

# A Guide to the NIPA's

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**T**HIS GUIDE presents information on the structure, definitions, presentation, and methodologies that underlie the national income and product accounts (NIPA's). This information is from the forthcoming publication *National Income and Product Accounts of the United States, 1929-94* and includes the "Updated Summary NIPA Methodologies" that was published in the September 1997 issue of the SURVEY OF CURRENT BUSINESS. The information reflects the changes that were introduced in the most recent comprehensive and annual revisions of the NIPA's.

The NIPA's show the composition of production and the distribution of incomes earned in production. Thus, they represent a critical element of the U.S. economic accounts, which are designed to provide a consistent and comprehensive picture of the Nation's economy.

The first section of this article describes the definitions and classifications underlying the NIPA's. The second section discusses the presentation of the NIPA's, and the third section discusses the statistical conventions used for the NIPA estimates. An appendix lists the principal source data and methods used to prepare the estimates of gross domestic product (GDP).

## Definitions and Classifications Underlying the NIPA's

### NIPA entries

The major components of the NIPA's are presented and defined below within the context of the Summary National Income and Product Accounts (see [table A](#) on page 28). The five summary accounts show the composition of production and the distribution of the incomes earned in production. In these accounts, production consists of the goods, services, and structures that are produced in the current period. Production, or "current production," and its related incomes do not include gains or losses from the sale of nonproduced assets, such as land, or of financial assets, such as stocks and bonds. In

addition, production does not include gains or losses from holding goods in inventories.

The first summary account is the National Income and Product Account: The right side shows GDP as measured by the sum of goods and services produced in the United States and sold to final users, and the left side shows GDP as measured by the incomes earned in production (gross domestic income) and the "statistical discrepancy" between the two measures. Each of the components in this summary account can be mapped to one of the other summary accounts and can, in turn, be mapped to one or more of the 142 tables that make up the full set of NIPA tables. This system of integrated, double-entry accounts provides a comprehensive and unduplicated measure of economic activity within a consistently defined framework.<sup>1</sup> Thus, the NIPA's—together with the industry, wealth, and regional accounts—can be used to trace the principal economic flows among the major sectors of the economy.

Within the summary accounts, each entry has a counterentry, generally in another account. The parenthetical numbers that follow an entry in [table A](#) identify the counterentry by account and line number. Except for the major income and product aggregates, the entries are usually defined in the sequence in which they appear in the five-account summary.

The definition of a component is not repeated for the counterentry, but a cross-reference is made to the first appearance of the definition. After the components in the five-account-summary are defined, the following other definitions are presented: Final sales of domestic product, gross domestic purchases, final sales to domestic purchasers, population, personal saving as a percentage of disposable personal income, gross saving as a percentage of gross national

1. For more information on the concepts underlying the accounts, see Allan H. Young and Helen Stone Tice, *An Introduction to National Economic Accounting*, NIPA Methodology Paper No. 1 (1985); and Carol S. Carson, *GNP: An Overview of Source Data and Estimating Methods*, NIPA Methodology Paper No. 4 (1987). For information on the availability of these papers, see the box "Information About NIPA Methodology."

product, U.S. residents, foreign residents, and the rest of the world.

### Major aggregates

**Gross domestic product (GDP)**, the featured measure of U.S. output, is the market value of the goods and services *produced by labor and property located in the United States*. Because the labor and property are located in the United States, the suppliers (that is, the workers and, for property, the owners) may be either U.S. residents or residents of the rest of the world.

**Gross domestic income (GDI)** (1–34) measures output as the costs incurred and the incomes earned in the production of GDP. In theory, GDP should equal GDI, but in practice, they differ because their components are estimated using

largely independent and less-than-perfect source data. This difference is termed the “statistical discrepancy” (see [page 34](#)).

**Gross national product (GNP)** is the market value of the goods and services *produced by labor and property supplied by U.S. residents*. Because the labor and property are supplied by U.S. residents (see [page 36](#)), they may be located either in the United States or abroad. The difference between GDP and GNP is net receipts of factor income from the rest of the world. These net receipts represent income from the goods and services produced abroad using the labor and property supplied by U.S. residents less payments to the rest of the world for the goods and services

*Text continues on page 30.*

## Information About NIPA Methodology

As part of each comprehensive and annual revision of the NIPA's, BEA publishes a summary description of the principal source data and methods used to prepare the current-dollar and real estimates of gross domestic product. The most recent “Updated Summary NIPA Methodologies” was published in the September 1997 issue of the SURVEY OF CURRENT BUSINESS and is reprinted as an appendix in this article.

BEA has also prepared a series of papers that discuss the concepts that underlie the NIPA's and that present detailed descriptions of the methodologies used to prepare the NIPA estimates.<sup>1</sup> Note, however, that the methodologies described in these papers are subject to periodic improvements, usually as part of the annual and comprehensive revisions of the NIPA estimates. These improvements—which consist of changes in definitions and in source data, the incorporation of new source data, and the use of new estimating methods—are described in the SURVEY. For example, two major improvements were the shift to gross domestic product as the featured measure of U.S. production and the introduction of a new treatment of government investment.<sup>2</sup>

Copies of the following methodology papers are available from the National Technical Information Service (NTIS).

- *An Introduction to National Economic Accounting*, Methodology Paper No. 1 (1985)—NTIS accession no. PB85-247567, \$12.50

1. For information on the methodology used to prepare the national estimates of personal income, which provide the basis for the State estimates of personal income, see *State Personal Income, 1959–93* (Washington, DC: U.S. Government Printing Office, 1995).

2. See “Gross Domestic Product as a Measure of U.S. Production,” SURVEY 71 (August 1991): 8; and “Preview of the Comprehensive Revision of the National Income and Product Accounts: Recognition of Government Investment and Incorporation of a New Methodology for Calculating Depreciation,” SURVEY 75 (September 1995): 33–41.

- *Corporate Profits: Profits Before Tax, Profits Tax Liability, and Dividends*, Methodology Paper No. 2 (1985)—NTIS accession no. PB85-245397, \$27.00
- *Foreign Transactions*, Methodology Paper No. 3 (1987)—NTIS accession no. PB88-100649, \$27.00
- *GNP: An Overview of Source Data and Estimating Methods*, Methodology Paper No. 4 (1987)—NTIS accession no. PB88-134838, \$24.50
- *Government Transactions*, Methodology Paper No. 5 (1988)—NTIS accession no. PB90-118480, \$31.50
- *Personal Consumption Expenditures*, Methodology Paper No. 6 (1990)—NTIS accession no. PB90-254244, \$27.00

The results of the most recent comprehensive and annual revisions are published in the following SURVEY articles.

- “Annual Revision of the National Income and Product Accounts: Annual Estimates, 1993–96, and Quarterly Estimates 1993:1–1997:1” (August 1997)
- “Preview of the Comprehensive Revision of the National Income and Product Accounts: BEA's New Featured Measures of Output and Prices” (July 1995)
- “Preview of the Comprehensive Revision of the National Income and Product Accounts: Recognition of Government Investment and Incorporation of a New Methodology for Calculating Depreciation” (September 1995)
- “Preview of the Comprehensive Revision of the National Income and Product Accounts: New and Redesign Tables” (October 1995)
- “Improved Estimates of the National Income and Product Accounts: Results of the Comprehensive Revision” (January/February 1996)
- “Completion of the Comprehensive Revision of the National Income and Product Accounts, 1929–96” (May 1997)

The methodological information on the NIPA's is also available on BEA's Web site at <<http://www.bea.doc.gov>>.

Table A.—Summary National Income and Product Accounts, 1996

[Billions of dollars]

