CHAPTER 2: FUNDAMENTAL CONCEPTS

(Updated: May 2019)

Scope of the Estimates

Production boundary

One of the fundamental questions that must be addressed in preparing the national economic accounts is how to define the production boundary—that is, what parts of the myriad human activities are to be included in or excluded from the measure of the economy's production. According to the international *System of National Accounts* (SNA), "Economic production may be defined as an activity carried out under the control and responsibility of an institutional unit that uses inputs of labour, capital, and goods and services to produce outputs of goods or services. There must be an institutional unit that assumes responsibility for the process of production and owns any resulting goods or knowledge-capturing products produced or is entitled to be paid, or otherwise compensated, for the change-effecting or margin services provided."[1]

---

[1] Commission of the European Communities, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, and the World Bank, *System of National Accounts 2008*: 6.24 at http://unstats.un.org/unsd/nationalaccount/SNA2008.asp.

Under this definition, certain natural processes may be included in or excluded from production, depending upon whether they are under the ownership or control of an entity in the economy. For example, the growth of trees in an uncultivated forest is not included in production, but the harvesting of the trees from that forest is included.

The general definition of the production boundary may then be restricted by functional considerations. In the SNA (and in the U.S. accounts), certain household activities—such as housework, do-it-yourself projects, and care of family members—are excluded, partly because by nature these activities tend to be self-contained and have limited impact on the rest of the economy and because their inclusion would affect the usefulness of the accounts for long-standing analytical purposes, such as business cycle analysis.[2]

In the U.S. economic accounts, the production boundary is further restricted by practical considerations about whether the productive activity can be accurately valued or measured. For example, illegal activities, such as gambling and prostitution in some states, should in principle be included in measures of production. However, these activities are excluded from the U.S. accounts because they are by their very nature conducted out of sight of public scrutiny and so data are not available to measure them.

Asset boundary

In general, the boundary for assets in the U.S. economic accounts is comparable to that for production. According to the SNA, assets "are entities that must be owned by some unit, or units, and from which economic benefits are derived by their owner(s) by holding or using them over a period of time."[3] Economic assets may be either financial assets or nonfinancial assets. Financial assets consist of all financial claims—that is, the payment or series of payments due to a creditor by a debtor under the terms of a liability—shares or other equity in corporations plus gold bullion held by monetary authorities as a reserve asset.[4] These assets are covered in the financial accounts of the United States, which are maintained by the Federal Reserve Board.

Two broad categories of nonfinancial assets are identified. *Produced assets* are assets that have come into existence as a result of a production process. The three types of produced assets are the following: fixed assets, inventories, and valuables such as precious metals that are primarily held as stores of value. *Nonproduced assets* are assets that arise from means other than a production process; a primary example is naturally occurring resources, such as mineral deposits and uncultivated forests.[5]

---

[2] SNA 2008: 6.28–6.29. See also Benjamin Bridgeman, "Accounting for Household Production in the National Accounts: An Update, 1965-2014," *Survey of Current Business* 96 (February 2016).
[3] SNA 2008: 1.46.
[4] SNA 2008: 11.7–11.8.
[5] BEA does not prepare estimates of the stocks of nonproduced assets, though it does prepare estimates of net purchases and sales of these assets. However, in the mid-1990s, BEA developed an analytical framework for a set of environmental accounts along with prototype estimates for the value of the stocks of

At present, BEA prepares estimates of capital stocks for private and government fixed assets, for inventories owned by private business, and for consumer durable goods (which are included in BEA's fixed assets and consumer durable goods accounts).[6]

- Fixed assets are produced assets that are used repeatedly, or continuously, in the processes of production for more than 1 year. BEA's estimates of fixed assets cover structures, equipment, and intellectual property products, but not cultivated assets such as livestock or orchards. The acquisition of fixed assets by private business is included in the NIPA measure "gross private domestic investment," and the acquisition of fixed assets by government is included in the NIPA measure "government consumption expenditures and gross investment." The depreciation of fixed assets—that is, the decline in their value due to physical deterioration, normal obsolescence, and accidental damage except that caused by a catastrophic event—is captured in the NIPA measure "consumption of fixed capital."[7]
- The stock of private inventories consists of materials and supplies, work in process, finished goods, and goods held for resale. The change in private inventories is included in the NIPA measure "gross private domestic investment."
- Consumer durable goods are tangible commodities purchased by consumers that can be used repeatedly or continuously for a prolonged period (for example, motor vehicles). Purchases of these goods are included in the NIPA measure "personal consumption expenditures."

Thus, in the NIPAs, acquisitions of fixed assets by private business and by government are treated as investment, but acquisitions of consumer durable goods by households are treated as consumption expenditures rather than as investment.[8]

Sometimes, the asset boundary may change as a result of changes in definition or in the ability to measure or value an asset. For example, in the 2013 comprehensive update of the NIPAs, BEA introduced two major changes that broadened the definition of fixed investment and thus expanded the boundary of its capital stock estimates. First, BEA began treating expenditures by business, government, and nonprofit institutions serving households for research and development as fixed investment. Second, BEA began treating expenditures by business and nonprofit institutions serving households on entertainment, literary, and other artistic originals as fixed investment. These changes recognize that these intangible assets have ownership rights, are long-lasting, and are

---

mineral resources. See "Integrated Economic and Environmental Satellite Accounts," *Survey* 74 (April 1994): 33–49; and "Accounting for Mineral Resources: Issues and BEA's Initial Estimates," *Survey* 74 (April 1994): 50–72.

[6] See "Fixed Assets," in BEA's "Interactive Data," at www.bea.gov.

[7] In the 2009 comprehensive update, BEA introduced a new treatment of disasters in which the value of irreparable damage to, or the destruction of, fixed assets is no longer recorded as consumption of fixed capital; see Eugene P. Seskin and Shelly Smith, "Preview of the 2009 Comprehensive Revision of the NIPAs: Changes in Definitions and Presentations," *Survey* 89 (March 2009): 11–15.

[8] However, estimates of the stocks of consumer durables are included in household balance sheets in the Federal Reserve Board's financial accounts of the United States as well as in BEA's capital stock estimates.

used in the production process. Private investment in research and development and in entertainment originals, along with that in software (which has been treated as a fixed asset since the 1999 comprehensive NIPA revision), is now shown in the NIPAs in the subcategory "intellectual property products" in nonresidential fixed investment. Similarly, government investment in research and development, along with that in software, is shown in "intellectual property products" in gross government fixed investment.

Also as part of the 2013 comprehensive update, BEA began recognizing as capital investment *all* of the nonfinancial ownership transfer costs that are associated with the purchase of a residential asset. These costs include title insurance; title, abstract, and attorney fees; payments for state and local government documentary and stamp taxes; and payments for surveys and engineering services; as well as the previously capitalized brokers' commissions on the sale of residential structures.[9]

Market and nonmarket output

The output that is included in the economic accounts is classified as "market," "produced for own use," or "nonmarket." Most production and distribution takes place within the market economy—that is, goods and services are produced for sale at prices that are "economically significant."[10] Thus, the current market price of the produced good or service provides a rational and viable basis for valuing this production.

Output for own final use consists of goods and services that are retained by the owners of the enterprises that produced them. Such output includes food produced on farms for own consumption, special tools produced by engineering firms for own use, and specialized software developed or improved in-house rather than purchasing custom-made software from a software development company. Goods or services produced for own final use are valued at the market prices of similar products or by their costs of production.[11]

Nonmarket output consists of goods and of individual or collective services that are produced by nonprofit institutions and by government that are supplied for free or at prices that are not economically significant. Individual services, such as education and health services, are provided at below-market prices as a matter of social or economic policy. Collective services, such as maintenance of law and order and protection of the environment, are provided for the benefit of the public as a whole and are financed out of

---

[9] For more information, see "Preview of the 2013 Comprehensive Revision of the National Income and Product Accounts: Changes in Definitions and Presentations," *Survey* 93 (March 2013): 13–39.

[10] Prices are "economically significant" when they have a significant influence on the amounts the producers are willing to supply and on the amounts the purchasers are willing to buy; see SNA 2008: 6.95.

