

2022 Annual Update of the National Economic Accounts

Summary of Results

Released September 29, 2022

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This year for the first time, BEA will produce and publish in tandem annual updates of national, industry, and state statistics. On September 29, BEA will release updated estimates of the National Economic Accounts (NEAs), which consist of the National Income and Product Accounts (NIPAs), including quarterly and annual data for gross domestic product (GDP), gross domestic income (GDI), corporate profits, and price indexes, and the Industry Economic Accounts (IEAs), including GDP by industry and gross output. On September 30, BEA will release monthly data for the NIPAs, including personal income, consumer spending, saving, and price indexes, as well as statistics for all 50 states and the District of Columbia, including GDP and personal income.

This year's update incorporates newly available and more comprehensive source data and improved estimation methodologies for the first quarter of 2017 through the first quarter of 2022, with revisions to GDP, GDI, and their components. The reference year remains 2012. This report summarizes the results for quarterly and annual data in the NIPAs and IEAs through the fourth quarter of 2021. Updated estimates for the first quarter of 2022 will be discussed in the news release for the "third" estimate of GDP for the second quarter of 2022 scheduled for release on September 29.

Availability of Data and Detailed Results

On September 29, most NIPA and IEA tables will be available through [BEA's Interactive Data application](#) on the BEA website. Refer to [Information on Updates to the National Economic Accounts](#) for the complete table release schedule as well as a table showing the major current-dollar revisions and their sources for each component of GDP, national income, and personal income. Additionally, the November 2022 [Survey of Current Business](#) will contain an article describing the update in more detail.

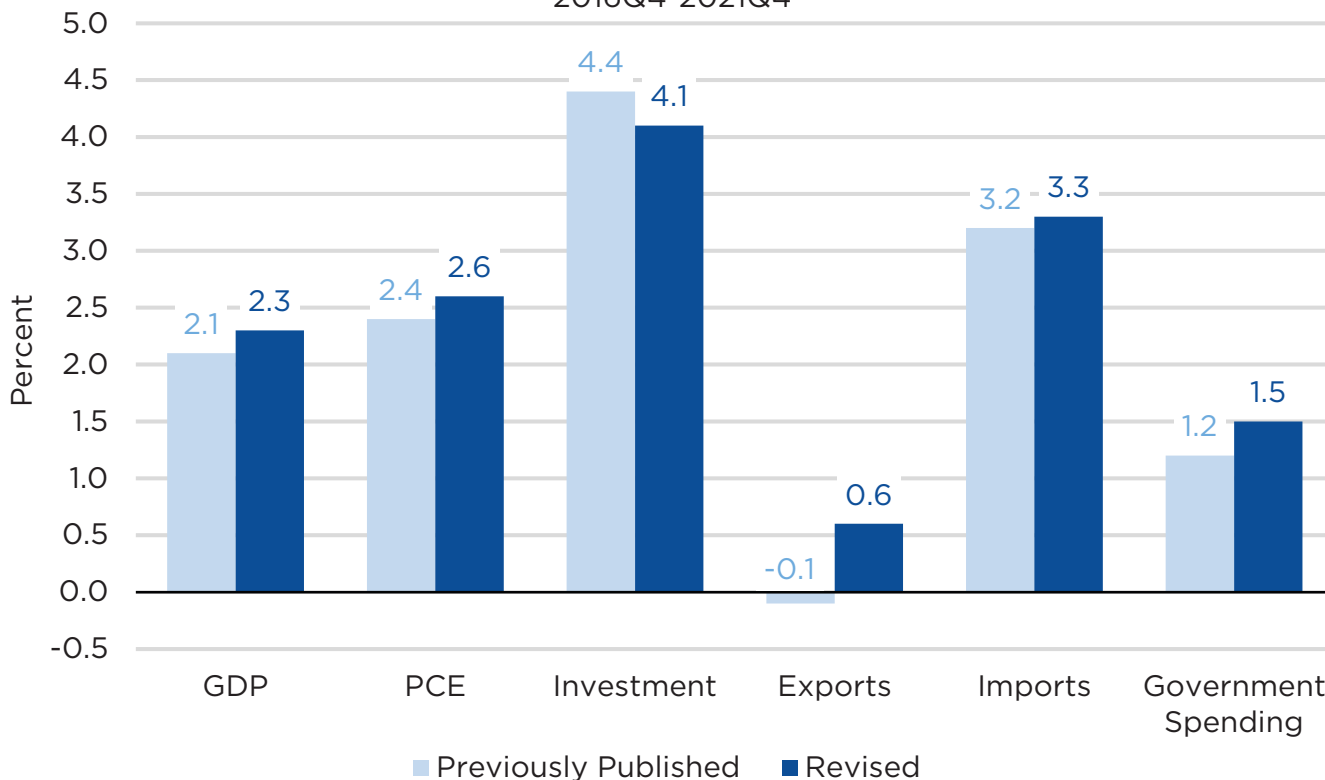
Previously published estimates, which are superseded by the September 29 release, can be found in [BEA's data archives](#).