Line		Line	
<b>Account 1.—National Income and Product Account</b>			
1	Compensation of employees .....	36	Personal consumption expenditures (2-3) .....
2	Wage and salary accruals .....	37	Durable goods .....
3	Disbursements (2-7) .....	38	Nondurable goods .....
4	Wage accruals less disbursements (3-8 and 5-5) .....	39	Services .....
5	Supplements to wages and salaries .....	40	Gross private domestic investment (5-1) .....
6	Employer contributions for social insurance (3-16) .....	41	Fixed investment .....
7	Other labor income (2-8) .....	42	Nonresidential .....
8	Proprietors' income with inventory valuation and capital consumption adjustments (2-9) .....	43	Structures .....
9	Rental income of persons with capital consumption adjustment (2-10) .....	44	Producers' durable equipment .....
10	Corporate profits with inventory valuation and capital consumption adjustments .....	45	Residential .....
11	Corporate profits with inventory valuation adjustment .....	46	Change in business inventories .....
12	Profits before tax .....	47	Net exports of goods and services .....
13	Profits tax liability (3-13) .....	48	Exports (4-1) .....
14	Profits after tax .....	49	Imports (4-4) .....
15	Dividends (2-12) .....	50	Government consumption expenditures and gross investment (3-1 and 5-2) .....
16	Undistributed profits .....	51	Federal .....
17	Inventory valuation adjustment .....	52	National defense .....
18	Capital consumption adjustment .....	53	Nondefense .....
19	Net interest (2-15) .....	54	State and local .....
20	<b>National income</b> .....		
21	Business transfer payments .....		
22	To persons (2-19) .....		
23	To the rest of the world (4-9) .....		
24	Indirect business tax and nontax liability (3-14) .....		
25	Less: Subsidies less current surplus of government enterprises (3-7) .....		
26	Consumption of fixed capital (5-7) .....		
27	Private (5-8) .....		
28	Government (5-9) .....		
29	General government (5-10) .....		
30	Government enterprises (5-11) .....		
31	<b>Gross national income</b> .....		
32	Less: Receipts of factor income from the rest of the world (4-2) .....		
33	Plus: Payments of factor income to the rest of the world (4-5) .....		
34	<b>Gross domestic income</b> .....		
35	Statistical discrepancy (5-14) .....		
	<b>GROSS DOMESTIC PRODUCT</b> .....		<b>GROSS DOMESTIC PRODUCT</b> .....
<b>Account 2.—Personal Income and Outlay Account</b>			
1	Personal tax and nontax payments (3-12) .....	7	Wage and salary disbursements (1-3) .....
2	Personal outlays .....	8	Other labor income (1-7) .....
3	Personal consumption expenditures (1-36) .....	9	Proprietors' income with inventory valuation and capital consumption adjustments (1-8) .....
4	Interest paid by persons (2-17) .....	10	Rental income of persons with capital consumption adjustment (1-9) .....
5	Personal transfer payments to the rest of the world (net) (4-7) .....	11	Personal dividend income .....
6	Personal saving (5-4) .....	12	Dividends (1-15) .....
		13	Less: Dividends received by government (3-6) .....
		14	Personal interest income .....
		15	Net interest (1-19) .....
		16	Net interest paid by government (3-5) .....
		17	Interest paid by persons (2-4) .....
		18	Transfer payments to persons .....
		19	From business (1-22) .....
		20	From government (3-3) .....
		21	Less: Personal contributions for social insurance (3-17) .....
	<b>PERSONAL TAXES, OUTLAYS, AND SAVING</b> .....		<b>PERSONAL INCOME</b> .....

See note at end of table.

Table A.—Summary National Income and Product Accounts, 1996—Continued

[Billions of dollars]

Line		Line	
<b>Account 3.—Government Receipts and Expenditures Account</b>			
1	Consumption expenditures (1-50) .....	12	Personal tax and nontax payments (2-1) .....
	1,182.4		886.9
2	Transfer payments .....	13	Corporate profits tax liability (1-13) .....
	1,058.3		229.0
3	To persons (2-20) .....	14	Indirect business tax and nontax liability (1-24) .....
	1,042.0		604.8
4	To the rest of the world (net) (4-8) .....	15	Contributions for social insurance .....
	16.3		692.0
5	Net interest paid (2-16) .....	16	Employer (1-6) .....
	165.4		385.7
6	Less: Dividends received by government (2-13) .....	17	Personal (2-21) .....
	13.6		306.3
7	Subsidies less current surplus of government enterprises (1-25) .....		
	25.4		
8	Less: Wage accruals less disbursements (1-4) .....		
	0		
9	Current surplus or deficit (-), national income and product accounts		
	(5-12) .....		
	-5.1		
10	Federal .....		
	-110.5		
11	State and local .....		
	105.3		
	<b>GOVERNMENT CURRENT EXPENDITURES AND SURPLUS .....</b>		<b>GOVERNMENT RECEIPTS .....</b>
	<b>2,412.7</b>		<b>2,412.7</b>
<b>Account 4.—Foreign Transactions Account</b>			
1	Exports of goods and services (1-48) .....	4	Imports of goods and services (1-49) .....
	870.9		965.7
2	Receipts of factor income (1-32) .....	5	Payments of factor income (1-33) .....
	234.3		232.6
3	Capital grants received by the United States (net) (5-13) .....	6	Transfer payments to the rest of the world (net) .....
	0		39.8
		7	From persons (net) (2-5) .....
			15.9
		8	From government (net) (3-4) .....
			16.3
		9	From business (1-23) .....
			7.6
		10	Net foreign investment (5-3) .....
			-132.9
	<b>RECEIPTS FROM THE REST OF THE WORLD .....</b>		<b>PAYMENTS TO THE REST OF THE WORLD .....</b>
	<b>1,105.1</b>		<b>1,105.1</b>
<b>Account 5.—Gross Saving and Investment Account</b>			
1	Gross private domestic investment (1-40) .....	4	Personal saving (2-6) .....
	1,116.5		239.6
2	Gross government investment (1-50) .....	5	Wage accruals less disbursements (private) (1-4) .....
	224.3		1.1
3	Net foreign investment (4-10) .....	6	Undistributed corporate profits with inventory valuation and capital
	-132.9		consumption adjustments.
		7	Consumption of fixed capital (1-26) .....
			830.1
		8	Private (1-27) .....
			682.7
		9	Government (1-28) .....
			147.4
		10	General government (1-29) .....
			125.1
		11	Government enterprises (1-30) .....
			22.3
		12	Government current surplus or deficit (-), national income and prod-
			uct accounts (3-9).
			-5.1
		13	Capital grants received by the United States (net) (4-3) .....
			0
		14	Statistical discrepancy (1-35) .....
			-59.9
	<b>GROSS INVESTMENT .....</b>		<b>GROSS SAVING AND STATISTICAL DISCREPANCY .....</b>
	<b>1,207.9</b>		<b>1,207.9</b>

NOTE.—Numbers in parentheses indicate accounts and items of counterentry in the accounts. For example, line 3 of account 1 is shown as "Disbursements (2-7)"; the counterentry is shown in account 2, line 7.

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produced in the United States using the labor and property supplied by foreign residents. Factor incomes are measured as compensation of employees, corporate profits (dividends, earnings of unincorporated affiliates, and reinvested earnings of incorporated affiliates), and interest.

*Gross national income* (GNI) (1-31) is the costs incurred and the incomes earned in the production of GNP. GNI is the sum of (1) factor incomes—compensation of employees, proprietors' income, rental income of persons, corporate profits, and net interest; (2) three nonfactor charges—business transfer payments, indirect business taxes, and the current surplus of government enterprises less government subsidy payments; and (3) consumption of fixed capital (CFC), which is the fixed capital "used up" in the production process during the accounting period. GNI and GNP also differ by the statistical discrepancy.

*Net domestic product* (NDP) is the net market value of the goods and services attributable to labor and property located in the United States and is equal to GDP less CFC.

*Net national product* (NNP) is the net market value of goods and services attributable to the labor and property supplied by U.S. residents and is equal to GNP less CFC. The measure of CFC used for both NDP and NNP relates only to fixed capital located in the United States. Investment in the capital is measured by private fixed investment and government gross investment.

*National income* (1-20) is the sum of the factor incomes. It is a net factor-cost measure (net of CFC) equal to the income that originates in the production of goods and services from labor and property supplied by U.S. residents.

*Domestic income*, also a net factor-cost measure, is the income that originates in the production of goods and services attributable to labor and property located in the United States.

*Personal income* is the income received by persons from all sources—that is, from participation in production, from both government and business transfer payments, and from government interest (which is treated like a transfer payment). "Persons" consists of individuals, nonprofit institutions that primarily serve individuals, private noninsured welfare funds, and private trust funds. Personal income is calculated as the sum of wage and salary disbursements, other labor income, proprietors' income with

inventory valuation and capital consumption adjustments, rental income of persons with capital consumption adjustment, personal dividend income, personal interest income, and transfer payments to persons, less personal contributions for social insurance.

*Disposable personal income* is personal income less personal tax and nontax payments. It is the income available to persons for spending or saving.

### *National income and product account*

GDP is measured as the sum of personal consumption expenditures, gross private domestic investment (including change in business inventories and before deduction of charges for CFC), net exports of goods and services (exports less imports), and government consumption expenditures and gross investment. GDP excludes intermediate purchases of goods and services by business.

*Personal consumption expenditures* (1-36) is goods and services purchased by persons resident in the United States. Personal consumption expenditures (PCE) consists mainly of purchases of new goods and of services by individuals from business. In addition, PCE includes purchases of new goods and of services by nonprofit institutions (including compensation of employees), net purchases of used goods by individuals and nonprofit institutions, and purchases abroad of goods and services by U.S. residents.<sup>2</sup> PCE also includes purchases for certain goods and services provided by government agencies—primarily tuition payments for higher education, charges for medical care, and charges for water and sanitary services. Finally, PCE includes imputed purchases that keep PCE invariant to changes in the way that certain activities are carried out—for example, whether housing is rented or owned, whether financial services are explicitly charged, or whether employees are paid in cash or in kind.

The following conventions are used to classify each PCE commodity: *Durable goods* (1-37) are commodities that can be stored or inventoried and that have an average life of at least 3 years; *nondurable goods* (1-38) are all other commodities that can be stored or inventoried; and *services* (1-39) are commodities that cannot be stored and that are consumed at the place and time of purchase.