[11] See SNA 2008: 6.114, 6.124–6.125.

funds other than receipts from sales. The values of the nonmarket output of nonprofits and of government are estimated based on the costs of production.[12]

In the NIPAs, a number of *imputations* for own-use and nonmarket transactions are made in order to include in the accounts the value of certain goods and services that have no observable price and are often not associated with any observable transaction.[13] Additionally, imputations keep the accounts invariant to how certain activities are carried out (for example, an employee may be paid either in cash or in kind).[14] Both a measure of production and the incomes associated with that production are imputed (for example, the imputation for food furnished to employees is included in PCE and in personal income).

The largest NIPA imputation is that made to approximate the value of the services provided by owner-occupied housing. This imputation is made so that the treatment of owner-occupied housing in the accounts is comparable to that for tenant-occupied housing (which is valued by rent paid), thereby keeping GDP invariant as to whether a house is owned or rented. In the NIPAs, the purchase of a new house (excluding the value of the unimproved land) is treated as an investment, the ownership of the home is treated as a productive enterprise, and a service is assumed to flow, over its economic life, from the house to the occupant. For the homeowner, the value of this service is measured as the income the homeowner could have received if the house had been rented to a tenant.

Another large imputation is that made to account for services (such as checking-account maintenance and loan services to borrowers) provided by banks and other financial institutions either without charge or for a small fee that does not reflect the entire value of the service. For the depositor, this "imputed interest" is measured as the difference between the interest paid by the bank and the interest that the depositor could have earned by investing in "safe" government securities (referred to as the "reference rate"). For the borrower, it is measured as the difference between the interest charged by the bank and the interest the bank could have earned by investing in those government securities.[15]

Geographic coverage

---

[12] See SNA 2008: 6.128–6.129.

[13] The SNA reserves the term "imputation" for situations in which a transaction must be "constructed" as well as "valued." See SNA 2008: 3.75.

[14] For a complete list of the NIPA imputations, see NIPA table 7.12, "Imputations in the National Income and Product Accounts" available on BEA's website at www.bea.gov.

[15] In the 2013 comprehensive update of the NIPAs, BEA introduced improved methods for measuring the implicitly priced services provided by commercial banks (see Kyle K. Hood, "Measuring the Services of Commercial Banks in the National Income and Product Accounts: Changes in Concepts and Methods in the 2013 Comprehensive Revision," *Survey* 93 (February 2013): 8–19). In the 2018 comprehensive update, these methods were also applied to credit unions and savings institutions; see Jason W. Chute, Stephanie H. McCulla, and Shelly Smith, "Preview of the 2018 Comprehensive Revision of the National Income and Product Accounts," *Survey* 98 (April 2018).

Another important consideration is the geographic boundary that defines what is included in the accounts. In the NIPAs, and in the industry accounts, the "U.S. estimates" cover the 50 states, the District of Columbia, and U.S. military installations, embassies, and consulates abroad. This treatment aligns gross domestic product (GDP), the principal measure of U.S. production, with other U.S. statistics, such as population and employment. In BEA's International Transactions Accounts (ITAs), the U.S. territories, Puerto Rico, and the Northern Mariana Islands are also treated as part of the domestic economy. This geographic difference between the two sets of accounts is reconciled through a "territorial adjustment."[16]

In the NIPAs, a distinction is made between "domestic" measures and "national" measures. Domestic measures cover activities that take place within the geographic borders of the United States, while national measures cover activities that are attributable to U.S. residents.[17] Thus, domestic measures are concerned with where an activity takes place, while national measures are concerned with to whom the activity is attributed. For example, GDP measures the market value of the goods, services, and structures produced within the nation's economy in a given period, while gross national product (GNP) measures the market value of the goods, services, and structures produced by labor and property supplied by U.S. residents. GNP is equal to GDP plus income receipts from the rest of the world less income payments to the rest of the world, and it is conceptually equivalent to gross national income (though it is estimated using different source data). Thus, for an assembly plant that is owned by a Japanese auto company and located in the United States, all of its output is included in GDP, but only the portion of the value that reflects U.S. residents' labor and property is included in GNP. And, for an assembly plant that is owned by a U.S. auto company and located in Great Britain, none of its output is included in GDP, but the portion of the value that reflects U.S. residents' labor or property is included in GNP.

---

[16] See NIPA table 4.3B, "Relation of Foreign Transactions in the National Income and Product Accounts to the Corresponding Items in the International Transactions Accounts," available on BEA's website at www.bea.gov. Effective with the 2009 comprehensive update, BEA includes most transactions between the U.S. government and economic agents in Guam, American Samoa, the Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands in federal government receipts and expenditures. Thus, like private transactions (such as trade in goods and services), government transactions with these areas are treated as transactions with the rest of the world. BEA's long-run goal is to make the geographic coverage in the NIPAs consistent with that in the ITAs (see Seskin and Smith, 15–16). See also Christina D. Hovland-Battikha and Erin M. Ludlow, "Territorial Economic Accounts for American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, and the U.S. Virgin Islands," *Survey* 98 (February 2018).

[17] "U.S. residents" includes individuals, governments, business enterprises, trusts, associations, nonprofit institutions, and similar organizations that have the center of their economic interest in the United States and that reside or expect to reside in the United States for 1 year or more. (For example, business enterprises residing in the United States include U.S. affiliates of foreign companies.) In addition, U.S. residents include all U.S. citizens who reside outside the United States for less than 1 year and U.S. citizens residing abroad for 1 year or more who meet one of the following criteria: owners or employees of U.S. business enterprises who reside abroad to further the enterprises' business and who intend to return within a reasonable period; U.S. government civilian and military employees and members of their immediate families; and students who attend foreign educational institutions.

Income and saving

Some economic theorists have broadly defined income as the maximum amount that a household, or other economic unit, can consume without reducing its net worth; saving is then defined as the actual change in net worth.[18] In the NIPAs, the definition of income is narrower, reflecting the goal of measuring current production. That is, the NIPA aggregate measures of current income—gross domestic income (GDI) for example—are viewed as arising from current production, and thus they are theoretically equal to their production counterparts (GDI equals GDP). NIPA saving is measured as the portion of current income that is set aside rather than spent on consumption or related purposes.

Consequently, the NIPA measures of income and saving exclude the following items that affect net worth but are not directly associated with current production:
- Capital gains or losses, or holding gains (or losses), which reflect changes in the prices of existing assets and thus do not represent changes in the real stock of produced assets;
- Capital transfers, which reflect changes in the ownership of existing assets; and
- Events, such as natural disasters, that result in changes in the real stock of existing assets but do not reflect an economic transaction.

Thus, for example, the NIPA estimate of personal income includes ordinary dividends paid to stockholders, but it excludes the capital gains that accrue to those stockholders as a result of rising stock prices. Personal saving is equal to personal income less personal outlays and personal taxes; it may generally be viewed as the portion of personal income that is used either to provide funds to capital markets or to invest in real assets such as residences.[19]