Real GDP

The picture of the economy presented in the updated estimates is little changed from the previously published estimates (Chart 1).

- From 2016 to 2021, real GDP increased at an average annual rate of 2.1 percent; in the previously published estimates, real GDP increased at an average annual rate of 1.9 percent (Table A1). When measured from the fourth quarter of 2016 to the fourth quarter of 2021, real GDP increased at an average annual rate of 2.3 percent, revised up 0.2 percentage point from the previously published estimates (Table A2).

Chart 1. Average Annual Rates of Change for Real GDP,
2016Q4-2021Q4



- The percent change in real GDP was revised up for 2020 and 2021, was revised down for 2017, and was unrevised for 2018 and 2019 (Table 1).
 - » For 2017, the increase in real GDP was revised down 0.1 percentage point, from 2.3 percent to 2.2 percent. The revision primarily reflected a downward revision to personal consumption expenditures (PCE) that was partly offset by an upward revision to exports (Table 2).
 - » For 2018, the increase in real GDP was unrevised at 2.9 percent, primarily reflecting an upward revision to state and local government spending that was partly offset by an upward revision to imports (a subtraction in the calculation of GDP).

- » For 2019, the increase in real GDP was unrevised at 2.3. percent, reflecting upward revisions to state and local government spending and exports that were offset by downward revisions to PCE and nonresidential fixed investment.
- » For 2020, the decrease in real GDP was revised up 0.6 percentage point, from a decrease of 3.4 percent to a decrease of 2.8 percent, primarily reflecting upward revisions to PCE, federal government spending, and nonresidential fixed investment that were partly offset by a downward revision to state and local government spending.
- » For 2021, the percent change in real GDP was revised up 0.2 percentage point, from 5.7 percent to 5.9 percent, primarily reflecting upward revisions to PCE, exports, and federal government spending that were partly offset by a downward revision to nonresidential fixed investment.
- From the first quarter of 2017 through the fourth quarter of 2021, the average revision (without regard to sign) in the percent change in real GDP was 0.5 percentage point. The revisions did not change the direction of the change in real GDP (increase or decrease) for any of these quarters.
- Notable revisions to current-dollar GDP include an upward revision of \$166.7 billion, or 0.8 percent, to a level of \$21.06 trillion for 2020 and an upward revision of \$319.0 billion, or 1.4 percent, to a level of \$23.32 trillion for 2021 (Table 3A). Revisions for 2017 through 2019 were less than 0.1 percentage point.

Gross Domestic Income (GDI) and the Statistical Discrepancy

- From 2016 to 2021, real GDI increased at an average annual rate of 2.1 percent; in the previously published estimates, real GDI increased at an average annual rate of 2.3 percent (Table A1). From the fourth quarter of 2016 to the fourth quarter of 2021, real GDI increased at an average annual rate of 2.4 percent; in the previously published estimates, real GDI increased at an average annual rate of 2.6 percent (Table A2).
- The statistical discrepancy as a percentage of GDP was unrevised at -0.6 percent for 2017; was unrevised at -0.6 percent for 2018; was revised from -0.3 percent to -0.5 percent for 2019; was revised from -0.8 percent to -1.0 percent for 2020; and was revised from -2.3 percent to -0.6 percent for 2021 (Table 7).
- The average of GDP and GDI is a supplemental measure of U.S. economic activity that equally weights GDP and GDI. In real terms, this measure increased at an average annual rate of 2.1 percent from 2016 to 2021, unrevised from the previously published estimates (Table A1).