2. Purchases of fixed assets, including residential structures by individuals and by nonprofit institutions that primarily serve individuals, are classified as gross private domestic investment.

*Gross private domestic investment* (1-40) consists of *fixed investment* (1-41) and *change in business inventories* (1-46). Fixed investment consists of both *nonresidential* (1-42) fixed investment and *residential* (1-45) fixed investment. It consists of purchases of fixed assets, which are commodities that will be used in a production process for more than 1 year, including replacements and additions to the capital stock, and it is measured before a deduction for consumption of fixed capital. It covers all investment by private businesses and by nonprofit institutions in the United States, regardless of whether the investment is owned by U.S. residents. (Purchases of the same types of equipment and structures by government agencies are included in government gross investment.) It excludes investment by U.S. residents in other countries. Nonresidential fixed investment consists of both *structures* (1-43) and *producers' durable equipment (PDE)* (1-44).

Nonresidential structures consists of new construction, brokers' commissions on sales of structures, and net purchases of used structures by private business and by nonprofit institutions from government agencies. New construction also includes hotels and motels and mining exploration, shafts, and wells.

Nonresidential PDE consists of private business purchases on capital account of new machinery, equipment such as furniture, and vehicles (except for personal-use portions of equipment purchased for both business and personal use, which are included in PCE), dealers' margins on sales of used equipment, and net purchases of used equipment from government agencies, from persons, and from the rest of the world.

Residential fixed investment consists of private structures and of residential PDE—equipment owned by landlords and rented to tenants. Investment in structures consists of new units, improvements to existing units, mobile homes, brokers' commissions on the sale of residential property, and net purchases of used structures from government agencies.

*Change in business inventories* (1-46) is the change in the physical volume of goods purchased by private business for use in the production of other commodities or for resale, valued in average prices of the period. It differs from the change in the book value of inventories reported by most business; the difference is the *inventory valuation adjustment* (described on the next page).

*Net exports of goods and services* (1-47) is exports (1-48) less imports (1-49) of goods and

services. Receipts and payments of factor income and transfer payments to the rest of the world (net) are excluded.

*Government consumption expenditures and gross investment* (1-50) consists of net purchases of goods, services, and structures from business and from the rest of the world by general government; payments by general government to households in the form of compensation of employees; the consumption of general government fixed capital, which represents the value of the current services of fixed assets of general government; net purchases of fixed assets by government enterprises; inventory change of government enterprises; and a deduction for general government sales—primarily tuition payments for higher education and charges for medical care. Of this total, gross investment is net purchases of new and used structures and equipment by general government and government enterprises; all other transactions are consumption expenditures. Government consumption expenditures and gross investment excludes purchases by government enterprises (except for fixed assets), transfer payments, interest paid or received by government, subsidies, and transactions in financial assets and in nonproduced assets, such as land.

*Compensation of employees* (1-1) is the income accruing to employees as remuneration for their work. It is the sum of wage and salary accruals and of supplements to wages and salaries.

*Wage and salary accruals* (1-2) consists of the monetary remuneration of employees, including the compensation of corporate officers; commissions, tips, and bonuses; voluntary employee contributions to certain deferred compensation plans, such as 401(k) plans; and receipts in kind that represent income. Wage and salary accruals consists of *disbursements* (1-3) and *wage accruals less disbursements* (1-4). Disbursements is wages and salaries as just defined except that retroactive wage payments are recorded when paid rather than when earned. Accruals less disbursements is the difference between wages earned, or accrued, and wages paid, or disbursed. In the NIPA's, wages accrued is the appropriate measure for national income, and wages disbursed is the appropriate measure for personal income.

*Supplements to wages and salaries* (1-5) consists of employer contributions for social insurance and other labor income. *Employer contributions for social insurance* (1-6) consists of employer payments under the following Federal and State and local government programs: Old-age,

survivors, and disability insurance (social security); hospital insurance; unemployment insurance; railroad retirement; government employee retirement; pension benefit guaranty; veterans life insurance; publicly administered workers' compensation; military medical insurance; and temporary disability insurance. *Other labor income* (1-7) consists of employer payments (including payments in kind) to private pension and profit-sharing plans, private group health and life insurance plans, privately administered workers' compensation plans, supplemental unemployment benefit plans, corporate directors' fees, and several minor categories of employee compensation, including judicial fees to jurors and witnesses, compensation of prison inmates, and marriage fees to justices of the peace.

*Proprietors' income with inventory valuation and capital consumption adjustments* (1-8) is the current-production income (including income in kind) of sole proprietorships and partnerships and of tax-exempt cooperatives. The imputed net rental income of owner-occupants of farm dwellings is included; the imputed net rental income of owner-occupants of nonfarm dwellings is included in rental income of persons (described below). Proprietors' income excludes dividends and monetary interest received by nonfinancial business and rental incomes received by persons not primarily engaged in the real estate business; these incomes are included in dividends, net interest, and rental income of persons. (See "inventory valuation adjustment" and "capital consumption adjustment.")

*Rental income of persons with capital consumption adjustment* (1-9) is the net current-production income of persons from the rental of real property except for the income of persons primarily engaged in the real estate business; the imputed net rental income of owner-occupants of nonfarm dwellings; and the royalties received by persons from patents, copyrights, and rights to natural resources. (See "capital consumption adjustment.")

*Corporate profits with inventory valuation and capital consumption adjustments* (1-10) is the net current-production income of organizations treated as corporations in the NIPA's. These organizations consist of all entities required to file Federal corporate tax returns, including 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. With several differ-

ences, this income is measured as receipts less expenses as defined in Federal tax law. Among these differences: Receipts exclude capital gains and dividends received, expenses exclude depletion and capital losses and losses resulting from bad debts, inventory withdrawals are valued at replacement cost, and depreciation is on a consistent accounting basis and is valued at replacement cost using depreciation profiles based on empirical evidence on used-asset prices that generally suggest a geometric pattern of price declines. Because national income is defined as the income of U.S. residents, its profits component includes income earned abroad by U.S. corporations and excludes income earned in the United States by the rest of the world. (See "inventory valuation adjustment" and "capital consumption adjustment.")

*Profits before tax* (1-12) is the income of organizations treated as corporations in the NIPA's except that it reflects the inventory- and depreciation-accounting practices used for Federal income tax returns. It consists of profits tax liability, dividends, and undistributed corporate profits.

*Profits tax liability* (1-13) is the sum of Federal, State, and local income taxes on all income subject to taxes; this income includes capital gains and other income excluded from profits before tax. The taxes are measured on an accrual basis, net of applicable tax credits.

*Profits after tax* (1-14) is profits before tax less profits tax liability. It consists of dividends and undistributed corporate profits. *Dividends* (1-15) is payments in cash or other assets, excluding the corporations' own stock, that are made by corporations located in the United States and abroad to stockholders who are U.S. residents. The payments are measured net of dividends received by U.S. corporations. Dividends paid to State and local government social insurance funds and general government are included. *Undistributed profits* (1-16) is corporate profits after tax less dividends.

*Inventory valuation adjustment* (IVA) (1-17) for corporations is the difference between the cost of inventory withdrawals as valued in the source data used to determine profits before tax and the cost of withdrawals valued at replacement cost. It is needed because inventories as reported in the source data are often charged to cost of sales (that is, withdrawn) at their acquisition (historical) cost rather than at their replacement cost (the concept underlying the NIPA's). As prices change, companies that value inventory with-

drawals at acquisition cost may realize profits or losses. Inventory profits, a capital-gains-like element in profits, result from an increase in inventory prices, and inventory losses, a capital-loss-like element in profits, result from a decrease in inventory prices. In the NIPA's, inventory profits or losses are shown as adjustments to business income (corporate profits and nonfarm proprietors' income); they are shown as the IVA with the sign reversed. No adjustment is needed to farm proprietors' income because farm inventories are measured on a current-market-cost basis.

*Net interest* (1-19) is the interest paid by private business less the interest received by private business, plus the interest received from the rest of the world less the interest paid to the rest of the world. Interest payments on mortgage and home improvement loans and on home equity loans are counted as interest paid by business because home ownership is treated as a business in the NIPA's. In addition to monetary interest, net interest includes imputed interest, which is paid by corporate financial business and is measured as the difference between the property income received on depositors' or policyholders' funds and the amount of property income paid out explicitly. The imputed interest paid by life insurance carriers and noninsured pension plans attributes their investment income to persons in the period it is earned. The imputed interest payments by financial intermediaries other than life insurance carriers and private noninsured pension plans to persons, governments, and to the rest of the world have imputed service charges as counterentries in GDP and in net receipts of factor income from the rest of the world; they are included in personal consumption expenditures, in government consumption expenditures and gross investment, and in exports of goods and services, respectively.