GDP and Other Major NIPA Measures

Three ways to measure GDP

In the NIPAs, GDP is defined as the market value of the goods, services, and structures produced by the economy in a given period. Conceptually, this measure can be arrived at by three separate means: as the sum of goods and services sold to final users, as the sum of income payments and other costs incurred in the production of goods and services, and as the sum of the value added at each stage of production (chart 2.1). Although these three ways of measuring GDP are conceptually the same, their calculation may not result in identical estimates of GDP because of differences in data sources, timing, and estimation techniques.
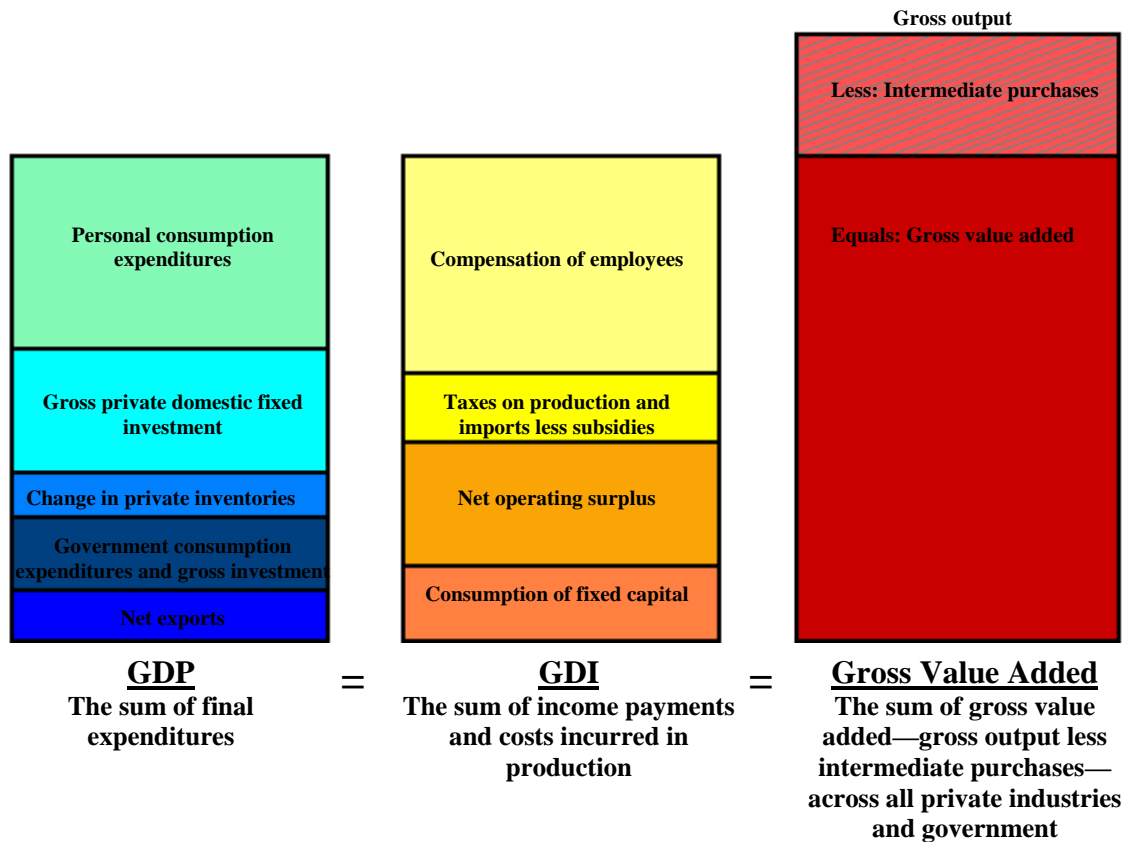
---

[18] Other theorists have limited this definition to expected income, a definition that would include regular capital gains but would exclude an unexpected windfall, such as a jackpot lottery payoff.

[19] See "Alternative Measures of Personal Saving," *Survey* 92 (March 2012): 23–26.

1. As the sum of goods and services sold to final users. This measure, known as the *expenditures approach*, is used to identify the goods and services purchased by persons, businesses, governments, and foreigners. It is calculated by summing the following final expenditures components.

- *Personal consumption expenditures*, which measures the value of the goods and services purchased by, or on the behalf of, persons—that is, households, nonprofit institutions that primarily serve households, private noninsured welfare funds, and private trust funds.
- *Gross private fixed investment*, which measures additions and replacements to the stock of private fixed assets without deduction of depreciation. Nonresidential fixed investment measures investment by businesses and nonprofit institutions in nonresidential structures, equipment, and intellectual property products. Residential fixed investment measures investment by businesses and households in residential structures and equipment, primarily new construction of single-family and multifamily units.
- *Change in private inventories*, which measures the value of the change in the physical volume of inventories owned by private business over a specified period, valued in the average prices of that period.
- *Net exports of goods and services*, which is calculated as exports less imports. Exports consist of goods and services that are sold, given away, or otherwise transferred by U.S. residents to foreign residents. Imports consist of goods and services that are sold, given away, or otherwise transferred by foreign residents to U.S. residents.
- *Government consumption expenditures and gross investment*, which comprises two components. Current consumption expenditures consists of the spending by general government in order to produce and provide goods and services to the public. Gross investment consists of spending by both general government and government enterprises for fixed assets (structures, equipment, and intellectual property products) that benefit the public or that assist government agencies in their productive activities.

Chart 2.1—Three Ways to Measure GDP

GDP = **GDI** = **Gross Value Added**
The sum of final expenditures — The sum of income payments and costs incurred in production — The sum of gross value added—gross output less intermediate purchases—across all private industries and government

Thus, GDP is equal to personal consumption expenditures (PCE) plus gross private domestic fixed investment plus change in private inventories plus government consumption expenditures and gross investment plus exports minus imports. In this calculation, imports offset the non-U.S. production that is included in the other final-expenditure components. For example, PCE includes expenditures on imported cars as well on domestically produced cars; thus, in order to properly measure *domestic* production, the sales of foreign-produced cars that are included in PCE are offset by a comparable entry in the imports of these cars.[20]

2. As the sum of income payments and other costs incurred in the production of goods and services. This measure, known as the *income approach*, is used to examine the purchasing power of households and the financial status of businesses. The aggregate measure, referred to as GDI, is derived by summing the following components.

- *Compensation of employees*, which is the total remuneration of employees in return for their work. It consists of wages and salaries (primarily the monetary remuneration of employees) and supplements (employer contributions for employee pension and insurance funds and employer contributions for government social insurance).

---

[20] The offset covers the foreign-produced portion of the value of these sales; the domestic value-added (such as the margin provided by domestic dealerships) on imported cars is measured by the difference between the two and is included in GDP.

- *Taxes on production and imports*, which consist of taxes payable on products when they are produced, delivered, sold, transferred, or otherwise disposed of by their producers (including federal excise taxes, custom duties, and state and local sales taxes) and of other taxes on production, such as taxes on ownership of assets used in production (including local real estate taxes). These taxes do not include taxes on income.
- *Subsidies*, which are subtracted in the calculation of GDI, are payments by government agencies to private business (for example, federal subsidies to farmers) and to government enterprises (for example, federal subsidies to state and local public housing authorities) to support their current operations.
- *Net operating surplus*, which is a profits-like measure that shows the incomes earned by private and government enterprises from current production before deducting any explicit or implicit interest charges, rent, or other property incomes payable on financial assets, land, or other natural resources required to carry out production. Net operating surplus plus consumption of fixed capital is equal to *gross operating surplus*.
- *Consumption of fixed capital*, which is the NIPA measure of economic depreciation—that is, the decline in the value of the stock of assets due to physical deterioration, normal obsolescence, and accidental damage except that caused by a catastrophic event.[21]

Thus, GDI is equal to compensation of employees, plus taxes on production and imports less subsidies, plus net operating surplus, plus consumption of fixed capital. Subsidies are implicitly included in the measure of net operating surplus, but because they do not represent incomes paid or costs incurred in domestic production, they must be subtracted in calculating GDI. In the NIPAs, subsidies are shown as a subtraction from "taxes on imports and production" because they are transfers from government to business and thus, in effect, represent a negative tax by government.

3. As the sum of "value added" by all industries in the economy. This measure, known as the *value-added, or production, approach*, is used to analyze the industrial composition of U.S. output. In the input-output (I-O) accounts, value added is defined as the difference between an industry's gross output (sales or receipts plus other operating income and inventory change) and its intermediate inputs (goods and services that are used in production). When value added is aggregated across all industries in the economy, industry sales to and purchases from each other cancel out, and the remainder is industry sales to final users, or GDP.[22]

---

[21] In the 2009 comprehensive update, BEA introduced a new treatment of disasters in which the value of irreparable damage to, or the destruction of, fixed assets is no longer recorded as consumption of fixed capital; see Eugene P. Seskin and Shelly Smith, 11–15.

[22] In the I-O accounts, "all industries" includes government industries (such as the U. S. Postal Service) and certain "special industries" (such as owner-occupied housing).

The I-O accounts focus on gross output because they are designed to measure the productive activities and interrelationships of all industries, regardless of whether the goods and services produced by these industries are for intermediate or for final use.