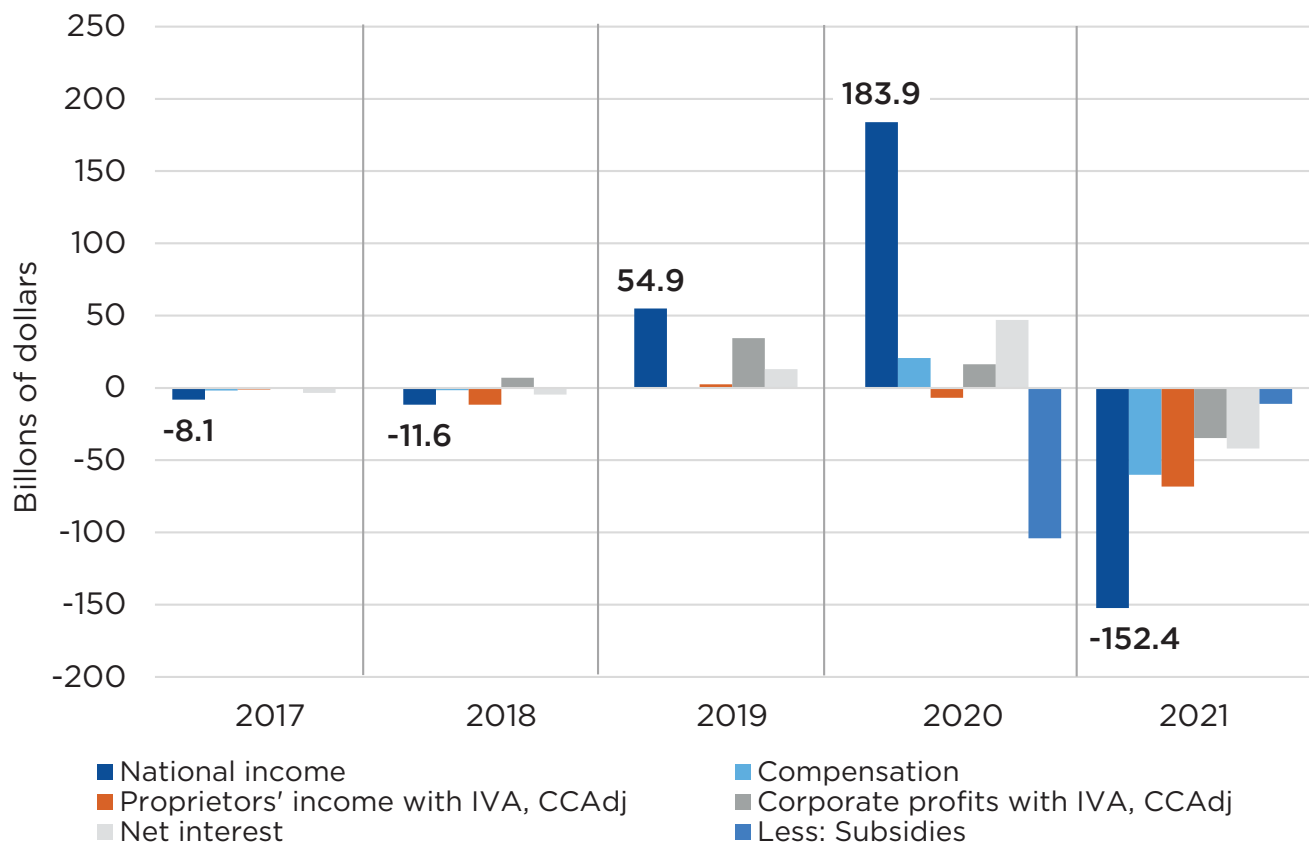
Price Measures

- From the fourth quarter of 2016 to the fourth quarter of 2021, the average annual rate of increase in the price index for gross domestic purchases was 2.6 percent, revised up 0.1 percentage point from the previously published estimates (Table B2).
- From the fourth quarter of 2016 to the fourth quarter of 2021, the average annual rate of increase in the price index for PCE was 2.4 percent, the same as previously published. The increase in the “core” PCE price index, which excludes food and energy, was 2.3 percent, also the same as previously published (Table B2).

Income and Saving Measures

- National income was revised down \$8.1 billion, or less than 0.1 percent, for 2017; was revised down \$11.6 billion, or 0.1 percent, for 2018; was revised up \$54.9 billion, or 0.3 percent, for 2019; was revised up \$183.9 billion, or 1.0 percent, for 2020; and was revised down \$152.4 billion, or 0.8 percent, for 2021 (Table 7).