*Business transfer payments* (1-21) consists of payments to persons (1-22) and to the rest of the world (1-23) by private business for which no current services are performed. Business transfer payments to persons consists primarily of liability payments for personal injury and of corporate gifts to nonprofit institutions. Business transfer payments to the rest of the world is nonresident taxes—taxes paid by domestic corporations to foreign governments.

*Indirect business tax and nontax liability* (1-24) consists of (1) tax liabilities that are chargeable to business expense in the calculation of profit-type incomes and (2) certain other business liabilities to general government agencies that are treated

like taxes. Indirect business taxes includes taxes on sales, property, and production. Employer contributions for social insurance are not included. Taxes on corporate incomes are not included; these taxes cannot be calculated until profits are known, and in that sense, they are not a business expense. Nontaxes includes regulatory and inspection fees, special assessments, fines and forfeitures, rents and royalties, and donations. Nontaxes generally excludes business purchases from general government agencies of goods and services that are similar to those provided by the private sector. Government receipts from the sales of such products are netted against government consumption expenditures.

*Subsidies less current surplus of government enterprises* (1-25). *Subsidies* is the monetary grants paid by government agencies to private business and to government enterprises at another level of government. The *current surplus of government enterprises* is their current operating revenue and subsidies received from other levels of government less their current expenses. In the calculation of their current surplus, no deduction is made for net interest paid. The current surplus of government enterprises is not counted as a profit-type income, and therefore, it is not counted as a factor charge. Subsidies and current surplus are shown as a combined entry because deficits incurred by some government enterprises may result from selling goods to business at below-market prices in lieu of giving them subsidies.

*Consumption of fixed capital* (1-26) is a charge for the using up of private and government fixed capital located in the United States. It is based on studies of prices of used equipment and structures in resale markets. For general government and for nonprofit institutions that primarily serve individuals, it is recorded in government consumption expenditures and in personal consumption expenditures, respectively, as the value of the current services of the fixed capital assets owned and used by these entities. *Private capital consumption allowances* consists of tax-return-based depreciation charges for corporations and nonfarm proprietorships and of historical-cost depreciation (calculated by BEA using a geometric pattern of price declines) for farm proprietorships, rental income of persons, and nonprofit institutions. *Private capital consumption adjustment* is the difference between private capital consumption allowances and private consumption of fixed capital.



*Receipts of factor income from the rest of the world* (1-32) consists of receipts by U.S. residents of interest and dividends, of reinvested earnings of foreign affiliates of U.S. corporations, and of compensation paid to U.S. residents by foreigners.

*Payments of factor income to the rest of the world* (1-33) consists of payments to foreign residents of interest and dividends, of reinvested earnings of U.S. affiliates of foreign corporations, and of compensation paid to foreigners by U.S. residents.

*Statistical discrepancy* (1-35) is GDP less GDI or GNP less GNI. It is recorded in the NIPA's as an "income" component that reconciles the income and product sides of the accounts. As noted above, it arises because the two sides are estimated using independent and imperfect data.<sup>3</sup>

### *Personal income and outlay account*

*Personal income* is the sum of wage and salary disbursements, other labor income, proprietors' income with inventory valuation and capital consumption adjustments, rental income of persons with capital consumption adjustment, personal dividend income, personal interest income, and transfer payments to persons, less personal contributions for social insurance.

*Wage and salary disbursements* (see 1-3).

*Other labor income* (see 1-7).

*Proprietors' income with inventory valuation and capital consumption adjustments* (see 1-8).

*Rental income of persons with capital consumption adjustment* (see 1-9).

*Personal dividend income* (2-11) is the dividend income of persons from all sources. It equals net dividends paid by corporations (see 1-15) less *dividends received by government* (2-13). Dividends received by government consists of dividends received by State and local governments, primarily by their retirement systems.

*Personal interest income* (2-14) is the interest income (monetary and imputed) of persons from all sources. It equals net interest (see 1-19) plus *net interest paid by government* (2-16) plus *interest paid by persons* (2-17). The last item consists of all interest paid by individuals except mortgage interest, which is reflected in net rental income of persons.

*Transfer payments to persons* is income payments to persons for which no current services

are performed. It consists of business transfer payments to persons (see 1-22) and *government transfer payments* (2-20). Government transfer payments includes benefits from the following social insurance funds: Old-age, survivors, and disability insurance (social security); hospital insurance; supplementary medical insurance; unemployment insurance; government employee retirement; railroad retirement; pension benefit guaranty; veterans life insurance; workers' compensation; military medical insurance; and temporary disability insurance. Government transfer payments also includes benefits from certain other programs: Veterans benefits other than life insurance, food stamps, black lung, supplemental security income, public assistance (including medical care and family assistance), and educational assistance. Government payments to nonprofit institutions excluding payments for work under research and development contracts are also included.

*Personal contributions for social insurance* (2-21) includes payments by employees, self-employed, and other individuals who participate in the following government programs: Old-age, survivors, and disability insurance (social security); hospital insurance; supplementary medical insurance; unemployment insurance; government employee retirement; railroad retirement; veterans life insurance; and temporary disability insurance.

*Personal tax and nontax payments* (2-1) is tax payments (net of refunds) by U.S. residents that are not chargeable to business expense and certain other personal payments to government agencies (except government enterprises) that are treated like taxes. Personal taxes includes taxes on income, including realized net capital gains; on transfers of estates and gifts; and on personal property. Nontaxes includes donations and fees, fines, and forfeitures. Personal contributions for social insurance is not included. Taxes paid by U.S. residents to foreign governments and taxes paid by foreigners to the U.S. Government are both included in transfer payments.

*Personal outlays* (2-2) is the sum of personal consumption expenditures (see 1-36), interest paid by persons (see 2-17), and *personal transfer payments to the rest of the world (net)* (2-5). The last item is personal remittances in cash and in kind to the rest of the world less such remittances from the rest of the world.

*Personal saving* (2-6) is personal income less the sum of personal outlays and personal tax and nontax payments. It is the current saving of

3. For additional details, see the box "The Statistical Discrepancy," in Robert P. Parker and Eugene P. Seskin, "Annual Revision of the National Income and Product Accounts," SURVEY OF CURRENT BUSINESS 77 (August 1997): 19.

individuals (including proprietors and partnerships), nonprofit institutions that primarily serve individuals, life insurance carriers, private non-insured welfare funds, and private trust funds. Personal saving may also be viewed as the sum of the net acquisition of financial assets (such as cash and deposits, securities, and the change in the net equity of individuals in life insurance and in private noninsured pension plans) and the change in physical assets less the sum of net borrowing and of consumption of fixed capital.

#### *Government receipts and expenditures account*

*Personal tax and nontax payments* (see 2-1).

*Corporate profits tax liability* (see 1-13).

*Indirect business tax and nontax liability* (see 1-24).

*Contributions for social insurance* (see 1-6 and 2-21).

*Consumption expenditures* (see 1-50).

*Transfer payments* (3-2) is transfer payments to persons (see 2-20) and *transfer payments to the rest of the world (net)* (3-4). The latter consists of U.S. Government military and nonmilitary grants in cash and nonmilitary grants in kind to foreign governments and of U.S. Government transfers, mainly retirement benefits, to former residents of the United States.

*Net interest paid* (3-5). Net interest paid by government is interest paid by government to persons, to business, and to the rest of the world (that is, to foreign businesses, governments, and persons) less interest received by government from persons, from business, and from the rest of the world. Interest paid consists of monetary interest paid on public debt and other financial obligations. Interest received consists of monetary and imputed interest received on loans and investments, including on the balances of State and local government social insurance funds.

*Dividends received by government* (see 2-13).

*Subsidies less current surplus of government enterprises* (see 1-25).

*Wage accruals less disbursements* (see 1-4).

*Current surplus or deficit (-), national income and product accounts* (3-9) is the sum of government receipts (lines 12, 13, 14, and 15 of account 3) less the sum of government expenditures (lines 1, 2, 5, 6, 7, and 8 of account 3). It may also be viewed as the sum of net acquisition of financial assets by general government and government enterprises and net government purchases of land and of rights to government-owned land including oil resources, less net borrowing.

#### *Foreign transactions account*

*Imports of goods and services* (see 1-49).

*Payments of factor income* (see 1-33).

*Transfer payments to the rest of the world* (see 1-23, 2-5, and 3-4).

*Net foreign investment* (4-10) is U.S. exports of goods and services, receipts of factor income, and capital grants received by the United States (net) (see below), less imports of goods and services by the United States, payments of factor income, and transfer payments to the rest of the world (net). It may also be viewed as the acquisition of foreign assets by U.S. residents less the acquisition of U.S. assets by foreign residents. It includes the statistical discrepancy in the balance of payments accounts.

*Exports of goods and services* (see 1-48).

*Receipts of factor income* (see 1-32).

*Capital grants received by the United States (net)* (4-3) is mainly the allocation of Special Drawing Rights to the United States.

#### *Gross saving and investment account*

*Personal saving* (see 2-6).

*Wage accruals less disbursements* (see 1-4).

