

2023 Comprehensive Update of the National Economic Accounts

Summary of Results

Released Thursday, September 28, 2023



Summary of Results

Comprehensive updates of the National Economic Accounts (NEAs), which are carried out about every 5 years, are an important part of BEA's regular process for improving and modernizing its accounts to keep pace with the ever-changing U.S. economy. Updates incorporate newly available and more comprehensive source data, as well as improved estimating methodologies. This year, for the first time, BEA will release its benchmark updates of the nation's gross domestic product (GDP) and related industry and state statistics within the same timeframe.

BEA will release initial results from the 2023 comprehensive update of the NEAs, which include the National Income and Product Accounts (NIPAs) as well as the Industry Economic Accounts (IEAs), on September 28, 2023. The update will present revised statistics for GDP, GDP by industry, and gross domestic income (GDI). For details, refer to "Information on Updates to the National Economic Accounts." The initial results of the comprehensive update of the Regional Economic Accounts will be released on September 29, 2023.

GDP by industry and GDP by state news releases for the second quarter of 2023 will be released later this fall. BEA will send out an <u>advisory</u> with the exact days and times when they become available.

Current-dollar measures of GDP and related components are revised from the first quarter of 2013 through the first quarter of 2023. GDI and selected income components are revised from the first quarter of 1979 through the first quarter of 2023. Current-dollar GDP by industry statistics will be revised from the first quarter of 2005 through the first quarter of 2023; however, revisions prior to the first quarter of 2013 will be offset across industries within each period.

The reference year for chain-type quantity and price indexes and for the chained-dollar estimates is updated to 2017 from 2012.

Availability of Data and Detailed Results

On September 28, 2023, most NIPA and IEA tables will be available through <u>BEA's Interactive Data Application</u> on the BEA website. Refer to "<u>Information on Updates to the National Economic Accounts</u>" for the data release plan 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, a forthcoming <u>Survey of Current Business</u> article will describe the update in more detail.

Previously published estimates, which are superseded by the September 28 release, can be found in <u>BEA's data archives</u>.



This summary focuses on the more recent time span of 2017 through 2022. Updated estimates for the first quarter of 2023 will be discussed in the news release for the "third" estimate of GDP for the second quarter of 2023 released on September 28.

Summary of Updates

The picture of the economy presented in the updated estimates is very similar to the picture presented in the previously published estimates.

- For 2017–2022, the average annual growth rate of real GDP was 2.2 percent, revised up 0.1 percentage point from the previously published estimates (table A1). The percent change in real GDP was revised up 0.3 percentage point for 2017, revised up 0.1 percentage point for 2018, revised up 0.2 percentage point for 2019, revised up 0.6 percentage point for 2020, revised down 0.1 percentage point for 2021, and revised down 0.2 percentage point for 2022 (table 1).
- For 2017–2022, the average rate of change in the price index for gross domestic purchases, which measures prices paid by U.S. residents, was 3.2 percent, unrevised from the previously published estimates (table B1).
- For the period of expansion from the second quarter of 2009 through the fourth quarter of 2019, real GDP increased at an average annual rate of 2.4 percent, revised up 0.1 percentage point from the previously published estimates (table A3).
- For the pandemic-related contraction from the fourth quarter of 2019 to the second quarter of 2020, real GDP decreased 17.5 percent, revised up 0.7 percentage point from the previously published estimates (table A4).
- For the period of expansion from the second quarter of 2020 to the fourth quarter of 2022, real GDP increased at an average annual rate of 5.9 percent, revised down 0.3 percentage point from the previously published estimates (table A5).

Improvements Incorporated in This Comprehensive Update

Comprehensive updates incorporate newly available and revised source data as well as three major types of improvements:

- Statistical changes that introduce new and improved methodologies and bring in newly available and revised source data.
- Changes in definitions and in classifications that update the accounts to portray the evolving U.S. economy more accurately and that provide consistent comparisons with data from other national economies.
- Changes in presentations that make BEA's tables more informative.



The source data and improvements incorporated in the updated estimates are summarized below. For additional detail, refer to "Preview of the 2023 Comprehensive Update of the National Economic Accounts," published on June 23, 2023, in BEA's online journal, the *Survey of Current Business*.