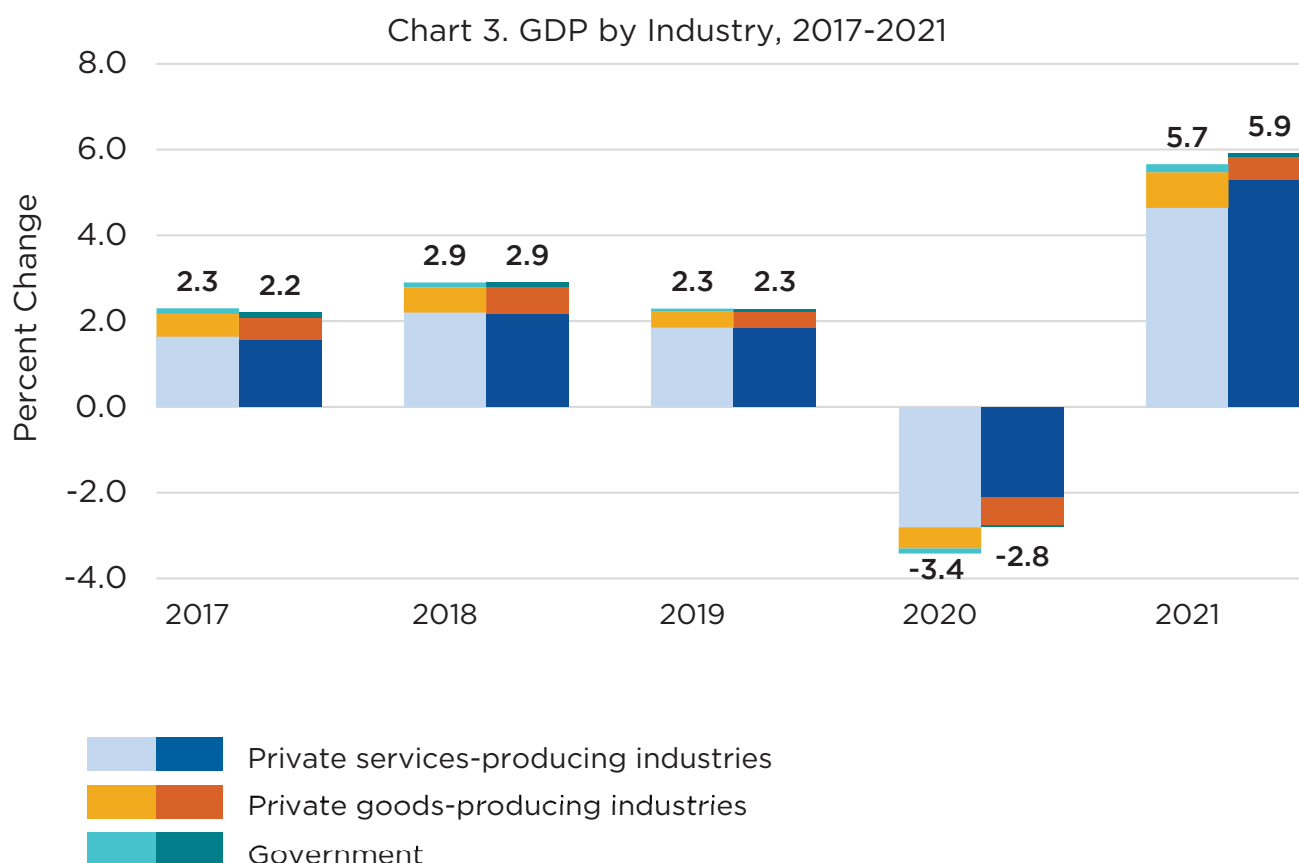
Chart 2. National Income, Revision in Levels
2017-2021