*Undistributed corporate profits with inventory valuation and capital consumption adjustments* (see 1-16, 1-17, and 1-18).

*Consumption of fixed capital* (see 1-26).

*Government current surplus or deficit (-), national income and product accounts* (see 3-9).

*Capital grants received by the United States (net)* (see 4-3).

*Statistical discrepancy* (see 1-35).

*Gross private domestic investment* (see 1-40).

*Gross government investment* (see 1-50).

*Net foreign investment* (see 4-10).

#### *Other definitions*

*Final sales of domestic product* is GDP minus change in business inventories; equivalently, it is the sum of personal consumption expenditures, gross private domestic *fixed* investment, government consumption expenditures and gross investment, and net exports of goods and services.

*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 GDP minus net exports of goods and services; equivalently, it is the sum of personal consumption expenditures, gross private domestic investment, and government consumption expenditures and gross investment.

*Final sales to domestic purchasers* is gross domestic purchases minus change in business inventories.

*Population* is the total population of the United States, including the Armed Forces overseas and the institutionalized population. The monthly estimate is the average of Census Bureau survey estimates for the first of the month and the first of the following month; the quarterly and annual estimates are the averages of the relevant monthly estimates.

*Personal saving as a percentage of disposable personal income (DPI)*, frequently referred to as “the personal saving rate,” is calculated on a monthly, quarterly, and annual basis as the ratio of personal saving to DPI.

*Gross saving as a percentage of gross national product (GNP)*, sometimes referred to as “the national saving rate,” is calculated on a quarterly and annual basis as the ratio of gross saving—the sum of gross private saving, gross government saving, and capital grants received by the United States (net)—to GNP.

*U.S. residents* are individuals, governments, business enterprises, trusts, associations, and similar institutions 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 resident 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.

*Foreign residents* include international institutions located in the United States, foreign nationals employed by their home Governments in the United States, and foreign affiliates of U.S. companies.

*The rest of the world* consists of foreign residents who are transactors with U.S. residents.

### **Real output and related measures**

The chain-type quantity and price indexes, in combination with the current-dollar estimates, provide users with the basic data series from which all other analytical tables and presentations

of the NIPA’s are derived. The chained (1992) dollar estimates provide measures to calculate the percent changes for GDP and its components that are consistent with those calculated from the chain-type quantity indexes. These estimates also provide comparisons of levels over time and reasonable approximations of the relative importance, and the contributions to growth in GDP, of most components for the years close to 1992. The chained (1992) dollar estimates are also used to compute certain key aggregates, such as per capita GDP.

### **Quantity and price indexes**

Changes in current-dollar GDP measure changes in the market value of the goods and services produced in the economy in a particular period. For many purposes, it is necessary to decompose these changes into quantity changes and price changes.

The changes in quantities and prices in the NIPA’s are calculated using a Fisher formula that incorporates weights from two adjacent periods. For example, the 1992–93 change in real GDP uses prices for 1992 and 1993 as weights, and the 1992–93 change in prices uses quantities for 1992 and 1993 as weights.<sup>4</sup> These annual changes are “chained” (multiplied) together to form time series of quantity and price. (For more details, see the box “[Basic Formulas for Calculating Chain-Type Quantity and Price Indexes](#).”) Because the Fisher formula allows for the effects of changes in relative prices and in the composition of output over time, the resulting quantity or price changes are not affected by the substitution bias associated with the fixed-weighted formula previously used to calculate changes in quantities and prices.<sup>5</sup> The Fisher formula also produces results that are not affected by the choice of base periods.

4. Because the source data available for most components of GDP are measured in dollars rather than in units, the quantities of most of the detailed components used to calculate percent changes are obtained by deflation. For deflation, quantities are approximated by real values (expressed at present with 1992 as the base period) that are calculated by dividing the current-dollar value of the component by its price index, where the price index uses 1992 as the base period.

Two other methods, quantity extrapolation and direct base-year valuation, are also used to calculate the real values for a small number of the most detailed GDP components. For quantity extrapolation, the real values are obtained by extrapolating the base-year current-dollar estimates in both directions from the base period (1992) by quantity indicators; for example, the real values for mining exploration, shafts, and wells structures are extrapolated using oilwell footage drilled. For direct-base-year valuation, the real values are obtained by multiplying base-year prices by quantity data for each period; for example, the real values of natural gas inventories are calculated using quantities and prices of natural gas stocks.

5. For a discussion of the advantages of the Fisher index, see Jack E. Triplett, “Economic Theory and BEA’s Alternative Quantity and Price Indexes,” SURVEY 72 (April 1992): 49–52; and J. Steven Landefeld and Robert P. Parker, “BEA’s Chain Indexes, Time Series, and Measures of Long-Term Economic Growth,” SURVEY 77 (May 1997): 58–68.

In addition, because the changes in quantities and prices calculated in this way are symmetric, the product of a quantity index and the corresponding price index equals the current-dollar index.<sup>6</sup>

Chain-type quantity and price indexes that correspond to most of the current-dollar output, product, and expenditure measures are presented in tables 7.1–7.14 and 7.17–7.20.<sup>7</sup> Percentage changes from the preceding period for GDP and its major components and for other aggregates are presented in table 8.1. Contributions by major components to changes in real GDP are presented in table 8.2, which is discussed in more detail below.

### *Chained-dollar measures*

BEA also prepares measures of real GDP and its components in a dollar-denominated form, designated “*chained (1992) dollar estimates*.” For GDP and most other series, these estimates are computed by multiplying the 1992 current-dollar value by a corresponding quantity index number and then dividing by 100.<sup>8</sup> For example, if a current-dollar GDP component equaled \$100 in 1992 and if real output for this component increased 10 percent in 1993, then the chained (1992) dollar value of this component would be \$110 ( $\$100 \times 1.10$ ) in 1993.

For analyses of changes over time in an aggregate or in a component, the percentage changes calculated from the chained-dollar estimates and from the chain-type quantity indexes are the same; any differences will be small and due to rounding. However, because the relative prices

used as weights for any period other than the base period differ from those used for the base period, the chained-dollar values for the detailed GDP components do not necessarily sum to the chained-dollar estimate of GDP or to any intermediate aggregate. A measure of the extent of such differences is provided in most chained-dollar tables by a “residual” line, which indicates the difference between GDP (or an other major aggregate) and the sum of the most detailed components in the table.

For periods close to the base year, when there usually has not been much change in the relative prices that are used as the weights for the chain-type index, the residuals tend to be small, and the chained (1992) dollar estimates can be used to approximate the contributions to growth and to aggregate the detailed estimates.

As one moves further from the base year, the residual tends to become larger, and the chained-dollar estimates become less useful for analyses of contributions to growth. In general, the use of chained-dollar estimates to calculate component shares or component contributions to real growth may be misleading for periods away from the base year. In particular, for components for which relative prices are changing rapidly, these calculations may be misleading even just a few years from the base year.

To assist users in making valid comparisons across components for periods away from the base year, several changes have been made in the NIPA tables. Table 8.2 provides an accurate measure of the contributions of the major GDP components to the percentage change in real GDP for all periods. This table should be used for periods far from the base period, when the overall residual and the errors in contributions to growth become quite large. This table uses exact formulas for attributing growth to the components of GDP and of other aggregates, but the presentation is limited to the contributions to changes from the preceding year or quarter and to changes in the major components of GDP. (For details, see the box “[Calculation of Component Contributions to the Change in GDP](#).”)

For some analytical purposes, it may be desirable to calculate contributions to growth for more than a single quarter or year, to calculate contributions to growth for aggregates other than GDP, or to work with real estimates that are denominated in dollars. Two articles in the SURVEY provide information on how to prepare chained-dollar series with different base periods that permit the calculation of close approximations of

6. For the annual estimates of NIPA aggregates that include the components “change in business inventories” and “change in Commodity Credit Corporation inventories,” this relationship does not hold exactly, because of the price-data conventions used to calculate those components. In addition, for the quarterly estimates, all quarterly chain-type quantities and prices are adjusted to average to the corresponding annual estimates. For details on quarterly calculations, see the box “[Basic Formulas for Calculating Chain-Type Quantity and Price Indexes](#).”

7. Indexes are not presented for change in inventories, for net exports, and for most of the “net” series in tables 7.5, 7.7, 7.11, 7.13, and 7.20. Indexes for these series are not meaningful.

8. For change in business inventories (in tables 1.2, 1.4, 1.6, 5.3, 5.11, 8.5, 8.7, and 8.9), real values are calculated as the difference between end-of-period and beginning-of-period chain-weighted stocks of inventories.

The following “real” series are calculated as the current-dollar value of the series divided by an appropriate implicit price deflator: The chained-dollar values of gross national income and gross domestic income (in table 1.10), of command-basis exports of goods and services and receipts of factor income (in table 1.11), of gross and net domestic product of nonfinancial corporate business (in table 1.16), and of disposable personal income (in tables 2.1 and 2.9).