Thus, gross output is sometimes referred to as "gross duplicated domestic output," because it double-counts the industry output that is purchased by other industries and used as inputs for their production. Because GDP counts only industry sales to final users, it is sometimes referred to as a "nonduplicative" measure of production in the economy.

To illustrate, a new car shipped from an auto assembly plant reflects not only the costs and profit associated with final assembly but also the costs and profit associated with all of the stages of production that preceded final assembly. At an earlier stage, the tires that were put on that car were recorded as output of the tire plant and reflected the costs and profit associated with their manufacture. Thus, in gross output, the value of the tires is counted twice—once in the value of the auto manufacturer's output and once in the value of the tire manufacturer's output. Further, including the value of the rubber and metal that were shipped to the tire plant would constitute triple counting, and so on. In contrast, in the measurement of auto-industry value added, the value of the tires shipped to the assembly plant represents an intermediate input and so is subtracted from the value of the shipments of completed cars from the assembly plant.

Because the nation's total value added is equal to its GDP and the nation's total gross output is equal to its GDP plus its total intermediate inputs, total gross output is much larger than GDP. For example, in the 2007 benchmark year, U.S. gross output was $26.2 trillion, while GDP was $14.5 trillion.

Major NIPA aggregates

In the NIPAs, the measure of domestic production that is derived as the sum of the final expenditures components is referred to as GDP, and the measure that is derived as the sum of the income payments and the costs incurred in production is referred to as GDI. These two measures and their components make up the "Domestic Income and Product Account," the first of the summary NIPA accounts (see the section "Accounting Framework"). In general, the source data for the expenditures components are considered more reliable than those for the income components, and the difference between the two measures is called the "statistical discrepancy."[23]

BEA also provides the equally-weighted mathematical average of GDP and GDI, as a number of reliability studies concluded that the average of these measures would better reflect the economic growth in a particular period by diminishing the known measurement inconsistencies between the two statistics, such as timing differences, gaps

---

[23] See Dylan G. Rassier, "The Role of Profits and Income in the Statistical Discrepancy," *Survey* 92 (February 2012): 8–22.

in underlying source data, and survey measurement errors.[24] The average of GDP and GDI is also one of the macroeconomic indicators used by the National Bureau of Economic Research's business cycle dating commission when determining turning points in the U.S. business cycle. Chart 2.2 illustrates the relationships between GDP, GDI, and several other important aggregate NIPA measures. These measures are distinguished by whether they are "product" or "income," "gross" or "net," and "domestic" or "national." In general, one moves

- from a "product" measure to an "income" measure by subtracting the statistical discrepancy,
- from a "gross" measure to a "net" measure by subtracting consumption of fixed capital (CFC), and
- from a "domestic" measure to a "national" measure by subtracting net income payments to the rest of the world (or equivalently, by adding net income receipts from the rest of the world).[25]

Chart 2.2—Relationships Between Major NIPA Measures of Income and Product
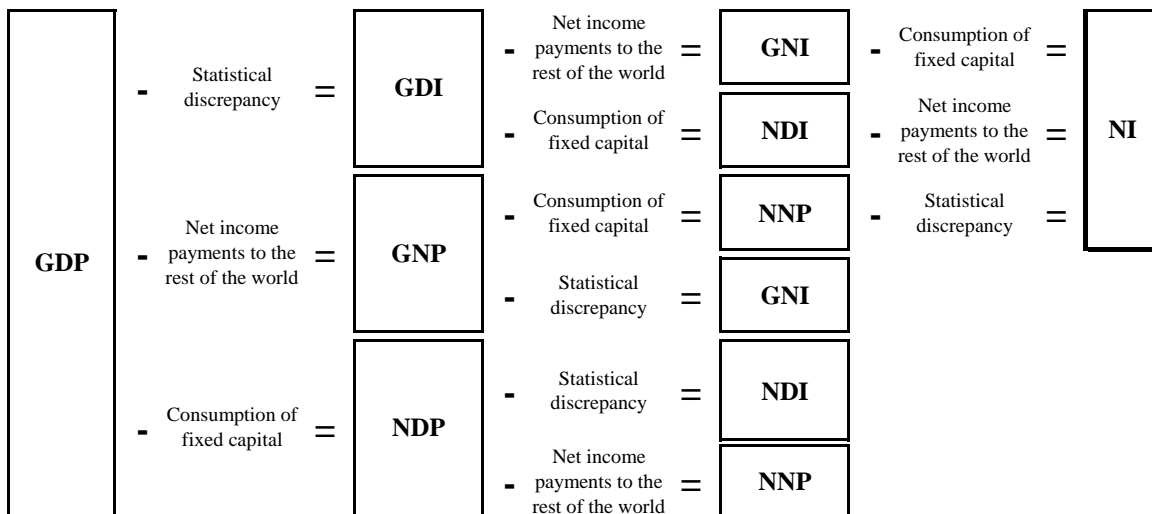
GDI Gross domestic income
GDP Gross domestic product
GNI Gross national income
GNP Gross national product
NDI Net domestic income
NDP Net domestic product
NI National income
NNP Net national product

---

[24] The average of GDP and GDI was introduced as part of the 2015 annual update of the NIPAs. For more on the reliability studies, see Dennis J. Fixler, Danit Kanal, and Pao-Lin Tien, "The Revisions to GDP, GDI, and Their Major Components," *Survey* 98 (January 2018) and William D. Nordhaus, "Income, Expenditures, and the 'Two Map Problem'" (paper presented at the BEA Advisory Committee Meeting, Washington, DC, November 2011).

[25] Net income payments to the rest of the world is equal to current payments to the rest of the world (primarily income paid to foreign residents on investments in U.S. assets) less current receipts from the rest of the world (primarily income received by U.S. residents on investments in assets abroad).

Gross national product (GNP), which was discussed earlier in this chapter (see the section "Geographic coverage"), is equal to GDP minus net income payments to the rest of the world.

Net domestic product (NDP) is a measure of how much of the nation's output is available for consumption or for adding to the nation's wealth. It is equal to GDP minus CFC.

Gross national income (GNI) measures the costs incurred and the incomes earned in the production of GNP. It is equal to GNP minus the statistical discrepancy. It is also equal to GDI minus net income payments to the rest of the world.

Net national product (NNP) is the net market value of goods and services produced by labor and property supplied by U.S. residents (see the earlier description of GNP). It is equal to GNP minus CFC. It is also equal to NDP minus net income payments to the rest of the world.

Net domestic income (NDI) measures the costs incurred and the incomes earned in the production of NNP. It is equal to NNP minus the statistical discrepancy. It is also equal to GDI minus CFC.

National income is the sum of all net incomes earned in production (and thus it could also be termed "net national income"). It is equal to GNI minus CFC, NNP minus the statistical discrepancy, and NDI minus net income payments to the rest of the world. It is also equal to the sum of compensation of employees, proprietors' income with inventory valuation adjustment (IVA) and capital consumption adjustment (CCAdj), rental income with CCAdj, corporate profits with IVA and CCAdj, net interest and miscellaneous payments, taxes on production and imports less subsidies, business current transfer payments (net), and current surplus of government enterprises.

The following are several other important NIPA aggregates.

Personal income is the income that persons receive in return for their provision of labor, land, and capital used in current production, plus current transfer receipts less contributions for government social insurance (domestic).[26] Personal income is equal to national income minus corporate profits with IVA and CCAdj, taxes on production and imports less subsidies, contributions for government social insurance, net interest and miscellaneous payments on assets, business current transfer payments (net), and current surplus of government enterprises, plus personal income receipts on assets and personal current transfer receipts.[27]

---

[26] "Persons" consists of households, nonprofit institutions that primarily serve households, private noninsured welfare funds, and private trust funds.

[27] For more information, see *State Personal Income and Employment: Concepts, Data Sources, and Statistical Methods* on BEA's website at www.bea.gov.

Gross domestic purchases is the market value of goods and services purchased by U.S. residents, regardless of where those goods and services were produced. It is equal to GDP minus net exports. It is also equal to the sum of PCE, gross private domestic investment, and government consumption expenditures and gross investment.