- » For 2017, the revision primarily reflected downward revisions to net interest and rental income of persons.
 - » For 2018, the revision primarily reflected downward revisions to proprietors' income and net interest that were partly offset by an upward revision to corporate profits.
 - » For 2019, the revision primarily reflected upward revisions to corporate profits and net interest.
 - » For 2020, the revision primarily reflected upward revisions to net interest and compensation and a downward revision to subsidies (a subtraction in the calculation of national income).
 - » For 2021, the revision primarily reflected downward revisions to proprietors' income, compensation, net interest, and corporate profits that were partly offset by an upward revision to taxes on production and imports.
- Corporate profits was revised down \$0.3 billion, or less than 0.1 percent, for 2017, was revised up \$7.0 billion, or 0.3 percent, for 2018, was revised up \$34.4 billion, or 1.5 percent, for 2019, was revised up \$16.3 billion, or 0.7 percent, for 2020, and was revised down \$34.7 billion, or 1.2 percent, for 2021 (Table 9A).
 - Personal income was revised down \$10.4 billion, or 0.1 percent, for 2017; was revised down \$22.2 billion, or 0.1 percent, for 2018; was revised up \$162.6 billion, or 0.9 percent, for 2019; was revised up \$204.7 billion, or 1.0 percent, for 2020; and was revised up \$202.1 billion, or 1.0 percent, for 2021 (Table 8).
 - From 2016 to 2021, the average annual rate of growth of real disposable personal income was 3.5 percent, revised up 0.1 percentage point from the previously published estimates (Table A1).
 - The personal saving rate (personal saving as a percentage of disposable personal income) was unrevised at 7.3 percent for 2017, was unrevised at 7.6 percent for 2018, was revised up from 7.6 percent to 8.8 percent for 2019, was revised up from 16.6 percent to 17.0 percent for 2020, and was revised down from 12.3 percent to 12.0 percent for 2021 (Table 8).

GDP by Industry

GDP by industry, or value added, is a measure of an industry's contribution to GDP. As with the estimates of GDP by expenditure, GDP by industry is little changed from the previously published estimates.



- For 2017, the increase in real GDP was revised down 0.1 percentage point, from 2.3 percent to 2.2 percent reflecting a downward revision to private services-producing industries. The direction of change was unrevised for all 22 major industry groups (Table 12).
- For 2018, the increase in real GDP was unrevised at 2.9 percent. Upward revisions to private goods-producing industries and to government were partly offset by a downward revision to private services-producing industries. The direction of change was unrevised for all 22 major industry groups.
- For 2019, the increase in real GDP was unrevised at 2.3 percent. The direction of change was unrevised for all 22 major industry groups.
- For 2020, the decrease in real GDP was revised up 0.6 percentage point, from a decrease of 3.4 percent to a decrease of 2.8 percent. Upward revisions to private services-producing industries and to government were partly offset by a downward revision to private goods-producing industries. The direction of change was unrevised for all 22 major industry groups.

- » Private services-producing industries was revised up 1.0 percentage point from a decrease of 4.0 percent to a decrease of 3.0 percent. The upward revision to private services-producing industries was led by health care and social assistance; professional, scientific, and technical services; wholesale trade; and accommodation and food services. These upward revisions were partly offset by a downward revision to real estate and rental and leasing.
- » Government was revised up 0.5 percentage point from a decrease of 0.9 to a decrease of 0.4 percent; both state and local and federal government estimates were revised up.
- » Private goods-producing industries was revised down 0.9 percentage point from -2.9 to -3.8 percent. The downward revision to private goods-producing industries was led by nondurable goods manufacturing (mainly petroleum and coal products) and by agriculture, forestry, and fishing. These downward revisions were partly offset by an upward revision to mining.
- For 2021, the percent change in real GDP was revised up 0.2 percentage point, from 5.7 percent to 5.9 percent. An upward revision to private services-producing industries was partly offset by downward revisions to private goods-producing industries and to government. The direction of change was unrevised for all 22 major industry groups.
 - » Private services-producing industries was revised up 1.0 percentage point from 6.6 percent to 7.6 percent. The leading contributors to the upward revisions were wholesale trade; accommodation and food services; professional, scientific, and technical services; arts, entertainment, and recreation; and transportation and warehousing. These upward revisions were partly offset by downward revisions to finance and insurance (mainly Federal Reserve banks, credit intermediation, and related activities); health care and social assistance; and administrative and waste management services.
 - » Private goods-producing industries was revised down 2.0 percentage points from 5.1 percent to 3.1 percent. The downward revision was led by mining (mainly oil and gas extraction) and nondurable goods manufacturing (mainly petroleum and coal products).
 - » Government was revised down 1.0 percentage point from 1.5 to 0.5 percent, led by downward revisions to state and local government (both general government and government enterprises).

Gross Output by Industry

Gross output is principally a measure of an industry's sales or receipts, which includes sales to final users in the economy (GDP) and sales to other industries (intermediate inputs). The percent change in real gross output was revised down 0.1 percentage point to 2.1 percent in 2017; up 0.1 percentage point to 2.8 percent in 2018; up 0.2 percentage point to 1.9 percent in 2019; down 0.1 percentage point to a decrease of 3.6 percent in 2020; and down 0.2 percentage point to 6.2 percent in 2021 (Table 16).