For the following series, real values are calculated as the sum of, or the difference between, chained-dollar series: Net exports (in tables 1.2, 8.5, and 8.7); command-basis gross national product (in table 1.11), foreign travel and other, net (in table 2.5); net foreign travel (in table 2.7); Federal consumption expenditures for durable goods, for nondurable goods, and for Commodity Credit Corporation inventory change (in table 3.8); net investment by major type (in table 5.3); and Federal defense and nondefense net purchases of used structures (in table 5.15).

## Basic Formulas for Calculating Chain-Type Quantity and Price Indexes

### Annual indexes

This box shows the basic calculations used to prepare annual and quarterly chain-type quantity and price indexes. The formula used to calculate the annual change in real GDP and other components of output and expenditures is a Fisher index ( $Q_t^F$ ) that uses weights for 2 adjacent years (years  $t - 1$  and  $t$ ).

The formula for real GDP in year  $t$  relative to its value in year  $t - 1$  is

$$Q_t^F = \sqrt{\frac{\sum p_{t-1}q_t}{\sum p_{t-1}q_{t-1}} \times \frac{\sum p_tq_t}{\sum p_tq_{t-1}}},$$

where the  $p$ 's and  $q$ 's represent prices and quantities of detailed components in the 2 years.

Because the first term in the Fisher formula is a Laspeyres quantity index ( $Q_t^L$ ), or

$$Q_t^L = \frac{\sum p_{t-1}q_t}{\sum p_{t-1}q_{t-1}},$$

and the second term is a Paasche quantity index ( $Q_t^P$ ), or

$$Q_t^P = \frac{\sum p_tq_t}{\sum p_tq_{t-1}},$$

the Fisher formula can also be expressed for year  $t$  as the geometric mean of these indexes as follows:

$$Q_t^F = \sqrt{Q_t^L \times Q_t^P}.$$

The percent change in real GDP (or in a GDP component) from year  $t - 1$  to year  $t$  is calculated as

$$100(Q_t^F - 1.0).$$

Similarly, price indexes are calculated using the Fisher formula

$$P_t^F = \sqrt{\frac{\sum p_tq_{t-1}}{\sum p_{t-1}q_{t-1}} \times \frac{\sum p_tq_t}{\sum p_{t-1}q_t}},$$

which is the geometric mean of a Laspeyres price index ( $P_t^L$ ) and a Paasche price index ( $P_t^P$ ), or

$$P_t^F = \sqrt{P_t^L \times P_t^P}.$$

The chain-type quantity index value for period  $t$  is

$$I_t^F = I_{t-1}^F \times Q_t^F,$$

and the chain-type price index is calculated analogously. Chain-type real output and price indexes are presented with the base year ( $b$ ) equal to 100; that is,  $I_b = 100$ .

The current-dollar change from year  $t - 1$  to year  $t$  expressed as a ratio is equal to the product of the Fisher price and quantity indexes:<sup>1</sup>

$$\frac{\sum p_tq_t}{\sum p_{t-1}q_{t-1}} = P_t^F \times Q_t^F.$$

### Quarterly indexes

The same formulas are used to calculate the quarterly indexes for the most recent quarters, called the "tail" period; quarterly data are substituted for annual data. The tail period begins in the third quarter of the most recent complete year that is included in an annual or comprehensive NIPA revision, so the specific quarters covered change annually. Modified formulas are used to calculate the indexes for the other quarters, called the "historical" period. Quarterly quantity data are used for the quantity indexes, and quarterly price data are used for the price indexes, but the weights—prices for a quantity index and quantities for a price index—are annual data.

The weights that are used for the indexes in the historical period depend on the quarter being estimated. For each quarter, the weights for the closest 2 years are used: For the first and second quarters of a year, the weights are from that year and the preceding year; while for the third and fourth quarters, the weights are from that year and the next year.

All quarterly chain-type indexes for completed years that have been included in an annual or comprehensive revision are adjusted so that the quarterly indexes average to the corresponding annual index. When an additional year is completed between annual revisions, the annual index is computed as the average of the quarterly indexes, so no adjustment is required to make the quarterly and annual indexes consistent. For example, until the 1998 annual revision is released, the chain-type indexes for the year 1997 are derived by averaging the four quarterly indexes for 1997.

### Chained-dollar estimates

The chained-dollar value ( $CD_t^F$ ) is calculated by multiplying the index value by the base-period current-dollar value ( $\sum p_bq_b$ ) and dividing by 100.<sup>2</sup> For period  $t$ ,

$$CD_t^F = \sum p_bq_b \times I_t^F / 100.$$

### Implicit price deflators

The implicit price deflator ( $IPD_t^F$ ) for period  $t$  is calculated as the ratio of the current-dollar value to the corresponding chained-dollar value, multiplied by 100, as follows:

$$IPD_t^F = \frac{\sum p_tq_t}{CD_t^F} \times 100.$$

1. See also footnote 6 in the text.

2. For exceptions to this procedure, see footnote 8 in the text.

contributions to real growth or of relative changes for any period.<sup>9</sup> These articles show how to calculate a chained-dollar series for any period by using the percent changes in the chain-type indexes to compute chained-dollar series indexed to the current dollars of whatever base period is appropriate for the analysis. In addition, these articles provide a number of chained-dollar series over frequently cited time periods, such as decades and business cycles. In computing these series, different base periods were used, depending upon the time period analyzed; for example, for decades and business cycles, the midpoints of the periods were used.

The presentation of detailed quantity indexes, which are accurate for all periods, has been greatly expanded in tables 7.3–7.20. The annual growth rates for major NIPA aggregates for all yearly intervals for 1970 to the present are shown each month under “Historical Tables” un-

der “National Data” in the section “BEA Current and Historical Data” in the SURVEY.

*Price indexes*

BEA’s featured aggregate price measure is the price index for gross domestic purchases, which measures the prices paid for goods and services *purchased* by U.S. residents. This index is derived from the prices of personal consumption expenditures (PCE), gross private domestic investment, and government consumption expenditures and gross investment. In contrast, the GDP price index measures the prices paid for goods and services *produced* by the U.S. economy and is derived from the prices of PCE, gross private domestic investment, net exports, and government consumption expenditures and gross investment. Thus, the two indexes differ with respect to coverage of the prices of exported and imported goods and services. Price changes in goods and services produced abroad and sold in the United States are reflected in the gross domestic purchases measure but not in the GDP measure; price changes in goods and services produced by the U.S. economy and sold abroad

9. See Landefeld and Parker, “BEA’s Chain Indexes,” 63–66; and J. Steven Landefeld and Robert P. Parker, “Preview of the Comprehensive Revision of the National Income and Product Accounts: BEA’s New Featured Measures of Output and Prices,” SURVEY 75 (July 1995): 31–38.

**Calculation of Component Contributions to the Change in GDP**

*Changes from preceding period*

The contributions to the change in real GDP provide a measure of the composition of GDP growth that is not affected by the nonadditivity of the GDP components. Two formulas for the contributions of components to the percent change in real GDP are used—one for years following the base year, and the other for the base year and for years preceding the base year.

For years following the base year, the contribution to the percent change in real GDP in year *t* attributable to the quantity change in component *i* ( $C\% \Delta_{i,t}$ ) is

$$C\% \Delta_{i,t} = 100 \times \frac{(p_{i,t-1} P_t^P + p_{i,t}) \times (q_{i,t} - q_{i,t-1})}{2 \times IPD_t^F \times CD_{t-1}^F},$$

where  $CD_{t-1}^F$  is the chained-dollar GDP in year *t* – 1;  
 $IPD_t^F$  is the implicit price deflator for GDP in year *t*;  
 $p_{i,t}$  is the price of component *i* in year *t*;  
 $P_t^P$  is the Paasche price index for GDP in year *t*;  
 and  
 $q_{i,t}$  is the quantity of component *i* in year *t*.

For the base year and years preceding the base year,  $C\% \Delta_{i,t}$  is

$$C\% \Delta_{i,t} = 100 \times \frac{\left( \frac{p_{i,t}}{p_t^L} + p_{i,t-1} \right) \times (q_{i,t} - q_{i,t-1})}{2 \times IPD_{t-1}^F \times CD_{t-1}^F},$$

where  $P_t^L$  is the Laspeyres price index for GDP in year *t*.

Because these contributions to the percent change are additive, they can be used to calculate the contributions to subaggregates as well as the contributions of the detailed components.

The formula used for the contributions for years after the base period can also be used for the most recent quarters (the “tail” period), except the quarterly results are expressed at annual rates.<sup>1</sup>

*Changes over other periods*

Users can also prepare close approximations of contributions to real GDP growth or to the growth of other aggregates using chain-type annual-weighted indexes. In effect, users compute a chained-dollar series for a particular period using the percent changes in the chain-type annual-weighted indexes to compute chained-dollar series indexed to the current dollars of the base period appropriate for the analysis. (For references to additional information on these calculations, see footnote 9 in the text.)

