Technical Note

Gross Domestic Product, First Quarter 2023 (Advance Estimate)

April 27, 2023

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 summary of "highlights" is available on BEA's website at www.bea.gov.

Real GDP and Related Aggregates

Real GDP increased at an annual rate of 1.1 percent (0.3 percent at a quarterly rate[1]) in the first quarter of 2023, compared with an increase of 2.6 percent (0.6 percent at a quarterly rate) in the fourth quarter of 2022. The increase in real GDP reflected increases in consumer spending, exports, federal government spending, state and local government spending, and nonresidential fixed investment that were partly offset by decreases in private inventory investment and residential fixed investment. Imports, which are a subtraction in the calculation of GDP, increased.

- The increase in consumer spending reflected increases in both goods and services. Within goods, the increase was led by motor vehicles and parts. Within services, the leading contributors to the increase were health care and food services and accommodations. Spending on food services as well as most categories of goods reflect updated Census Bureau Monthly Retail Trade Survey (MRTS) data that were recently benchmarked to results from the most recent annual survey.
    - The increase in motor vehicles and parts was led by increases in new light trucks and net purchases of used light trucks. For new light trucks, the estimates were based primarily on unit sales data from Wards Intelligence as well as vehicle registrations data from IHS Markit Polk for January and February and a projection for March. For used light trucks, the estimates primarily reflected Census MRTS data.
    - Within health care, the increase reflected increases in both outpatient services (notably paramedical services) and hospital and nursing home services (notably hospital services), based primarily on Bureau of Labor Statistics (BLS) Current Employment Statistics (CES) employment, earnings, and hours data.

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

    - Within food services and accommodations, the increase was more than accounted for by food services based on Census Bureau MRTS data.

- Estimates of exports and imports primarily reflected Census-BEA U.S. International Trade in Goods and Services data as well as the Census Advance Economic Indicators Report for March.

    - Within exports, an increase in goods was partly offset by a decrease in services. The leading contributor to the increase in goods was consumer goods, except food and automotive. Within services, the decrease was led by transport services.

    - Within imports, the increase was in goods, led by durable consumer goods and automotive vehicles, engines, and parts.

- The increase in federal government spending reflected increases in both nondefense and defense spending.

    - The increase in nondefense spending primarily reflected lower sales of crude oil from the Strategic Petroleum Reserve, based on data from the Department of Energy. Within the National Economic Accounts, sales are deducted from government consumption expenditures; therefore, a decrease in sales results in a corresponding increase in consumption expenditures. Because the oil sold by the government enters private inventories, there is no direct net effect on GDP.

    - The increase in defense spending was led by spending on services, based primarily on Monthly Treasury Statement data.

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

- Within nonresidential fixed investment, increases in structures and intellectual property products were partly offset by a decrease in equipment.

    - The increase in structures was led by manufacturing structures, based primarily on Census Bureau Value-Put-In-Place (VPIP) construction spending data.

    - The increase in intellectual property products was led by research and development, primarily reflecting BLS employment data.

    - Within equipment, the leading contributor to the decrease was transportation equipment, specifically aircraft, primarily reflecting Census shipments and trade data.

- The decrease in private inventory investment was led by decreases in wholesale trade (notably, machinery, equipment, and supplies) and manufacturing (led by other transportation equipment as well as petroleum and coal products), based primarily on Census inventory book value data.

- Within residential fixed investment, the decrease primarily reflected a decline in new single-family construction, based on Census Bureau VPIP construction spending data for January and February. This decline was partly offset by an increase in brokers' commissions and other ownership transfer costs, primarily reflecting existing home sales data from the National Association of Realtors for all three months of the quarter.

Compared to the fourth quarter, the deceleration in real GDP in the first quarter primarily reflected a downturn in private inventory investment and a slowdown in nonresidential fixed investment. These movements were partly offset by an acceleration in consumer spending, an upturn in exports, and a smaller decrease in residential fixed investment. Imports turned up.

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 2.9 percent in the first quarter; this measure was unchanged in the fourth quarter compared to the third quarter.

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; manufacturing, wholesale, and retail trade inventories; exports and imports of goods; federal government outlays; and consumer, producer, and international prices. For series for which monthly and quarterly data were incomplete or unavailable, BEA's assumptions are informed by a variety of sources, most notably private high-frequency payment card transactions data as well as volume data, such as health care patient visits and traveler throughput from industry and trade associations. 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.

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 an increase of 3.6 percent in the fourth quarter. Excluding food and energy, gross domestic purchases prices increased 4.3 percent, after increasing 4.1 percent.

The price index for personal consumption expenditures (PCE) increased 4.2 percent in the first quarter, after increasing 3.7 percent in the fourth quarter. Excluding food and energy, the "core" PCE price index increased 4.9 percent, after increasing 4.4 percent. The first-quarter increase in core PCE prices reflected increases in both goods and services, led by increases in the prices for housing, food services and accommodations, financial services and insurance, and "other" nondurable goods (notably, prescription drugs). Prices were based primarily on BLS consumer and producer price indexes. For a comparison of PCE prices to BLS consumer price indexes, refer to NIPA Table 9.1U. Reconciliation of Percent Change in the CPI with Percent Change in the PCE Price Index.

Disposable Personal Income

Real disposable personal income (DPI) increased 8.0 percent in the first quarter, compared with an increase of 5.0 percent in the fourth quarter. Current-dollar DPI increased 12.5 percent in the first quarter, after increasing 8.9 percent in the fourth quarter.

The increase in first-quarter current-dollar DPI primarily reflected an increase in personal income and a decrease in personal current taxes.

- Within personal income, the leading contributors to the increase were compensation and government social benefits. Within compensation, both private and government wages and salaries increased, based primarily on BLS CES data. Within government social benefits, an increase in Social Security payments was partly offset by a decrease in “other” benefits.

    - The increase in Social Security primarily reflected an 8.7 percent cost-of-living adjustment that took effect in January.

    - The decrease in “other” benefits primarily reflected the expiration of the extended child tax credit (as authorized by the American Rescue Plan) as well as a decline in one-time refundable tax credits issued by states.

- The decrease in personal current taxes reflected declines in payments to both federal as well as state and local governments. For federal, the estimates were based on projections from the Treasury Department’s Office of Tax Analysis as well as collections data from the Monthly Treasury Statement. For state and local taxes, the estimates primarily reflected state collections data.

The personal saving rate was 4.8 percent in the first quarter, compared with 4.0 percent in the fourth quarter.

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 journal, will present a more detailed analysis of the estimates ("GDP and the Economy").

David B. Wasshausen
Associate Director, National Economic Accounts
Bureau of Economic Analysis
(301) 278-9752