Newly available and revised source data. The updated estimates reflect the following newly available and revised major source data:

Summary of Major Source Data Incorporated		
Agency	Data	Years covered and vintage
U.S. Census Bureau	Economic Census	2017
	Annual Capital Expenditures Survey	2020 (revised) 2021 (new)
	Annual Wholesale Trade Survey	2018–2020 (revised) 2021 (new)
	Annual Retail Trade Survey	2018–2020 (revised) 2021 (new)
	Annual Survey of Manufactures	2020 (revised) 2021 (new)
	Monthly indicators of manufactures, merchant wholesale trade, and retail trade	2018–2022 (revised)
	Service Annual Survey	2018–2020 (revised) 2021 (new)
	Annual Survey of State and Local Government Finances	Fiscal years 2018– 2020 (revised) Fiscal year 2021 (new)
	Monthly survey of construction spending (value put in place)	2018–2022 (revised)
	Quarterly Services Survey	2018–2022 (revised)
	Current Population Survey/Housing Vacancy Survey	2018–2021 (revised) 2022 (new)
U.S. Office of Management and Budget	Federal budget	Fiscal year 2022 (revised) Fiscal year 2023 (new)
U.S. Internal Revenue Service	Tabulations of tax returns for corporations	2020 (revised) 2021 (new)
	Tabulations of tax returns for sole proprietorships and for partnerships	2021 (new)
U.S. Bureau of Labor Statistics	Quarterly Census of Employment and Wages	2018–2022 (revised)
	Occupational Employment Statistics program	2022 (new)
U.S. Department of Agriculture	Farm statistics	2018–2022 (revised)
U.S. Bureau of Economic Analysis	International Transactions Accounts	2018–2022 (revised)



- BEA's 2017 benchmark Input-Output (I-O) accounts, which incorporate results of the 2017 Economic Census
 and provide the most thorough and detailed information on the structure of the U.S. economy, are used to
 benchmark the expenditure components of GDP.
- For 2018–2022, the revised estimates also reflect the incorporation of newly available and revised source data that are regularly incorporated in NEA annual updates and that became available after the last NEA annual update in September 2022. These data include U.S. Census Bureau surveys, Office of Management and Budget federal government budget data, BEA data from the International Transactions Accounts, U.S. Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages data, Internal Revenue Service (IRS) data, and U.S. Department of Agriculture farm statistics.

Changes in methodologies. The updated estimates reflect the following methodology improvements:

- Dividends paid to shareholders by real estate investment trusts (REITs) are adjusted to exclude capital gains, based on IRS Statistics of Income (SOI) data, in keeping with international standards and the treatment of capital gains elsewhere in the NEAs.
- Equity REITs are reclassified from the funds, trusts, and other financial vehicles industry to the real estate industry. The new treatment is consistent with the production processes of equity REITS and with the North American Industrial Classification System and will facilitate international comparisons.
- The treatment of regulated investment companies, such as mutual funds, is updated to be more consistent with their status as "pass-through institutions" that pass most of their income to shareholders and have minimal saving.
- The treatment of Federal Reserve Banks is updated by including measures of monetary interest payments and improved measures of their implicit services.
- The estimates of industries' intermediate use of implicit financial services are made more accurate using data from the Census Bureau Quarterly Financial Report and the IRS SOI.
- The estimates of housing services are improved by using data from the American Community Survey to distinguish between rental value and utility costs.
- Measures of intermediate expenses for meals and entertainment are improved using IRS SOI tax return data.
- The measures of the services of the National Flood Insurance Program are updated to incorporate an improved estimate of expected losses.
- Estimates of investment in own-account software (in-house development of software by business for its own use, measured by input costs) are improved by expanding the set of occupations that typically create this software, based on BLS data on occupational employment and wages.
- Estimates of residential and nonresidential real estate brokers' commissions are improved by using detailed data from the Economic Census.
- Price measures are improved by introducing new composite price indexes for cloud computing services and a new price index for alternative electric structures.



Changes in Presentations

Presentational changes introduced in this comprehensive update include:

- Personal consumption expenditure (PCE) tables for expenditures and prices present new series: PCE
 excluding food, energy, and housing and PCE services excluding energy and housing.
- Monthly PCE tables present expanded component detail that aligns with the quarterly and annual presentations to ease the crosswalk between PCE statistics across different frequencies.
- New tables present component contributions to the monthly percent change in real PCE and PCE prices to help facilitate analyses of recent trends in inflation and consumer spending.
- New tables present the percent change from the same period 1 year ago for monthly and quarterly PCE expenditures and prices.
- BEA's tables now present additional details on foreign trade, personal and government expenditures for motor vehicles, interest paid by Federal Reserve Banks, alternative electric structures in private fixed investment, and investment by industry in the fixed assets accounts.