Final sales of domestic product is equal to GDP less change in private inventories. It is also equal to the sum of PCE, gross private fixed investment, government consumption expenditures and gross investment, and net exports of goods and services.[28]

Final sales to domestic purchasers is equal to gross domestic purchases less change in private inventories. It is also equal to the sum of PCE, gross private fixed investment, and government consumption expenditures and gross investment.

Final sales to private domestic purchasers is equal to final sales to domestic purchasers less government consumption expenditures and gross investment. It is also equal to the sum of PCE and private fixed investment. As this measure excludes the more volatile components of GDP, such as net exports and government spending, it reflects the more persistent movements in spending by consumers and businesses in the United States.[29]

Principal quantity and price measures

The market values and imputations used to measure GDP and the other NIPA estimates are in current dollars—that is, they reflect transactions in terms of their value in the periods in which they take place. Although many technical problems arise in preparing these estimates, measuring the change in current-dollar GDP from one period to the next is conceptually straightforward, because it is the actual change in spending that occurs in the economy between the two time periods.

For many analyses, it is useful to separate the changes in current-dollar GDP that are due to changes in quantity from those that are due to changes in price.[30] However, aggregate quantity change and aggregate price change cannot be observed directly in the economy. Instead, these changes must be calculated, and the calculation method is determined by analytic requirements. In the NIPAs, the changes in quantities and prices

---

[28] While analytically useful, the interpretation of final sales of domestic product is complicated by the fact that additions to inventories come from both domestic production and imports. Source data are not available to distinguish the portion of imported goods that flows into inventories from the portion that is sold directly, so the measure does not, strictly speaking, identify the sales from domestic product.

[29] This measure was introduced as part of the 2015 annual update of the NIPAs; see Stephanie McCulla and Shelly Smith, "Preview of the 2015 Annual Revision of the National Income and Product Accounts," *Survey* 95 (June 2015): 1-8.

[30] In this separation, changes in the quality of the goods and services provided are treated as changes in quantity; BEA uses quality-adjusted price indexes to deflate goods and services to yield quantity estimates; these indexes are described in the appendix to chapter 4 of this handbook.

are computed from chain-type indexes that are calculated using a Fisher formula. (For a discussion of the statistical methods used to prepare these measures, see "Chapter 4: Estimating Methods.")

In the NIPAs, the featured measure of growth in the U.S. economy is the *percent change in real GDP*—that is, the quantity-change measure for GDP from one period to another.[31] Thus, changes in real GDP provide a comprehensive measure of economic growth that is free of the effects of price change.

In the NIPAs, the featured measure of inflation in the U.S. economy is the *percent change in the price index for gross domestic purchases*. This index measures the prices of goods and services purchased by U.S. residents, regardless of where the goods and services were produced. It is derived from the prices of PCE, gross private domestic investment, and government consumption expenditures and gross investment. Thus, for example, an increase in the import price of a foreign-produced car would raise the prices paid by U.S. residents and thereby directly affect the price index for gross domestic purchases.[32]

Another aggregate price measure is the GDP *price index*, which measures the prices of goods and services produced in the United States. In contrast to the price index for gross domestic purchases, the GDP price index would not be directly affected by an increase in the import price of a foreign-built car, because imports are not included in GDP.

Another important NIPA price measure is the *PCE price index*, which measures the prices paid for the goods and services purchased by "persons." This index is frequently compared with the consumer price index, which is produced by the Bureau of Labor Statistics. The two indexes are similar, but there are differences in terms of coverage, weighting, and calculation.[33]

Further, BEA provides variants of the above price indexes that exclude their particularly volatile food and energy components. These variants are sometimes used to indicate the "core inflation" in the U.S. economy.

BEA publishes several aggregate measures of real income as counterparts to its aggregate measures of real production. *Real GDI* is calculated as current-dollar GDI deflated by the implicit price deflator (IPD) for GDP; *real GNI* is calculated as current-

---

[31] Until 1991, GNP was the featured measure of U.S. production; see "Gross Domestic Product as a Measure of U.S. Production," *Survey* 71 (August 1991): 8.

[32] This example assumes the entire price increase is passed on to the car buyer—that is, the wholesale or retail margins are unchanged.

[33] See Clinton P. McCully, Brian C. Moyer, and Kenneth J. Stewart, "Comparing the Consumer Price Index and the Personal Consumption Expenditures Price Index," *Survey* 87 (November 2007): 26–33.

dollar GNI deflated by the IPD for GNP; and *real net domestic income* is calculated as current-dollar net domestic income deflated by the IPD for net domestic product.[34]

In addition, BEA prepares alternative measures of real GDP and real GNP that measure the real purchasing power of the income generated from the production of the goods and services by the U.S. economy. These measures, which in the NIPAs are called *command-basis GDP* and *command-basis GNP*, reflect the impact of changes in the terms of trade as well as changes in production (BEA also prepares alternative command-basis measures of NNP and NDP).[35] In calculating command-basis GDP, exports and imports of goods and services are each deflated by the price index for gross domestic purchases to yield exports on a command-basis and imports on a command basis; then, command-basis exports are added to, and command-basis imports are subtracted from, real gross domestic purchases.[36] The calculation of command-basis GNP is the same, except income receipts from the rest of the world are deflated along with exports, and income payments to the rest of the world are deflated along with imports.[37] In effect, the calculations are the same as deriving command-basis GDP (GNP) by deflating current-dollar GDP (GNP) by the price index for gross domestic purchases. Thus, the command-basis measures are alternative measures of real GDP and real GNP that reflect the prices of <u>purchased</u> goods and services, while the primary measures of real GDP and real GNP reflect the prices of <u>produced</u> goods and services.

BEA also prepares several measures that show the relationship between the prices that are received by U.S. producers and the prices that are paid by U.S. purchasers. The broadest measure, the *trading gains index*, is the ratio of the GDP price index to the price index for gross domestic purchases. An increase (decrease) in this ratio would indicate an increase (decrease) in the purchasing power of the income generated in producing GDP. Successively narrower measures specifically focus on the relationship between the prices of the U.S. goods and services that are produced for consumption by the rest of the world and the prices of the goods and services that are produced by the rest of the world for U.S. consumption. The *terms of trade index*, is the ratio of the price index for exports of goods and services to the price index for imports of goods and services; ratios for the terms of trade in goods and in nonpetroleum goods are also prepared. Movements in these trading indexes reflect the interaction of several factors—including movements in exchange rates, changes in the composition of traded goods and services, and changes in producers' profit margins.

---

[34] Implicit price deflators for an aggregate or component are calculated as the ratio of the current-dollar value to the corresponding chained-dollar value, multiplied by 100 (see the section "Chained-dollar measures" in chapter 4).

[35] In the SNAs, these measures are referred to as real GDI and real GNI. However, as noted in the preceding paragraph, BEA uses a different method to derive those aggregates.

[36] In this case, adding and subtracting these estimates is acceptable because all three aggregates are derived using the same deflator.

[37] This methodology for calculating the command-basis aggregates was introduced in the 2010 annual update of the NIPAs; see Eugene P. Seskin and Shelly Smith, "Annual Revision of the National Income and Product Accounts," *Survey* 90 (August 2010): 21. For additional technical and historical background, see Marshall B. Reinsdorf, "Terms of Trade Effects: Theory and Measurement," *Review of Income and Wealth* 56 (June 2010): S177-S205.

In addition, BEA provides statistical measures that supplement the current-dollar, quantity-index, and price-index measures. Foremost among these are measures of the contributions of major components to the percent change from the preceding year or quarter in real GDP, in other principal product-side aggregates, in GDP prices, and in gross domestic purchases prices. BEA also provides measures of the percentage shares of current-dollar GDP and GDI that are accounted for by their major components.

Classification

The application of common classification systems for the NIPAs, and for all of the U.S. economic accounts, is extremely important because classification provides the structure necessary to prepare and present the estimates uniformly and consistently. Further, common classifications enable users to effectively compare and analyze data across the broad spectrum of economic statistics.

In the NIPAs, the estimates of production and expenditures may be classified by sector, by type of product, and by function, while the estimates of income may be classified by industry and by legal form of organization.