1. The formulas must be modified for other quarters and for the most recent year because for these periods, chained output is calculated in a slightly different manner.

are reflected in the GDP price measure but not in the gross domestic purchases price measure. For example, a change in the price of imported petroleum that is fully passed on to U.S. consumers would be fully reflected in the price index for gross domestic purchases but not in the GDP price index, because imports are subtracted in deriving GDP.

### *Implicit price deflators*

BEA also prepares another price index, the implicit price deflator (IPD), which is calculated as the ratio of the current-dollar value to the corresponding chained-dollar value, multiplied by 100 (see the box “Basic Formulas for Calculating Chain-Type Quantity and Price Indexes”). The values of the IPD are very close to the values of the corresponding chain-type price index for all periods.<sup>10</sup>

Implicit price deflators for GDP and its major components are presented as index numbers in table 7.1, and percentage changes from the preceding period for these measures are presented in table 8.1.

### *Command-basis GNP and terms of trade*

BEA also prepares a measure of “real” output—*command-basis GNP* (see table 1.11). Command-basis GNP is a measure of the goods and services produced by the U.S. economy in terms of their purchasing power. GNP and command-basis GNP differ in how their real values are prepared: In estimating real GNP, the current-dollar values of the detailed components of exports of goods and services are deflated by export prices, the current-dollar values of the detailed components of imports of goods and services are deflated by import prices, and the current-dollar value of most factor income is deflated by the implicit price deflator for final sales to domestic purchasers. In estimating command-basis GNP, the current-dollar value of the sum of exports of goods and services and of receipts of factor income is deflated by the implicit price deflator for the sum of imports of goods and services and of payments of factor income.

The *terms of trade* is a measure of the relationship between the prices that are received by U.S. producers for exports of goods and services and the prices that are paid by U.S. purchasers for imports of goods and services. It is measured by the following ratio, with the decimal point shifted

two places to the right: In the numerator, the IPD for the sum of exports of goods and services and of receipts of factor income; in the denominator, the IPD for the sum of imports of goods and services and of payments of factor income. Changes in the terms of trade 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. For example, if the U.S. dollar depreciates against a foreign currency, a foreign manufacturer may choose to absorb this cost by reducing the profit margin on the product it sells to the United States, or it may choose to raise the price of the product and risk a loss in market share.

### *Classifications of production*

In the NIPA’s, production is classified by the type of product, by the sector, by the legal form of organization, and by industry.

#### *Type of product*

Type of product classifications—goods (durable and nondurable), services, and structures—are presented for GDP and the components of final sales of domestic product. Goods are products that can be stored or inventoried, services are products that cannot be stored and are consumed at the place and time of their purchase, and structures are products that are usually constructed at the location where they will be used and that typically have long economic lives. If a product has characteristics of more than one of these classifications, it is classified on the basis of the dominant characteristic.

Accordingly, the following products are included in goods: Restaurant meals; expenditures abroad by U.S. residents except for travel; replacement parts whose installation cost is minimal; dealers’ margins on used equipment; and movable household appliances, such as refrigerators, even when they are included in the purchase price of a new home.

The following products are included in services: Food (that is included in airline transportation and hospital charges), natural gas and electricity (except in exports and imports of goods and services); office supplies (that are included in current operating expense of nonprofit institutions); foreign travel by U.S. residents; expenditures in the United States by foreigners; repair services, which include the cost of parts (except replacement parts whose installation cost

<sup>10</sup> The two measures of the price level differ only because of the factors cited in footnote 6.

is minimal); defense research and development; and exports and imports of certain goods, primarily military equipment purchased and sold by the Federal Government.<sup>11</sup>

The following products are included in structures: Mobile homes; certain types of installed equipment, such as elevators, heating, and air conditioning systems; brokers' commissions on sale of structures; architectural and engineering fees included in the value of structures; land development costs; and mining exploration, shafts, and wells.

In personal consumption expenditures, exports, imports, and government consumption expenditures and gross investment, durable goods have an average life of at least 3 years. In fixed investment, producers' durable equipment consists of goods that have an average life of at least 1 year. In change in business inventories, goods held by manufacturing and trade establishments are classified as durable goods or nondurable goods in accordance with the classification of the industry of the establishment holding the inventories. Inventories held by construction establishments are classified as durable goods; inventories held by all other establishments are classified as nondurable goods.

### Sector

In the NIPA's, a breakdown of GDP is also shown in terms of the three sectors of the economy—business, households and institutions, and general government.

**Business:** Production by all entities that produce goods and services for sale at a price intended at least to approximate the costs of production, corporate and noncorporate private entities organized for profit, and certain other entities that are treated as business in the NIPA's. These entities include mutual financial institutions, private noninsured pension funds, cooperatives, nonprofit organizations (that is, entities classified as nonprofit by the Internal Revenue Service (IRS) in determining income tax liability) that primarily serve business, Federal Reserve banks, federally sponsored credit agencies, and government enterprises.<sup>12</sup> Business production also includes the services of owner-occupied housing and of buildings and equipment owned and used by nonprofit institutions that primarily serve individuals. Gross

product of the business sector is measured as GDP less the gross product of households and institutions and of general government.<sup>13</sup>

**Households and institutions:** Production by households, consisting of families and unrelated individuals, and by nonprofit institutions that primarily serve individuals. Gross product of households and institutions is measured by the compensation paid to domestic workers and to the employees of these nonprofit institutions.

**General government:** Production of all Federal Government and State and local government agencies except government enterprises. Gross product of general government is measured as the sum of the compensation of the employees of these agencies and of the consumption of fixed capital.

### Legal form of organization

For the domestic business sector, income and its components are shown for four legal forms of organizations—corporate business, sole proprietorships and partnerships, other private business, and government enterprises (employee compensation only).

**Corporate business:** All entities required to file Federal corporate tax returns (IRS Form 1120 series). These entities include 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:** All entities that would be required to file IRS Schedule C (Profits or Loss from Business) or Schedule F (Farm Income and Expenses) if the proprietor met the filing requirements, together with owner-occupied farm housing.

**Partnerships:** All entities required to file Federal partnership income tax returns, IRS Form 1065 (U.S. Partnership Return of Income).

**Other private business:** All entities that would be required to report rental and royalty income on the individual income tax return in IRS Schedule E (Supplemental Income and Loss) if the individual met the filing requirements, tax-exempt cooperatives, owner-occupied nonfarm housing, and buildings and equipment owned and used by nonprofit institutions that primarily serve individuals.

11. These certain goods are classified as services only for exports and imports.

12. For more detail on government enterprises, see the section "Legal form of organization."

13. Gross product of financial and of nonfinancial corporations are also shown in the NIPA tables. They are calculated as the costs incurred and the incomes earned from production.



*Government enterprises:* 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. A “mixed” treatment of government enterprises is used in the NIPA’s: Some types of transactions are recorded as if they were part of the business sector, and others are recorded as if they were part of the general government sector.

Government enterprises are treated like other businesses and included in the NIPA business sector: (1) Their sales to final users are recorded as sales by private businesses, (2) their purchases of materials and business services are considered intermediate, and (3) their compensation payments and consumption of fixed capital are deducted in calculating their income. Within the business sector, government enterprises are classified as noncorporate businesses.

Government enterprises are treated like other government agencies: (1) Their interest payments are combined with those of general government rather than those of business, (2) their investment in equipment and structures is combined with general government investment rather than with business investment in gross private domestic investment, and (3) their profit-like income, the current surplus of government enterprises (see the definition on page 33), accrues to general government.

### Industry

Industrial distributions are presented for national income and its components, capital consumption allowances, employment and hours, and the change in business inventories and the stock of business inventories.<sup>14</sup> The classification underlying the distributions of private activities is based on the Standard Industrial Classification (SIC).<sup>15</sup>

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. Expenditures by

the Federal Government and by State and local governments are also shown by type and by function.

The industrial distributions for private activities are based on data collected from “establishments” or from “companies” (also called enterprises or firms). Establishments, as defined in the SIC, are economic units, generally at a single physical location, where business is conducted or where services or industrial operations are performed. Companies consist of one or more establishments owned by the same legal entity or group of affiliated entities. Establishments are classified into an SIC industry on the basis of their principal product or service, and companies are classified into an SIC industry on the basis of the principal SIC industry of all their establishments. Because large multiestablishment companies typically own establishments that are classified in different SIC industries, the industrial distribution of the same economic activity on an establishment basis can differ significantly from that on a company basis. For example, employment of steel-manufacturing companies differs from employment of steel-manufacturing establishments because the employment of these companies includes the employment of establishments that are not classified in steel manufacturing and because it excludes the employment of establishments that manufacture steel but are not owned by steel-manufacturing companies.