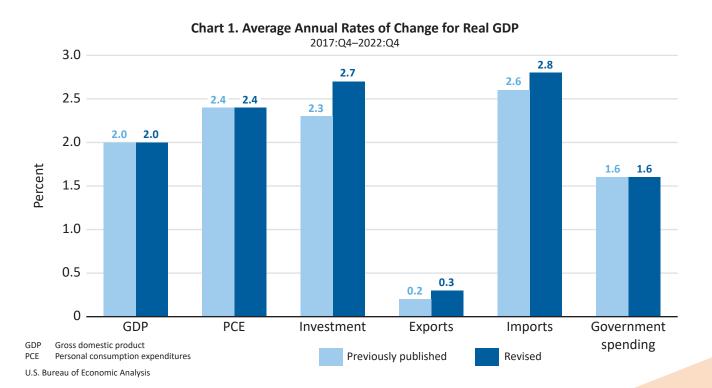
Real GDP

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

- From 2017 to 2022, real GDP increased at an average annual rate of 2.2 percent; in the previously published estimates, real GDP increased at an average annual rate of 2.1 percent (table A1). When measured from the fourth quarter of 2017 to the fourth quarter of 2022, real GDP increased at an average annual rate of 2.0 percent, the same as the previously published estimate (table A2).
- The percent change in real GDP was revised up for 2017, 2018, 2019, and 2020 and was revised down for 2021 and 2022 (table 1).
 - » For 2017, the increase in real GDP was revised up 0.3 percentage point, from 2.2 percent to 2.5 percent. The revision primarily reflected upward revisions to PCE and to nonresidential fixed investment that were partly offset by an upward revision to imports, a subtraction in the calculation of GDP (table 2).
 - » For 2018, the increase in real GDP was revised up 0.1 percentage point, from 2.9 percent to 3.0 percent. The revision primarily reflected an upward revision to nonresidential fixed investment, a downward revision to imports, and an upward revision to federal government spending; these revisions were partly offset by downward revisions to PCE and to private inventory investment.



- » For 2019, the increase in real GDP was revised up 0.2 percentage point, from 2.3 percent to 2.5 percent, primarily reflecting upward revisions to state and local government spending, nonresidential fixed investment, and private inventory investment that were partly offset by an upward revision to imports.
- » For 2020, the decrease in real GDP was revised up 0.6 percentage point, from a decrease of 2.8 percent to a decrease of 2.2 percent, primarily reflecting upward revisions to PCE, state and local government spending, and private inventory investment.
- » For 2021, the percent change in real GDP was revised down 0.1 percentage point, from 5.9 percent to 5.8 percent, primarily reflecting downward revisions to state and local government spending, federal government spending, and nonresidential fixed investment that were partly offset by an upward revision to PCE.
- » For 2022, the percent change in real GDP was revised down 0.2 percentage point, from 2.1 percent to 1.9 percent, primarily reflecting downward revisions to PCE and private inventory investment, an upward revision to imports, and downward revisions to state and local government spending and exports that were partly offset by upward revisions to nonresidential fixed investment and residential fixed investment.
- From the first quarter of 2017 through the fourth quarter of 2022, 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 change in real GDP (increase or decrease) for any of these quarters.
- Current-dollar GDP was revised up for all years from 2017 to 2022: by \$134.8 billion (0.7 percent) for 2017, \$123.5 billion (0.6 percent) for 2018, \$140.4 billion (0.7 percent) for 2019, \$262.5 billion (1.2 percent) for 2020, \$278.9 billion (1.2 percent) for 2021, and \$281.4 billion (1.1 percent) for 2022 (table 3A).





Gross Domestic Income and the Statistical Discrepancy

- From 2017 to 2022, real GDI increased at an average annual rate of 2.3 percent; in the previously published estimates, real GDI increased at an average annual rate of 2.1 percent (table A1). From the fourth quarter of 2017 to the fourth quarter of 2022, real GDI increased at an average annual rate of 2.0 percent; in the previously published estimates, real GDI increased at an average annual rate of 1.8 percent (table A2).
- The statistical discrepancy as a percentage of GDP was revised from -0.6 percent to 0.3 percent for 2017, revised from -0.6 percent to 0.3 percent for 2018, revised from -0.5 percent to 0.2 percent for 2019, revised from -1.0 percent to 0.3 percent for 2020, revised from -0.6 percent to less than 0.1 percent for 2021, and revised from -0.6 percent to -0.2 percent for 2022 (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 2.2 percent from 2017 to 2022; in the previously published estimates, it increased at an average annual rate of 2.1 percent (table A1).

