

# Technical Note

## Gross Domestic Product First Quarter of 2020 (Advance Estimate) April 29, 2020

This technical note provides background information about the source data and estimating methods used to produce the estimates presented in the GDP news release. The complete set of estimates for the first quarter is available on BEA's Web site at [www.bea.gov](http://www.bea.gov); a brief summary of "highlights" is also posted on the Web site. In a few weeks, the *Survey of Current Business*, BEA's online monthly journal, will publish a more detailed analysis of the estimates ("GDP and the Economy").

### Coronavirus (COVID-19) Impact on First-Quarter 2020 GDP

Real GDP decreased 4.8 percent (annual rate) in the first quarter of 2020, following a 2.1 percent increase in the fourth quarter of 2019. The decline in first quarter GDP was, in part, due to the response to the spread of COVID-19, as governments issued "stay-at-home" orders in March. This led to rapid changes in demand, as businesses and schools switched to remote work or canceled operations, and consumers canceled, restricted, or redirected their spending. The full economic effects of the COVID-19 pandemic cannot be quantified in the GDP estimate for the first 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 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. BEA used information on data collection disruptions and reliability assessments from its major source data providers, notably the Census Bureau and the Bureau of Labor Statistics, to identify where routine GDP estimation methods and sources did not sufficiently capture the changes in economic activity that occurred at the end of the quarter. 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 Web site.

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 credit card transactions data to capture rapid shifts in consumer spending, unemployment claims data to identify late-period declines in business production and compensation, and information on the timing of state-mandated school closures that impacted government spending.

## Real GDP and Related Aggregates

Real GDP decreased 4.8 percent (annual rate) in the first quarter of 2020, following a 2.1 percent increase in the fourth quarter of 2019. The decrease in first quarter real GDP reflected decreases in consumer spending, nonresidential fixed investment, exports, and private inventory investment that were partly offset by increases in residential fixed investment and government spending. Imports, which are a subtraction in the calculation of GDP, decreased.

- The decrease in consumer spending reflected declines in both goods and services. Within goods, a decrease in durable goods was partly offset by an increase in nondurable goods. Within services, household consumption of health care, foods services and accommodations, recreation services, and transportation services were the leading contributors to the decrease.
  - For durable goods, the largest contributor to the decrease was new motor vehicles, based primarily on three months of unit sales data from Ward’s Automotive Reports.
  - For nondurable goods, increases in food and “other” nondurable goods, notably prescription drugs, were partly offset by a decrease in clothing and footwear. Estimates of food as well as clothing and footwear primarily reflected Census Bureau Monthly Retail Trade Survey (MRTS) data, and the estimates of prescription drugs primarily reflected Intercontinental Marketing Services Health data on prescription drug sales.
  - For health care, hospital and outpatient services decreased, based primarily on employment, hours, and earnings data from the Bureau of Labor Statistics (BLS) Current Employment Statistics report as well as credit card transactions data.
  - The decrease in food services and accommodations was accounted for by declines in purchased meals and beverages, based on Census MRTS data, and in hotels and motels, based on Smith Travel Research data.
  - For recreation services, the largest contributors to the decrease were membership clubs, sports centers, parks, theaters and museums, based on credit card transactions data, and gambling, based on data from state gaming control commissions.
  - For transportation services, the largest contributor to the decrease was air transportation, based on data from the Department of Transportation and the Transportation Security Administration.
- The decrease in nonresidential fixed investment reflected decreases in equipment and structures that were partly offset by an increase in intellectual property products.
  - Within equipment, the leading contributors to the decline were information processing equipment, based primarily on Census manufacturers’ shipments and trade in goods data, and transportation equipment, based on Ward’s Automotive Report data.
  - For structures, the decline was based primarily on two months of Census Value of Construction Put in Place (VPIP) data and an adjustment to BEA’s standard projection for construction activity in March.
- Within exports, both goods and services declined in the first quarter. Within goods, declines in both capital and consumer goods were partly offset by increases in industrial supplies and materials as well as foods, feeds, and beverages, based primarily on Census U.S. International Trade in Goods and Services and Census Advance Economic Indicators Report data. Within

services, the largest contributor was travel, based primarily on data on international travelers from U.S. Customs and Border Protection.