Changes in Methodology and Presentation

The annual update incorporated improvements to estimating methodologies and to the presentation of the estimates, including the following:

- BEA improved the supply-use framework to reflect transactions related to ventilator production by auto manufacturers and ventilator purchases by the government in 2020 in response to the COVID–19 pandemic. This change resulted in a modification of the composition of gross output for the motor vehicle industry and the composition of government investment in the second and third quarters of 2020 to account for the production and purchase of these ventilators.
- The classification of subsidies introduced as part of the response to the COVID–19 pandemic is improved by distinguishing between “subsidies on products” and “other subsidies on production”; select column and row labels in the supply-use tables have been updated accordingly. This change better aligns BEA’s supply-use tables with international standards and primarily affects gross output valued at basic prices in the supply table and value added at basic prices in the use table.
- BEA improved the deflator used for consumer spending and for private fixed investment for used auto and used light truck margin estimates. The consumer price index (CPI) for used autos and used light trucks replaced the previously used margin producer price index for used vehicles sold at new car dealers.
- As with every annual update, the revised estimates incorporate updated quarterly and monthly seasonal factors that capture changes in seasonal patterns that emerge over time. The updated seasonal factors reflect a mix of data that are seasonally adjusted by source agencies as well as data directly adjusted by BEA.

New and Revised Source Data

The annual update incorporated data from the following major federal statistical sources:

| Summary of Major Source Data Incorporated | | |
|---|--|--|
| Agency | Data | Years covered and vintage |
| Census Bureau | Annual Capital Expenditures Survey | 2019 (revised) 2020 (new) |
| | Annual Wholesale Trade Survey | 2017–2020 (revised) 2020 (new) |
| | Annual Retail Trade Survey | 2017–2019 (revised) 2020 (new) |
| | Annual Survey of Manufactures | 2020 (new) |
| | Monthly indicators of manufactures, merchant wholesale trade, and retail trade | 2017–2021 (revised) |
| | Service Annual Survey | 2017–2019 (revised) 2020 (new) |
| | Annual Survey of State and Local Government Finances | Fiscal years 2017–2019 (revised) Fiscal year 2020 (new) |
| | Monthly survey of construction spending (value put in place) | 2017–2021 (revised) |
| | Quarterly Services Survey | 2017–2021 (revised) |
| | Current Population Survey/Housing Vacancy Survey | 2017–2020 (revised) 2021 (new) |
| Office of Management and Budget | Federal budget | Fiscal year 2021 (revised) Fiscal year 2022 (new) |
| Internal Revenue Service | Tabulations of tax returns for corporations | 2019 (revised) 2020 (new) |
| | Tabulations of tax returns for sole proprietorships and for partnerships | 2020 (new) |
| Bureau of Labor Statistics | Quarterly Census of Employment and Wages | 2017–2021 (revised) |
| | Occupational Employment Statistics program | 2021 (new) |
| Department of Agriculture | Farm statistics | 2017–2021 (revised) |
| Bureau of Economic Analysis | International Transactions Accounts | 2017–2021 (revised) |

Additional Information

Resources

Additional resources available at www.bea.gov:

- The full economic effects of the COVID-19 pandemic cannot be quantified in these statistics because the impacts are generally embedded in source data and cannot be separately identified. For more Information about COVID-19 impacts, refer to [Federal Recovery Programs and BEA Statistics](#) on our website.
- Stay informed about BEA developments by reading the [BEA blog](#), signing up for [BEA's email subscription service](#), or following BEA on Twitter [@BEA_News](#).
- Historical time series for these estimates can be accessed in [BEA's interactive data application](#).
- Access BEA data by registering for [BEA's data application programming interface](#) (API).
- For more on BEA's statistics, refer to our monthly online journal, the [Survey of Current Business](#).
- BEA's [news release schedule](#)
- [NIPA Handbook](#): Concepts and Methods of the U.S. National Income and Product Accounts
- [Measuring the Nation's Economy, An Industry Perspective](#): A Primer on BEA's Industry Accounts