Price Measures

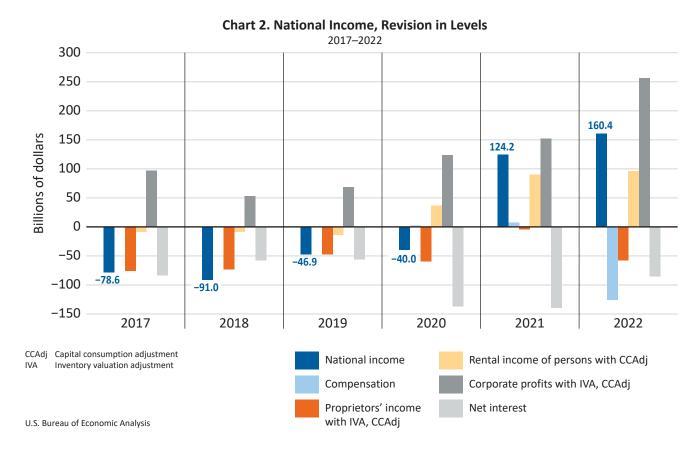
- From the fourth quarter of 2017 to the fourth quarter of 2022, the average annual rate of change in the price index for gross domestic purchases was 3.4 percent, unrevised from the previously published estimates (table B2).
- From the fourth quarter of 2017 to the fourth quarter of 2022, the average annual rate of change in the price index for PCE was 3.2 percent, the same as was previously published. The increase in the "core" PCE price index, which excludes food and energy, was 3.0 percent, revised up 0.1 percentage point from the previously published estimates (table B2).

Income and Saving Measures

- National income was revised down \$78.6 billion (0.5 percent) for 2017, revised down \$91.0 billion (0.5 percent) for 2018, revised down \$46.9 billion (0.3 percent) for 2019, revised down \$40.6 billion (0.2 percent) for 2020, revised up \$124.2 billion (0.6 percent) for 2021, and revised up \$160.4 billion (0.7 percent) for 2022 (chart 2 and table 7).
 - » For 2017, the downward revision primarily reflected downward revisions to net interest, proprietors' income, rental income of persons, and business current transfer payments that were partly offset by an upward revision to corporate profits.
 - » For 2018, the downward revision primarily reflected downward revisions to proprietors' income, net interest, and rental income of persons that were partly offset by an upward revision to corporate profits.
 - » For 2019, the downward revision primarily reflected downward revisions to net interest, proprietors' income, and rental income of persons that were partly offset by an upward revision to corporate profits.



- » For 2020, the downward revision primarily reflected downward revisions to net interest, proprietors' income, taxes on production and imports, and supplements that were partly offset by upward revisions to corporate profits, rental income of persons, and wages and salaries.
- » For 2021, the upward revision primarily reflected upward revisions to corporate profits, rental income of persons, wages and salaries, business current transfer payments, and taxes on production and imports that were partly offset by downward revisions to net interest, supplements, and the current surplus of government enterprises.
- » For 2022, the upward revision primarily reflected upward revisions to corporate profits, rental income of persons, taxes on production and imports, business current transfer payments, and the current surplus of government enterprises that were partly offset by downward revisions to net interest, wages and salaries, proprietors' income, and supplements.



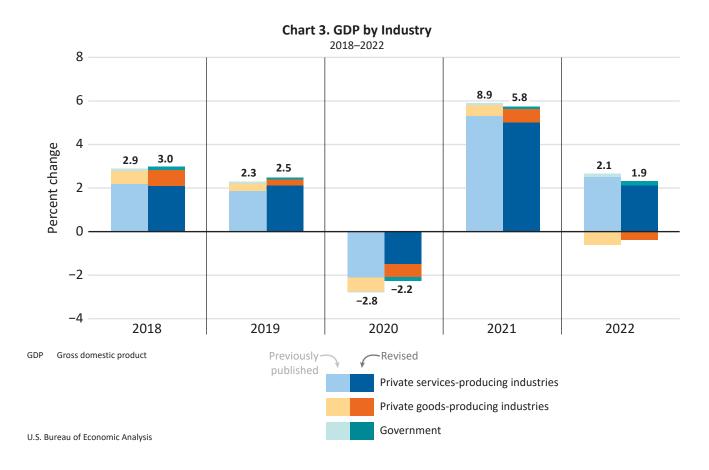
- Corporate profits was revised up \$96.7 billion (4.5 percent) for 2017, \$53.2 billion (2.3 percent) for 2018, \$68.2 billion (2.8 percent) for 2019, \$123.2 billion (5.5 percent) for 2020, \$151.7 billion (5.5 percent) for 2021, and \$256.1 billion (8.7 percent) for 2022 (table 9A).
- Personal income was revised down \$177.1 billion (1.1 percent) for 2017, revised down \$155.6 billion (0.9 percent) for 2018, revised down \$230.7 billion (1.2 percent) for 2019, revised down \$203.3 billion (1.0 percent) for 2020, revised up \$112.8 billion (0.5 percent) for 2021, and revised up \$63.6 billion (0.3 percent) for 2022 (table 8).