Sector

For measuring domestic production in the NIPAs, the contribution, or value added, of various institutions can be broken down into three distinct groups, or sectors—business, households and institutions, and general government (table 2.1). A fourth sector, referred to as "the rest-of-the-world," covers transactions between U. S. residents and foreign residents.

Table 2.1—Gross Value Added by Sector

Gross domestic product
Business
Nonfarm
Farm
Households and institutions
Households
Nonprofit institutions serving households
General government
Federal
State and local
Note. Adapted from NIPA table 1.3.1.

Business: The business sector comprises all corporate and noncorporate businesses that are organized for profit, other entities that produce goods and services for

sale at a price that is based on the costs of production, and certain other entities that are treated as businesses in the NIPAs. These other entities include mutual financial institutions, noninsured pension funds, cooperatives, nonprofit organizations (that is, entities classified as nonprofit by the Internal Revenue Service in determining income tax liability) that primarily serve business, federal reserve banks, federally sponsored credit agencies, and government enterprises. The gross value added of the business sector is measured as GDP less the gross value added of households and institutions and of general government.[38]

Households and institutions: The households and institutions sector comprises households (families and unrelated individuals) and nonprofit institutions serving households (NPISHs). The gross value added of households is measured by the services of owner-occupied housing and the compensation paid to domestic workers. The gross value added of NPISHs is measured by the compensation paid to the employees of these institutions, the rental value of fixed assets owned and used by these institutions, and the rental income of persons for tenant-occupied housing owned by these institutions.[39]

General government: The general government sector comprises all federal government and state and local government agencies except government enterprises. The gross value added of general government is measured as the sum of the compensation of the employees of these agencies and of their consumption of fixed capital.

Type of product

In the NIPAs, classifications by type of product—goods, services, and structures—are presented for GDP and for the components of final sales of domestic product (table 2.2).[40]

Table 2.2—Gross Domestic Product by Major Type of Product

Gross domestic product
Final sales of domestic product
Change in private inventories
Goods
Final sales
Change in private inventories
Durable goods
Final sales

---

[38] Measures of gross value added for financial and for nonfinancial corporations are also shown in the NIPA tables. They are calculated based on the costs incurred and the incomes earned from production.

[39] For more information on NPISHs, see the technical note in Chapter 5 of this handbook.

[40] The North American Product Classification System (NAPCS), the commodity counterpart to the North American Industry Classification System (see the section "Industry") is an integrated and comprehensive list of products, product definitions, and product codes organized using a demand-side, market-oriented classification framework for both goods and services. For more information about the system, which has been developed by the United States, Canada, and Mexico in a series of phases, see the Census Bureau website at www.census.gov.

Change in private inventories
Nondurable goods
Final sales
Change in private inventories
Services
Structures
Note. Adapted from NIPA table 1.2.1.

Goods consists primarily of tangible products that can be stored or inventoried, but this category also includes certain intangibles, such as intellectual property products.

Services are products, such as medical care, that cannot be stored and are usually consumed at the place and time of their purchase. Government consumption expenditures, which are for services produced by government, are included in this category.[41] By convention, goods purchased by U.S. residents abroad are also included.

Structures are products—such as commercial buildings, highways, dams, and single-family houses—that are usually constructed at the location where they will be used and that typically have long economic lives.

Function

"Functional" classifications identify the purposes or objectives for which expenditures are made. In the NIPAs, functional breakdowns of expenditures are provided for PCE and for government expenditures.

For PCE, expenditures by function are classified into the following broad categories (table 2.3).[42] These classifications are largely consistent with the SNA "Classification of Individual Consumption by Purpose" (COICOP).[43]

Table 2.3—Personal Consumption Expenditures by Function

Personal consumption expenditures
Food and beverages purchased for off-premises consumption
Clothing, footwear, and related services
Housing, utilities, and fuels
Furnishings, household equipment, and routine household maintenance
Health

---

[41] The value of these services, most of which are not sold in the market, is measured by the cost of inputs: compensation, CFC, and purchased goods and services less own-account investment and sales to other sectors (which are reflected in other final expenditures components, such as PCE).

[42] This classification was introduced in the 2009 comprehensive update; see Clinton P. McCully and Teresita D. Teensma, "Preview of the 2009 Comprehensive Revision of the National Income and Product Accounts: New Classifications for Personal Consumption Expenditures," *Survey* 88 (May 2008): 6–17.

[43] McCully and Teensma, 14.

Transportation
Communication
Recreation
Education
Food services and accommodations
Financial services and insurance
Other goods and services
Net foreign travel and expenditures abroad by U.S. residents
Final consumption expenditures of nonprofit institutions serving households
Note. Adapted from NIPA table 2.5.5.

The functional classifications for government are largely consistent with the SNA "Classification of the Functions of Government" (COFOG).[44] For the federal government, expenditures are classified into nine categories, and for state and local governments, expenditures are classified into eight categories (national defense is omitted) (table 2.4).

Table 2.4—Government Consumption Expenditures and Gross Investment by Function

Government
General public service
National defense
Public order and safety
Economic affairs
Housing and community services
Health
Recreation and culture
Education
Income security
Note. Adapted from NIPA table 3.15.5.

Industry

The North American Industry Classification System (NAICS) is the official industry classification system for the United States.[45] NAICS was developed during the 1990s through a collaborative effort by the United States, Canada, and Mexico to facilitate better comparisons of the economies of the three countries.[46] Prior to the

---

[44] See Karl Galbraith, "Government Spending by Function: A New Presentation," *Survey* 80 (June 2000): 18–23. See also Bruce E. Baker, Pamela A. Kelly, and Brooks B. Robinson, "Estimates of Real Government Consumption Expenditures and Gross Investment by Function," *Survey* 84 (October 2004): 5–10 and also see SNA 2008: 9.99.

[45] See *North American Industry Classification System, United States, 2017*, available on the Census Bureau website at www.census..

[46] For information of the development and implementation of NAICS, see John Kort, "The North American Industry Classification System in BEA's Accounts," *Survey* 81 (May 2001): 7–13.

adoption of NAICS, most U.S. statistics were based on the Standard Industrial Classification (SIC).[47] The SIC system, which was initially developed in the late 1930s, was concentrated in manufacturing, which dominated the U.S. economy at that time. The switch from the SIC to NAICS provided more detailed classifications for services industries and for high-tech industries. Moreover, by organizing establishments based on their production methods rather than on the products they produced, NAICS provided a better conceptual basis for industrial classification.

NAICS was introduced into the national economic accounts in late 2002 with the release of the 1997 benchmark I-O accounts, which were based on the 1997 Economic Census. Effective with the 2003 comprehensive update, NAICS became the industry classification system for the NIPAs.

In the NIPAs, industrial distributions are presented for national income and most of its components, capital consumption allowances, employment and hours, and the change in private inventories and the stock of private inventories (see, for example, table 2.5 below).[48] For income and employment, the classification of the estimates for 1998 forward is based on NAICS; for inventories, the classification of the estimates for the first quarter of 1997 forward is based on NAICS. In general, the estimates by industry before these dates are on a SIC basis.[49]

Industrial distributions of government activities are not provided; instead, they are combined into a single category. For most series, separate estimates are shown for the activities of the federal government, of state and local governments, and of government enterprises.

Table 2.5—National Income Without Capital Consumption Adjustment by Industry

National income without capital consumption adjustment
Domestic industries
Private industries
Agriculture, forestry, fishing, and hunting
Mining
Utilities
Construction
Manufacturing
Durable goods
Nondurable goods
Wholesale trade

---

[47] See Office of Management and Budget, Statistical Policy Division, *Standard Industrial Classification Manual, 1987* (Washington, DC: U.S. Government Printing Office (GPO), 1988); Office of Management and Budget, Statistical Policy Division, *Standard Industrial Classification Manual,1972* (Washington, DC: GPO, 1972); and Bureau of the Budget, *Standard Industrial Classification Manual,1942* (Washington, DC: GPO, 1942).