Definitions

- **Gross domestic product (GDP)**, or **value added**, is the value of the goods and services produced by the nation's economy less the value of the goods and services used up in production. GDP is also equal to the sum of personal consumption expenditures, gross private domestic investment, net exports of goods and services, and government consumption expenditures and gross investment.
- **Gross domestic income (GDI)** is the sum of incomes earned and costs incurred in the production of GDP. In national economic accounting, GDP and GDI are conceptually equal. In practice, GDP and GDI differ because they are constructed using largely independent source data.
- **Gross output** is the value of the goods and services produced by the nation's economy. It is principally measured using industry sales or receipts, including sales to final users (GDP) and sales to other industries (intermediate inputs).
- **Current-dollar estimates** are valued in the prices of the period when the transactions occurred—that is, at "market value." Also referred to as "nominal estimates" or as "current-price estimates."
- **Real values** are inflation-adjusted estimates—that is, estimates that exclude the effects of price changes.

- The **gross domestic purchases price index** measures the prices of final goods and services purchased by U.S. residents.
- The **personal consumption expenditure price index** measures the prices paid for the goods and services purchased by, or on the behalf of, "persons."
- **Personal income** is the income received by, or on behalf of, all persons from all sources: from participation as laborers in production, from owning a home or business, from the ownership of financial assets, and from government and business in the form of transfers. It includes income from domestic sources as well as the rest of world. It does not include realized or unrealized capital gains or losses.
- **Disposable personal income** is the income available to persons for spending or saving. It is equal to personal income less personal current taxes.
- **Personal outlays** is the sum of personal consumption expenditures, personal interest payments, and personal current transfer payments.
- **Personal saving** is personal income less personal outlays and personal current taxes.
- The **personal saving rate** is personal saving as a percentage of disposable personal income.
- **Profits from current production**, referred to as corporate profits with inventory valuation adjustment (IVA) and capital consumption (CCAdj) adjustment in the National Income and Product Accounts (NIPAs), is a measure of the net income of corporations before deducting income taxes that is consistent with the value of goods and services measured in GDP. The IVA and CCAdj are adjustments that convert inventory withdrawals and depreciation of fixed assets reported on a tax-return, historical-cost basis to the current-cost economic measures used in the national income and product accounts. Profits for domestic industries reflect profits for all corporations located within the geographic borders of the United States. The rest-of-the-world (ROW) component of profits is measured as the difference between profits received from ROW and profits paid to ROW.

For more definitions, refer to the [Glossary: National Income and Product Accounts](#).

Statistical conventions

Annual-vs-quarterly rates. Quarterly seasonally adjusted values are expressed at annual rates, unless otherwise specified. This convention is used for BEA's featured, seasonally adjusted measures to facilitate comparisons with related and historical data. For details, refer to the FAQ "[Why does BEA publish estimates at annual rates?](#)"

Quarterly not seasonally adjusted values are expressed only at quarterly rates.

Percent changes. Percent changes in quarterly seasonally adjusted series are displayed at annual rates, unless otherwise specified. For details, refer to the FAQ "[How is average annual growth calculated?](#)" and "[Why does BEA publish percent changes in quarterly series at annual rates?](#)" Percent changes in quarterly not seasonally adjusted values are calculated from the same quarter one year ago. All published percent changes are calculated from unrounded data.

Calendar years and quarters. Unless noted otherwise, annual and quarterly data are presented on a calendar basis.

Quantities and prices. *Quantities*, or "real" volume measures, and prices are expressed as index numbers with a specified reference year equal to 100 (currently 2012). Quantity and price indexes are calculated using a Fisher-chained weighted formula that incorporates weights from two adjacent periods (quarters for quarterly data and annuals for annual data). For details on the calculation of quantity and price indexes, refer to Chapter 4: Estimating Methods in the [NIPA Handbook](#).

Chained-dollar values are calculated by multiplying the quantity index by the current dollar value in the reference year (2012) and then dividing by 100. Percent changes calculated from real quantity indexes and chained-dollar levels are conceptually the same; any differences are due to rounding. Chained-dollar values are not additive because the relative weights for a given period differ from those of the reference year. In tables that display chained-dollar values, a "residual" line shows the difference between the sum of detailed chained-dollar series and its corresponding aggregate.

Updates to GDP

BEA releases three vintages of the current quarterly estimate for GDP. "Advance" estimates are released near the end of the first month following the end of the quarter and are based on source data that are incomplete or subject to further revision by the source agency. "Second" and "third" estimates are released near the end of the second and third months, respectively, and are based on more detailed and more comprehensive data as they become available.