- From 2017 to 2022, the average annual rate of growth of real disposable personal income was 2.0 percent, revised up 0.4 percentage point from the previously published estimates (table A1).
- The personal saving rate (personal saving as a percentage of disposable personal income) was revised down from 7.3 percent to 5.8 percent for 2017, 7.6 percent to 6.4 percent for 2018, 8.8 percent to 7.4 percent for 2019, 17.0 percent to 15.4 percent for 2020, 12.0 percent to 11.4 percent for 2021, and 3.5 percent to 3.3 percent for 2022 (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 (chart 3).



• For 2018, the increase in real GDP was revised up 0.1 percentage point, from 2.9 percent to 3.0 percent. Upward revisions to private goods-producing industries (led by nondurable-goods manufacturing) and government were partly offset by a downward revision to private services-producing industries (led by finance and insurance). The direction of change was unrevised for 21 of 22 major industry groups (table 12).



- For 2019, the increase in real GDP was revised up 0.2 percentage point, from 2.3 percent to 2.5 percent.
 Upward revisions to private services-producing industries (led by information industries) and to government were partly offset by a downward revision to private goods-producing industries (led by nondurable-goods manufacturing). The direction of change was unrevised for 20 of 22 major industry groups.
- For 2020, the decrease in real GDP was revised up 0.6 percentage point, from a decrease of 2.8 percent to a decrease of 2.2 percent. Upward revisions to private services-producing industries (led by real estate and rental and leasing) and private goods-producing industries (led by nondurable-goods manufacturing) were partly offset by a downward revision to government. The direction of change was unrevised for 20 of 22 major industry groups.
- For 2021, the increase in real GDP was revised down 0.1 percentage point, from 5.9 percent to 5.8 percent.
 A downward revision to private services-producing industries (led by wholesale trade and finance and insurance) was partly offset by upward revisions to private goods-producing industries (led by agriculture, forestry, fishing, and hunting) and to government. The direction of change was unrevised for 20 of 22 major industry groups.
- For 2022, the increase in real GDP was revised down 0.2 percentage point, from 2.1 percent to 1.9 percent. A downward revision to private services-producing industries (led by wholesale trade and finance and insurance) was partly offset by upward revisions to private goods-producing industries (led by construction) and to government. The direction of change was unrevised for 18 of 22 major industry groups.

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 up 0.1 percentage point to an increase of 2.9 percent in 2018, was unrevised with an increase of 1.9 percent in 2019, was revised up 0.3 percentage point to a decrease of 3.3 percent in 2020, was revised up 0.3 percentage point to an increase of 6.5 percent in 2021, and was revised down 0.5 percentage point to an increase of 2.3 percent in 2022 (table 16).



Additional Information

Resources

Additional resources available at www.bea.gov:

- Stay informed about BEA developments by reading <u>The BEA Wire</u>, signing up for <u>BEA's email subscription service</u>, or following <u>@BEA News</u> on X, formerly known as Twitter.
- Historical time series for these estimates can be accessed in BEA's Interactive Data Application.
- Access BEA data by registering for BEA's <u>Data Application Programming Interface</u>.
- For more on BEA's statistics, see BEA's online journal, the *Survey of Current Business*.
- For upcoming economic indicators, see BEA's news release schedule.
- More information on concepts and methods of the U.S. National Income and Product Accounts is provided in the NIPA Handbook: Concepts and Methods of the U.S. National Income and Product 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.

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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 adjustment (CCAdj) in the 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 NIPAs. 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" in the NIPA Handbook.



Statistical Conventions

Annual-versus-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 1 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 2017). 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. These values are calculated by multiplying the quantity index by the current dollar value in the reference year (2017) 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 2021. For more information on GDP updates, refer to <u>revision information</u> on the BEA website.

U.S. Bureau of Economic Analysis

Annual and comprehensive updates are typically released in late September. Annual updates generally cover at least the five 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 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 typically released with the third estimate of GDP.