were partly offset by an increase in new motor vehicles, based primarily on unit sales data from Ward's Automotive Reports.

- Within residential fixed investment, the largest contributor to the increase was single-family structures, reflecting October and November Census Value of Construction Put in Place data and a BEA assumption for December based on housing starts.

- The increase in private inventory investment reflected increases in manufacturing and wholesale trade that were partly offset by a decrease in retail trade, based primarily on Census inventory book value data.

- Within state and local government spending, the decrease reflected a decline in compensation, based primarily on BLS CES data.

- The decrease in federal government spending was more than accounted for by a decline in nondefense spending that primarily reflected a decrease in the intermediate services purchased by government. In the third quarter, the processing and administration of Paycheck Protection Program loan applications by banks on behalf of the federal government added approximately $3 billion (about $13 billion at an annual rate). There were no expenditures by the federal government for Paycheck Protection Program loans in the fourth quarter.

- Within imports, the increase was widespread; the largest contributors were consumer goods, automotive vehicles, engines, and parts, as well as 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 5.6 percent in the fourth quarter after increasing 39.0 percent in the third quarter.

Prices

BEA's featured measure of inflation in the U.S. economy, the price index for gross domestic purchases, increased 1.7 percent in the fourth quarter, following a 3.3 percent increase in the third. Excluding food and energy, gross domestic purchases prices increased 1.7 percent, after increasing 3.0 percent.

The price index for personal consumption expenditures (PCE) increased 1.5 percent in the fourth quarter, after increasing 3.7 percent in the third. Excluding food and energy, the PCE price index increased 1.4 percent, after increasing 3.4 percent. The increase in the PCE price index excluding food and energy primarily reflected increases in housing, hospital services, and food services, based primarily on consumer and producer price indexes from the BLS.

Disposable Personal Income

Real disposable personal income (DPI) decreased 9.5 percent in the fourth quarter, following a 16.3 percent decrease in the third. The decrease in current-dollar DPI primarily reflected decreases in personal current transfer receipts (notably, government social benefits) and proprietors' income that were partly offset by increases in compensation and personal dividend income.

- Within government social benefits, unemployment insurance and "other" social benefits decreased, primarily reflecting declines in Pandemic Unemployment Compensation payments and Lost Wages Assistance, two programs that provide assistance to individuals impacted by the pandemic.

- Within proprietors' income, a decrease in nonfarm proprietors' income was partly offset by an increase in farm proprietors' income. For nonfarm, the decrease primarily reflected a decline in Paycheck Protection Program loans. For farm proprietors' income, the increase primarily reflected an increase in payments under the Coronavirus Food Assistance Program related to supporting farmers and ranchers impacted by COVID-19.

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

- The increase in personal dividend income was based primarily on company financial data for the fourth quarter.

The personal saving rate was 13.4 percent in the fourth quarter, compared with 16.0 percent in the third. 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 CARES Act and the Coronavirus Response and Relief Supplemental Appropriations 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 fourth quarter, expanded Unemployment Insurance Program benefits boosted the level of government social benefits, and the portion of forgivable loans to businesses and nonprofits provided through the Paycheck Protection Program raised government subsidies and social benefit payments, but both programs were at lower levels than in the second and third quarters. 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.

GDP for 2020

Real GDP decreased 3.5 percent in 2020 (from the 2019 annual level to the 2020 annual level), compared with an increase of 2.2 percent in 2019.

The decrease in real GDP in 2020 reflected decreases in PCE, exports, private inventory investment, nonresidential fixed investment, and state and local government that were partly offset by increases in federal government spending and residential fixed investment. Imports decreased.

More Information

The complete set of statistics for the fourth 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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