[48] An industrial distribution of fixed investment based on data collected from establishments is prepared as part of the procedure used to estimate fixed assets. For further information, see "*Fixed Assets and Consumer Durable Goods in the United States, for 1925–97,*" September 2007 on BEA's website at www.bea.gov.

[49] NAICS-based estimates for GDP by industry and for fixed assets are available for earlier periods.

Retail trade
Transportation and warehousing
Information
Finance, insurance, real estate, rental, and leasing
Professional and business services
Educational services, health care, and social assistance
Arts, entertainment, recreation, accommodation, and food services
Other services, except government
Government
Rest of the world
Note. Adapted from NIPA table 6.1D.

The industrial distributions for wages and salaries and for inventories are generally based on data collected from "establishments," while those for the other NIPA components are generally based on data collected from "companies" (also called "enterprises," or "firms"). Companies consist of one or more establishments owned by the same legal entity or group of affiliated entities. Establishments are economic units, generally at a single physical location, where business is conducted or where services or industrial operations are performed (for example a factory, mill, store, hotel, movie theater, mine, farm, airline terminal, sales office, warehouse, or central administrative office). Establishments are classified into an industry on the basis of their principal production method, and companies are classified into an industry on the basis of the principal industry of all their establishments. Because large multi-establishment companies typically contain establishments that are classified in different industries, the industrial distribution of the same economic activity on an establishment basis can differ significantly from that on a company basis. For example, the measure of corporate profits by steel-manufacturing companies will include the profits of establishments that do not manufacture steel but are part of companies that are classified as steel-manufacturing companies. Similarly, this measure will exclude the profits of establishments that manufacture steel but are part of companies that are not classified as steel-manufacturing companies.

Moreover, individual industry series are not fully comparable over time. First, the composition of industries may change because of revisions to NAICS or to the SIC. This factor affects estimates based on establishment data and on company data. Second, historical comparability may be affected by a change over time in the industrial classification of the same establishment or company. For example, the classification of a company may change as a result of shifts in the level of consolidation of entities for which company reports are filed or as a result of mergers and acquisitions. This factor affects company-based estimates much more than establishment-based estimates. As noted above, there is a break in 1998 between SIC and NAICS classifications for NIPA estimates of income and employment and in 1997 for NIPA estimates of inventories. Moreover, while the NAICS-based NIPA estimates are periodically updated to reflect the most recent NAICS categories (currently 2012), the estimates are bridged to, and largely presented on, the 1997 NAICS structure to avoid repeated changes to the NIPA presentation.

In addition, some NIPA tables show the following special industry groupings:

Financial industries consists of the NAICS industry "Finance and insurance" and of "Offices of bank holding companies" and "Offices of other holding companies" in the NAICS industry "Management of companies and enterprises." Finance and insurance consists of Federal Reserve banks; credit intermediation and related activities; securities, commodity contracts, and investments; insurance carriers and related activities; and funds, trusts, and other financial vehicles.

Nonfinancial industries consists of all other private industries.

Private goods-producing industries consists of the following NAICS divisions: agriculture, forestry, fishing, and hunting; mining; construction; and manufacturing.

Private services-producing industries consists of the following NAICS divisions: utilities; wholesale trade; retail trade; transportation and warehousing; information; finance and insurance; real estate and rental and leasing; professional, scientific, and technical services; management of companies and enterprises; administrative and waste management services; educational services; health care and social assistance; arts, entertainment, and recreation; accommodation and food services; and other services, except government.

Legal form of organization

For the domestic business sector in the NIPAs, classification by legal form of organization is shown for national income and its components. Legal forms of organization are based on IRS filing requirements for corporate business and for noncorporate business, which comprises sole proprietorships and partnerships, other private business, and government enterprises (employee compensation and current surplus of enterprises) (table 2.6).

Table 2.6—National Income by Legal Form of Organization

National income
Domestic business
Corporate business
Noncorporate business
Sole proprietorships and partnerships
Other private business
Government enterprises
Households and institutions
General government
Rest of the world
Note. Adapted from NIPA table 1.13.

Corporate business: This legal form comprises all entities required to file federal corporate tax returns, Internal Revenue Service (IRS) Form 1120 series. It includes mutual financial institutions and cooperatives subject to federal income tax, private noninsured pension funds, nonprofit institutions that primarily serve business, Federal Reserve banks, and federally sponsored credit agencies.

Sole proprietorships: This legal form comprises all entities that are required to file IRS Schedule C (Profits or Loss from Business) or Schedule F (Farm Income and Expenses) or that would be required to file if the proprietor met the filing requirements.

Partnerships: This legal form comprises all entities that are (or would be) required to file federal partnership income tax returns, IRS Form 1065 (U.S. Partnership Return of Income).

Other private business: This legal form comprises (1) all entities that are (or would be) required to report rental and royalty income on IRS Schedule E (Supplemental Income and Loss) of the individual income tax return and (2) tax-exempt cooperatives.

Government enterprises: This legal form consists of government agencies that cover a substantial proportion of their operating costs by selling goods and services to the public and that maintain their own separate accounts. For example, the U.S. Postal Service is a federal government enterprise, and public water and sewage agencies are local government enterprises.

Accounting Framework

The NIPAs consist of a set of integrated accounts that provide statistics on the output of the U.S. economy. The NIPA accounting framework is designed to provide context for these statistics, so that they are presented logically, consistently, and according to established economic-accounting principles and standards. The NIPAs are generally consistent with the SNA, which now serves as the internationally accepted set of guidelines for the compilation of national accounts.[50]

For an in-depth discussion of the conceptual framework of the NIPAs and the NIPA summary accounts and of the underlying accounting principles and common financial statements, see U.S. Bureau of Economic Analysis, *An Introduction to the National Income and Product Accounts,* Methodology Paper No. 1 (updated), September 2007.[51] The definitions of the line items that make up the seven summary accounts are

---

[50] See Stephanie H. McCulla, Karin E. Moses, and Brent R. Moulton, "The National Income and Product Accounts and the System of National Accounts 2008: Comparison and Research Plans," *Survey* 95 (June 2015): 1-17, and see Charles Ian Mead, Karin E. Moses, and Brent R. Moulton, "The NIPAs and the System of National Accounts," *Survey* 84 (December 2004): 17–32.
[51] "An Introduction to the National Income and Product Accounts," available at www.bea.gov.

presented in the appendix to this Handbook, "Summary National Income and Product Accounts."

Accounting principles

Double-entry bookkeeping is one of the most fundamental principles used in economic accounting and in financial accounting. In financial accounting, activities that affect the resources available to a business are recorded at least once as a source of financing (credit) and at least once as a use of financing (debit). Thus, double-entry bookkeeping provides a means to validate the accounting entries, because the sum of the entries on each side of an account must be equal. In national economic accounting, each transaction is recorded as a payment by one sector and as a receipt by the same sector or by another sector—for example corporate income tax is a payment by a corporation and a receipt of the government.[52] In addition to providing a means to validate entries, this system also provides alternative ways to calculate a measure when complete information is not available for one of the sectors.

The accrual-accounting method is another principle important to both financial and economic accounting. This method is generally used to ensure that related revenues and expenses are recorded in the same accounting period. In accrual accounting, revenues are recorded when they are earned, and expenses are recorded when they are incurred, regardless of when the cash is actually received or paid. The accrual-accounting method may be contrasted to the cash-accounting method, which records revenues when cash is received and expenses when cash is paid.

Financial accounting and economic accounting generally apply different principles in valuing transactions. In financial accounting, assets (and depreciation) are commonly valued at historical costs—that is, at the prices relevant at the time of the acquisition; subsequent changes in the value of these assets are ignored. In economic accounting, assets (and depreciation) are valued at current costs—that is, at the market prices that prevail at the time they are valued. In preparing the NIPAs, various adjustments, such as the inventory valuation adjustment and the capital consumption adjustment, are made so that the estimates will reflect current costs rather than historical costs.