- The decrease in private inventory investment primarily reflected decreases in wholesale trade and manufacturing that were partly offset by an increase in retail trade, based primarily on Census inventory data.
- Within imports, the decline was widespread across the goods and services categories; the largest contributors were travel services as well as capital and consumer goods, based on data on U.S. travelers overseas from the Department of Homeland Security and Census U.S. International Trade in Goods and Services as well as the Census Advance Economic Indicators Report, respectively.
- Within residential fixed investment, the largest contributor to the increase was single family structures, reflecting January and February Census VPIP data and a BEA assumption for March based on housing starts.

Government spending increased in the first quarter, primarily reflecting an increase in nondefense federal spending. For state and local government spending, an increase in investment in structures was mostly offset by a decrease in consumption expenditures. Within consumption expenditures, the largest contributor to the decrease was compensation. Real compensation of employees was adjusted to account for disruptions in state and local education services resulting from the large number of school closures that occurred in March. For more information, see [“How does BEA measure public education services during the closings of schools and college campuses in response to the COVID-19 pandemic?”](#)

## Prices

The price index for gross domestic purchases increased 1.6 percent in the first quarter, compared with a 1.4 percent increase in the fourth. Excluding food and energy, gross domestic purchases prices increased 1.9 percent, after increasing 1.3 percent.

The price index for personal consumption expenditures (PCE) increased 1.3 percent in the first quarter, after increasing 1.4 percent in the fourth. Excluding food and energy, the PCE price index increased 1.8 percent, after increasing 1.3 percent. The acceleration in the PCE price index excluding food and energy was led by an upturn in prices for clothing and footwear and an acceleration in financial services prices.

## Disposable Personal Income

Real disposable personal income increased 0.5 percent in the first quarter, following a 1.6 percent increase in the fourth. The increase in DPI was widespread; the largest contributor was government social benefit payments.

- Within government social benefits, social security and unemployment insurance benefits increased. The increase in social security largely reflected a cost of living increase that took effect in January. The first-quarter increase in unemployment program benefits was based primarily on unemployment insurance (UI) claims data from the Department of Labor’s Employment and Training Administration, as claims posted record-high levels in late March.

- Within wages and salaries, an increase in government wages was partly offset by a decrease in private wages. The estimates were primarily based on data from the BLS monthly Current Employment Statistics report and additional information from the UI claims data for the latter half of March. For more information, see [“How did BEA adjust March 2020 wages and salaries to account for the effects of COVID-19?”](#).

Personal outlays decreased in the first quarter, reflecting decreases in consumer spending and personal interest payments. The decrease in personal interest payments partly reflected a decline in interest paid on federally held student loans, as a provision from the Coronavirus Aid, Relief, and Economic Security (CARES) Act provided for a suspension of interest accrual and payments due for a six-month period beginning on March 13, 2020. For more information, see [“How does the 2020 CARES Act affect BEA’s estimates of personal interest payments?”](#).

The personal saving rate was 9.6 percent in the first quarter, compared with 7.6 percent in the fourth.

### **Federal Government Economic Response to the COVID-19 Pandemic**

In March and April, four major legislative acts, including the CARES 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 may be intermingled with other spending in the source data, BEA does not expect to be able to separately identify the total quarterly or annual effect of the acts on GDP growth. However, given the timing of the passage of the legislation, any impacts on first-quarter GDP growth were small.

BEA is actively tracking specific programs and provisions of the pandemic response legislation to accurately classify the various programs in the national income and product accounts (NIPAs), including provisions associated with the [Paycheck Protection Program](#) and the [Economic Impact Payments](#). For more details, see [“COVID-19 Pandemic: Federal Recovery Legislation and the NIPAs”](#) on BEA’s Web site.

### **Looking Ahead: 2020 Annual Update Scheduled for July 30th**

BEA will release results from the 2020 annual update of the NIPAs on July 30, 2020, in conjunction with the advance estimate of GDP for the second quarter of 2020. For estimates of real GDP and its major components, the span of the update will cover the most recent five years (2015-2019) and the first quarter of 2020. Estimates of income and saving will be subject to revision from 1999 through the first quarter of 2020. More information on the 2020 annual update will be included in the forthcoming May *Survey of Current Business* article, “GDP and the Economy.”

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