The table below shows the average revisions to the quarterly percent changes in real GDP between different estimate vintages, without regard to sign.

| Vintage | Average Revision Without Regard to Sign (percentage points, annual rates) |
|-------------------|---|
| Advance to second | 0.5 |
| Advance to third | 0.6 |
| Second to third | 0.3 |

Note - Based on estimates from 1996 through 2020. For more information on GDP updates, refer to [Revision Information](#) on the BEA website.

Annual and comprehensive updates are released in late September. Annual updates generally cover at least the 5 most recent calendar years (and their associated quarters) and incorporate newly available major annual source data as well as some changes in methods and definitions to improve the accounts. Comprehensive (or benchmark) updates are carried out at about 5-year intervals and incorporate major periodic source data, as well as major conceptual improvements.

Unlike GDP, advance current quarterly estimates of GDI and corporate profits are not released because data on domestic profits and on net interest of domestic industries are not available. For fourth quarter estimates, these data are not available until the third estimate.

GDP by industry and gross output estimates are released with the third estimate of GDP.

Annual Update Results Tables (Refer to *NEA-AU22-Summary-of-Results-Tables.xlsx*)

- Table 1. Real Gross Domestic Product and Related Measures: Percent Change from Preceding Period, Revised and Previously Published
- Table 2. Contributions to Percent Change in Real Gross Domestic Product, Revised and Previously Published
- Table 3A. Gross Domestic Product and Related Measures
- Table 3B. Real Gross Domestic Product and Related Measures
- Table 4. Price Indexes for Gross Domestic Product and Related Measures: Percent Change from Preceding Period, Revised and Previously Published
- Table 5. Real Gross Domestic Product: Annual Percent Change, Revised and Previously Published
- Table 7. Relation of Gross Domestic Product, Gross National Product, and National Income
- Table 8. Personal Income and Its Disposition

- Table 9A. Corporate Profits
- Table 9B. Corporate Profits: Percent Change from Preceding Period
- Table 10A. Corporate Profits by Industry
- Table 10B. Corporate Profits by Industry: Change from Preceding Period
- Table 11. Gross Value Added of Nonfinancial Domestic Corporate Business
- Table 12. Real Gross Domestic Product by Industry Group: Percent Change from Preceding Period
- Table 13. Contributions to Percent Change in Real Gross Domestic Product by Industry Group
- Table 14. Gross Domestic Product by Industry Group: Level and Change from Preceding Period
- Table 15. Price Indexes for Gross Domestic Product by Industry Group: Percent Change from Preceding Period
- Table 16. Real Gross Output by Industry Group: Percent Change from Preceding Period
- Table 17. Gross Output by Industry Group: Level and Change from Preceding Period
- Table 18. Price Indexes for Gross Output by Industry Group: Percent Change from Preceding Period

Supplemental Tables (Revisions to Selected Time Spans and Business Cycles)

- Table A1. Revisions to Real Gross Domestic Product, Expanded Detail, Over the Period 2016–2021
- Table A2. Revisions to Real Gross Domestic Product, Expanded Detail, Over the Period 2016Q4–2021Q4
- Table A3. Revisions to Real Gross Domestic Product, Expanded Detail, Over the Period 2009Q2–2019Q4
- Table A4. Revisions to Real Gross Domestic Product, Expanded Detail, Over the Period 2019Q4–2020Q2
- Table A5. Revisions to Real Gross Domestic Product, Expanded Detail, Over the Period 2020Q2–2021Q4
- Table B1. Revisions to Chain-Type Price Indexes Over the Period 2016–2021
- Table B2. Revisions to Chain-Type Price Indexes Over the Period 2016Q4–2021Q4
- Table C. Changes from Preceding Period in Real Gross Domestic Product and Real Gross Domestic Income: Annually, 2016–2021, and Quarterly, 2016Q4–2021Q4
- Table D. Revisions to Cyclical Fluctuations in Real Gross Domestic Product, 1948–2020

Note: The following tables will be included in the September 29 GDP news release:

- Table 6. Real Gross Domestic Product: Percent Change from Quarter One Year Ago
- Appendix Table A. Real Gross Domestic Product and Related Aggregates: Percent Change from Preceding Period and Contributions to Percent Change
- Appendix Table B. Not Seasonally Adjusted Real Gross Domestic Product: Level and Percent Change from Quarter One Year Ago