

Technical Note

Gross Domestic Product, Fourth Quarter and Year 2022 (Second Estimate)

February 23, 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.

Economic Conditions and Fourth-Quarter 2022 GDP

Real GDP increased at an annual rate of 2.7 percent (0.7 percent at a quarterly rate¹) in the fourth quarter of 2022, compared with an increase of 3.2 percent (0.8 percent at a quarterly rate) in the third quarter. The increase occurred amid moderating inflation, low unemployment, continued supply-chain uncertainties, and rising interest rates. The economic effects of these conditions cannot be quantified in the GDP estimate for the fourth quarter of 2022 because the impacts are generally embedded in source data and cannot be separately identified.

Real GDP decelerated in the fourth quarter, compared to the third quarter. The deceleration primarily reflected a downturn in exports and decelerations in consumer spending, nonresidential fixed investment, and state and local government spending. These movements were partly offset by an upturn in private inventory investment, a smaller decrease in residential fixed investment, and an acceleration in federal government spending. Imports, which are a subtraction in the calculation of GDP, decreased less in the fourth quarter than in the third quarter.

The increase in real GDP for the fourth quarter reflected increases in private inventory investment, consumer spending, nonresidential fixed investment, federal government spending, and state and local government spending that were partly offset by decreases in residential fixed investment and exports. Imports decreased.

Sources of Revision to Real GDP

The increase in fourth-quarter real GDP was revised down 0.2 percentage point from the "advance" estimate. The updated estimates reflected downward revisions to consumer spending and exports that were partly offset by upward revisions to nonresidential fixed investment and residential fixed investment. Imports were revised up.

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?](#)

- The revision to consumer spending reflected downward revisions to spending on both goods and services.
 - Within goods, the leading contributors to the downward revision were motor vehicles and parts (mainly used light trucks), based primarily on updated used motor vehicle prices from the Bureau of Labor Statistics (BLS); food and beverages, based primarily on revised Census Bureau Monthly Retail Trade Survey (MRTS) data; and "other" nondurable goods (mainly tobacco and household supplies), reflecting new Nielsen Company tobacco data and revised MRTS.
 - Within services, downward revisions to outpatient health care (notably, physician services), communication services (notably, cellular telephone services), and transportation services (notably, motor vehicle rental) were the leading contributors. The updated estimates primarily reflected new fourth-quarter Census Quarterly Services Survey (QSS) data as well as updated company revenue data for motor vehicle rental companies.
- For both exports and imports, the revised estimates primarily reflected updated data from BEA's International Transactions Accounts as well as new and revised Census trade in goods data for December.
 - Within exports, the downward revision was to goods and mainly reflected a downward revision to "other" goods that was partly offset by an upward revision to consumer goods.
 - Within imports, the upward revision primarily reflected a revision to services (notably, transport services).
- Within nonresidential fixed investment, the revised estimates primarily reflected upward revisions to structures and intellectual property products.
 - For structures, the upward revision was led by commercial and health care structures, based primarily on new and revised Census Value of Construction Put in Place (VPIP) data.
 - All categories of intellectual property products were revised up. For software and entertainment originals, the revision was based on new Census QSS data. For research and development, the revision was based on R&D expenses reported on publicly traded companies' financial statements.
- The upward revision to residential fixed investment was led by multi-family structures, based on new and revised Census VPIP data.
- Within private inventory investment, an upward revision to farm inventories (based primarily on new Department of Agriculture data) was mostly offset by a downward revision to nonfarm inventories (based on updated and new Census inventory data).

Prices

BEA's featured measure of inflation in the U.S. economy, the price index for gross domestic purchases, increased 3.6 percent in the fourth quarter, an upward revision of 0.4 percentage point from the advance estimate. Excluding food and energy, gross domestic purchases prices increased 4.1 percent, an upward revision of 0.3 percentage point.

The price index for personal consumption expenditures (PCE) increased 3.7 percent in the fourth quarter, revised up 0.5 percentage point from the advance estimate. Excluding food and energy, the “core” PCE price index increased 4.3 percent, an upward revision of 0.4 percentage point. The leading contributors to the upward revision were prices for both goods (led by used and new motor vehicles) and services (led by nonprofit hospital expenses). The updated price estimates primarily reflect revised BLS consumer and producer price data, as well as new BLS employment cost data. 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](#).

GDP for 2022

Real GDP increased 2.1 percent in 2022 (from the 2021 annual level to the 2022 annual level), compared with an increase of 5.9 percent in 2021. The increase in real GDP in 2022 primarily reflected increases in consumer spending, exports, private inventory investment, and nonresidential fixed investment that were partly offset by decreases in residential fixed investment and federal government spending. Imports increased.

Measured from the fourth quarter of 2021 to the fourth quarter of 2022, real GDP increased 0.9 percent during the period, compared with an increase of 5.7 percent from the fourth quarter of 2020 to the fourth quarter of 2021.

Updates to Third-Quarter Wages and Salaries

In addition to presenting updated estimates for the fourth quarter, today's release presents revised estimates of third-quarter wages and salaries, personal taxes, and contributions for government social insurance, based on updated data from the Bureau of Labor Statistics Quarterly Census of Employment and Wages program. Wages and salaries are now estimated to have increased \$303.0 billion in the third quarter, an upward revision of \$115.2 billion.

Real gross domestic income is now estimated to have increased 2.8 percent in the third quarter, an upward revision of 2.0 percentage points from the previously published estimate. The average of real GDP and real GDI increased 3.0 percent, an upward revision of 1.0 percentage point. The personal saving rate—personal saving as a percentage of disposable personal income—was 3.2 percent in the third quarter, an upward revision of 0.5 percentage point.

More Information

The complete set of statistics for the fourth quarter is available on [BEA's website](#), along with a table presenting the "[Key Source Data and Assumptions](#)" that underlie the statistics. 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").

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