Conceptual derivation of the NIPAs

The NIPAs represent consolidations of the production, the income and outlay, and the saving and investment accounts for each sector of the economy (business, households,

---

[52] A fully articulated set of national accounts (showing payments and receipts by all sectors) actually leads to a quadruple-entry system (in which each transaction is recorded as a debit and a change in assets for one sector and as a credit and a change in assets for another sector). However, transactions are usually recorded only twice in the NIPAs because the changes in assets or liabilities that are associated with the changes in revenues or expenses are recorded in the Federal Reserve Board's flow of funds accounts.

government, and foreign). These sector accounts, in turn, represent aggregations of the accounts belonging to individual transactors in the economy, regardless of whether formal accounting statements exist explicitly for all of them.

Specifically, for each sector, the *production account* records the value of the production that is attributable to that sector and the uses of the income arising from that production. The *income and outlay account* records the sources of the sector's income, its current outlays, and its saving. The *saving and investment* account (also known as the capital account) records the sector's gross saving and gross investment, where gross investment is net acquisitions of assets less net increase in liabilities.

Chart 2.3 illustrates the relationship between the summary NIPAs and the underlying production, income and outlay, and saving and investment accounts for the sectors of the economy.

Chart 2.3—NIPA Summary Accounts

Transactions	Domestic accounts			Rest of the world
	Economic sectors			
	Business	Government	Personal	
Production	Domestic income and product account (Account 1)			Foreign transactions current account (Account 5)
Income and outlay	Private enterprise income (Account 2)	Government current receipts and expenditures (Account 4)	Personal income and outlay (Account 3)	
Saving and investment	Domestic capital account (Account 6)			Foreign transactions capital account (Account 7)

The NIPA summary "domestic income and product account" represents a consolidation of the production accounts for business, households and institutions, and general government.

The income and outlay accounts for the sectors are shown in three separate summary accounts. Income and outlays for the personal sector, including income accruing to unincorporated businesses, are shown in the "personal income and outlay account." Income and outlays for the government sector, including income accruing to government enterprises, are shown in the "government current receipts and expenditures account. Income and outlays for business enterprises and for households and institutions in their role as producers are shown in the "private enterprise income account." In order to provide analytically useful aggregates associated with all private business, the coverage in this account includes the income and outlays of unincorporated businesses as well as those of corporate businesses.

The saving and investment accounts are consolidated into a single summary "domestic capital account." For saving, a breakdown by sector is shown for corporate, personal, and government saving. For investment, because of source data limitations, the breakdown is shown for private fixed and inventory investment and for government fixed investment.

The transactions for the foreign (or rest-of-the-world) "sector"—that is, transactions between U.S. residents and foreign residents—are shown separately in two summary accounts. Current receipts and expenditures, such as exports and imports of goods and services, are shown in the "foreign transactions current account," and capital transactions, such as capital transfers, are shown in the "foreign transactions capital account."

The summary NIPAs

The seven summary NIPAs constitute the accounting framework for presenting the value of production, distribution, consumption, and saving for the U.S. economy.[53] (For definitions of all of the line entries in these tables, and to see the tables themselves, see the appendix to this handbook.) Each of the entries in a summary account also appears again in that account or in one of the other summary accounts; most of these entries are also shown in one or more of the tables that make up the full set of NIPA tables. For example, the item "supplements to wages and salaries" is shown in line 5 of summary account 1 and in line 14 of summary account 3; it is also shown in line 8 of NIPA table 1.10 and in line 6 of NIPA table 2.1.

Taken together, the summary accounts constitute a double-entry system in which a use (or expenditure) recorded in one account for one sector is also recorded as a source (or receipt) in an account of another sector or of the same sector. This system of integrated, double-entry accounts provides a comprehensive measure of economic activity in a consistently defined framework without double-counting. Thus, the NIPAs, in combination with BEA's industry, wealth, and other economic accounts, can be used to trace the principal economic flows among the major sectors of the economy.

Account 1: Domestic Income and Product Account

This account represents an aggregation of the underlying production accounts for the domestic sectors of the U.S. economy. The right (product) side of the account shows GDP measured as the sum of goods and services sold to final users rather than as the sum of value-added by the sectors. The left (income) side of the account shows GDP as

---

[53] Prior to the 2003 comprehensive update, the NIPAs were summarized in five accounts, as shown in table A on pages 38–39 of the August 2002 *Survey*. For a discussion of the differences between the old and new summary accounts, see Nicole Mayerhauser, Shelly Smith, and David F. Sullivan, "Preview of the 2003 Comprehensive Revision of the National Income and Product Accounts: New and Redesigned Tables," *Survey* 83 (August 2003): 8–15.

measured by the incomes earned in production—GDI—plus the "statistical discrepancy" (the difference between GDP and GDI). Product and income are both presented on a domestic basis—that is, they are produced by labor and property located in the United States.

Account 2: Private Enterprise Income Account

This account presents information on the sources and uses of the income of private businesses and other private enterprises.[54] It combines the accounts of private businesses, of homeowners for owner-occupied housing (which is treated as if it were a business), and of NPISHs.

Sources of private enterprise income—such as income receipts on assets and net operating surplus—are shown on the right side of the account.[55] The left side of the account shows the uses of income as income payments on assets (such as holders of financial liabilities and equity claims of other businesses), business current transfer payments, and income that accrues to the owners of business (namely proprietors' income, rental income of persons, and corporate profits). Corporate profits, a widely used measure in the United States, is distributed to government (taxes on corporate income) and to shareholders (net dividends) or is retained (undistributed profits, which can be thought of as a measure of corporate saving).

Account 3: Personal Income and Outlay Account

This account shows the sources and uses of income received by persons—that is, households, NPISHs, private noninsured welfare funds, and private trust funds. The right side of the account shows the sources of personal income—such as employee compensation and interest and dividend income. The left side shows personal taxes and outlays and personal saving, which is derived as personal income minus personal taxes and outlays.

Account 4: Government Receipts and Expenditures Account

This account summarizes the combined transactions of the federal government and of the state and local governments. The right side of the account shows government current receipts—such as tax receipts from persons and contributions for government social insurance. The left side shows government current expenditures—such as compensation of government employees and transfer payments to persons—and net saving, which is derived as current receipts less current expenditures.

---

[54] Government enterprises are not included in account 2, because complete estimates on sources and uses of government enterprise income, notably the income payments and income receipts on assets, are not currently available. The sources and uses of government enterprise income are included, but not separately identified, in the government receipts and expenditures account.

[55] Summary account 2 presents the components of private enterprise income on a national basis—that is, for income accruing to U.S. residents. Consequently, for the net operating surplus to be shown in account 2 on a domestic basis consistent with summary account 1, several components showing income flows to and from the rest of the world are added to account 2.

Account 5: Foreign Transactions Current Account

This account summarizes all the current transactions between the United States and the rest of the world. It presents information on receipts and payments associated with foreign trade, income receipts and payments, and current taxes and other transfer payments. This account does not include transactions involving the acquisition or disposal of nonproduced nonfinancial assets nor capital transfers, which are shown in the foreign transactions capital account, nor does it include transactions in financial assets and liabilities. The left side of this account shows current receipts from the rest of the world—mainly exports of goods and services, income receipts on assets, and current taxes, contributions for government social insurance, and transfer receipts from the rest of the world. The right side shows current payments to the rest of the world—mainly imports of goods and services, income payments on assets, and current taxes and transfer payments to the rest of the world. In addition, it includes the balance on current account, which is derived as current receipts less current payments.

Account 6: Domestic Capital Account

This account presents information on saving and investment for the economy. The right side of the account shows gross saving and the statistical discrepancy. Given the theoretical equality between GDP and GDI, the statistical discrepancy can be viewed as actual (positive or negative) income that is not captured by the data used to measure GDI and, therefore, not distributed to the sectors; instead, it is shown as a source of (positive or negative) saving in this account. The left side of the account shows gross domestic investment, capital-account transactions (net), and net lending or net borrowing, which is derived as gross saving and the statistical discrepancy minus gross domestic investment and capital-account transactions (net).

Account 7: Foreign Transactions Capital Account

This account presents information on transactions between the United States and the rest of the world that involve the acquisition or disposition of nonproduced nonfinancial assets and capital transfers. The left side of the account shows the balance on current account. The right side shows capital-account transactions (net) and net lending or borrowing, which is derived as the balance on current account minus capital-account transactions (net).