Industrial distributions on a consistent establishment or company basis are not available for all NIPA components. As a result, the industrial distribution of national income reflects a mix of establishment and company data. For the following series, the industrial distributions are based on establishment data: Compensation of employees, employment, hours, inventories, rental income of persons, farm proprietors’ income, farm net interest, and farm noncorporate capital consumption allowances. For nonfarm proprietors, industrial distributions of proprietors’ income, net interest, and capital consumption allowances are based on company data; these data are regarded as being substantially the same as if they were based on establishment data because nearly all unincorporated companies own only one establishment (and the few multiestablishment companies usually own establishments in the same SIC industry). For corporations, industrial distributions of profits, nonfarm net interest, and capital consumption allowances are based on company data.

14. An industrial distribution of fixed investment based on data collected from establishments is prepared as part of the procedure used to estimate capital stock.

Industrial distributions of gross product are also prepared; for further information, see Sherlene K.S. Lum and Robert E. Yuskavage, “Gross Product by Industry, 1947–96,” SURVEY 77 (November 1997): 20–34.

15. 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).

In addition, individual industry series are not fully comparable over time. Historical comparability is affected primarily by two factors. First, the composition of industries may change because of changes in the SIC basis that is used for the estimates. This factor affects estimates based on establishment data and on company data.

Second, historical comparability is affected because the industrial classification of the same establishment or company may change over time. This factor affects company-based estimates much more than establishment-based estimates. The classification of a company may change as a result of the following: Shifts in the level of consolidation of entities for which company reports are filed; mergers and acquisitions; and other shifts in principal activities, especially for large diversified firms.

In addition to the SIC industrial distributions of private activities, some NIPA tables show the following special SIC groupings, the titles of which correspond to the 1987 SIC:

*Financial industries* consists of the following SIC industries: Depository institutions, nondepository institutions, security and commodity brokers, insurance carriers, regulated investment companies, small business investment companies, and real estate investment trusts.<sup>16</sup>

*Nonfinancial industries* consists of all other private industries.

*Goods-producing industries* consists of the following SIC divisions: Agriculture, forestry, and fishing; mining; construction; and manufacturing.

*Distributive industries* consists of the following SIC divisions: Transportation (excluding the U.S. Postal Service); communications; electric, gas, and sanitary services; wholesale trade; and retail trade.

*Service industries* consists of the rest-of-the-world sector and the following SIC divisions: Finance, insurance, and real estate; and services.

## Presentation of the NIPA's

This section describes the release schedule for the NIPA estimates, the publication of the NIPA tables, and additional presentations of NIPA and NIPA-related estimates.

### *Release schedule*

For gross domestic product (GDP) and most other NIPA series, quarterly estimates are released on the following schedule: "Advance" estimates are released near the end of the first month after the end of the quarter; as more detailed and more comprehensive data become available, "preliminary" and "final" estimates are released near the end of the second and third months, respectively.

For gross national product, gross domestic income, national income, corporate profits, and net interest, advance estimates are not prepared, because of a lag in the availability of source data. Except for the fourth-quarter estimates, the initial estimates for these series are released with the preliminary GDP estimates, and the revised estimates are released with the final GDP estimates. For the fourth-quarter, these estimates are released only with the final GDP estimates.

Monthly estimates of personal income and outlays are released near the end of the month following the reference month; estimates for the preceding 2 to 4 months are subject to revision at that time.

Annual revisions of the NIPA's are usually carried out each summer and cover the months and quarters of the most recent calendar year and of the 2 preceding years. These revisions are timed to incorporate newly available major annual source data.

Comprehensive revisions are carried out at about 5-year intervals and incorporate three major types of improvements: (1) Definitional and classificational changes that update the accounts to portray more accurately the evolving U.S. economy, (2) statistical changes that update the accounts to reflect the introduction of new and improved methodologies and the incorporation of newly available and revised source data, and (3) presentational changes that update the NIPA tables to reflect the definitional, classificational, and statistical changes and to make the tables more informative.

### *Publication of the NIPA tables*

Tables that present the NIPA estimates appear each month under "National Data" in the section "BEA Current and Historical Data" in the SURVEY OF CURRENT BUSINESS.<sup>17</sup> The full set of NIPA tables consists of 142 tables that present annual, quarterly, and monthly estimates. These tables are grouped into nine categories:

17. The NIPA estimates appear first in news releases, which are available to the general public in a variety of forms (see the box "Data Availability").

16. Regulated investment companies, small business investment companies, and real estate investment trusts are included in the SIC classification "holding and other investment offices" and are not shown separately in the NIPA tables.

1. National Product and Income
2. Personal Income and Outlays
3. Government Receipts, Current Expenditures, and Gross Investment
4. Foreign Transactions
5. Saving and Investment
6. Income and Employment by Industry
7. Quantity and Price Indexes
8. Supplemental Tables<sup>18</sup>
9. Seasonally Unadjusted Estimates

The NIPA tables are numbered as follows: The number preceding the period is the category number, and the number following the period indicates the specific table in that category; for example, table 2.2 is the second table in the second category "Personal Income and Outlays."

Most of the full set of NIPA tables are published in the issues of the SURVEY that describe the annual and comprehensive revisions (for example, see the August 1997 SURVEY); the remaining tables are published in subsequent months. In addition, a set of "Selected NIPA Tables" is published monthly in the SURVEY; this set presents the es-

18. In this category, the first table shows year-to-year and quarter-to-quarter percent changes in the major NIPA aggregates, and the second table shows contributions of the major expenditure components to the percent change in real GDP. The other tables show the following: Selected per capita series; auto and truck output, farm and housing sector accounts; detail on several components of gross national income (consumption of fixed capital, capital consumption adjustment, business transfer payments, supplements to wages and salaries, rental income of persons, dividends, and interest); NIPA imputations and the components affected; and reconciliations of several NIPA measures with the source data (for example, tax return tabulations) from which they are derived or to which they are closely related. The last table shows fixed (1992) weighted quantity indexes for selected series.

timates for the most recent six quarters and the most recent 2 years. The selected set comprises 57 tables from the first eight NIPA categories (seasonally unadjusted estimates in the ninth category are compiled only once a year and thus are not included in the selected set of tables). Because the numbering system used for the full set of tables is retained in the selected set, gaps occur in the numbering of the selected tables.

A note preceding the NIPA tables indicates information on the vintage of the estimates. In general, the NIPA tables in the SURVEY present estimates for the most recent 2–4 years. Historical annual and quarterly estimates for summary NIPA series are presented annually in the SURVEY and cover the following: Current- and chained-dollar GDP for most of the components in NIPA tables 1.1 and 1.2 and for final sales of domestic product and gross national product; NIPA price indexes and implicit price deflators; and most of the major components of national income and personal income in NIPA tables 1.14 and 2.1. For example, these estimates were published as "Summary National Income and Product Series, 1929–96" in the August 1997 SURVEY. In addition, historical annual and quarterly estimates for the major NIPA aggregates are published monthly in the SURVEY.

### *Additional presentations of NIPA and NIPA-related estimates*

The SURVEY also presents the following NIPA and NIPA-related estimates that do not fit neatly

## Data Availability

The estimates from the national income and product accounts (NIPA's) that are prepared by the Bureau of Economic Analysis (BEA) are available on three World Wide Web sites and in a variety of other media.

### **Web sites**

- The BEA Web site at <<http://www.doc.bea.gov>> presents summary NIPA estimates, selected articles from the SURVEY OF CURRENT BUSINESS, and the monthly news releases for gross domestic product (GDP) and for personal income and outlays.
- The Web site of the Department of Commerce's STAT-USA provides the monthly news releases on GDP and on personal income at the time of release, the underlying-detail NIPA tables, and the complete issues of the SURVEY; to subscribe, go to the Web site at <<http://www.stat-usa.gov>>. This information is also available on STAT-USA's Economic Bulletin Board; to subscribe, call 202-482-1986.
- The Federal Statistical Briefing Room at the White House Web site at <<http://www.whitehouse.gov/fsbr>>

provides summary estimates of GDP and of a few other major NIPA aggregates.

### **Other media**

The NIPA estimates are published monthly in the SURVEY; to subscribe, call the Superintendent of Documents of the U.S. Government Printing Office at 202-512-1800.

Summary information on the estimates of GDP and of personal income is available in a recorded telephone message at the time of release. For the GDP estimates, call 202-606-5306; for the estimates of personal income and outlays, call 202-606-5303.

The NIPA estimates are also available on diskettes or printouts from BEA. For a description of these products and for other information about BEA's programs and products, see the "User's Guide to BEA Information" on the BEA Web site. To order products from BEA using Visa or MasterCard, call the Order Desk at 1-800-704-0415 (outside the United States, 202-606-9666).

into the system or publication schedule for the standard NIPA presentation.

“Gross Domestic Product by Industry” presents current- and chained-dollar estimates of gross product, or gross product originating, by industry, which is the contribution of each industry—including government—to GDP. *Estimates for GDP by industry for 1947–96* were published in the November 1997 SURVEY.

“Reconciliation Tables” in [appendix A](#) of the “BEA Current and Historical Data” section presents tables that reconcile NIPA estimates with related series and that provide analytically useful extensions of the NIPA estimates. At present, tables in this section show the reconciliation of relevant NIPA series with related series in the balance of payments accounts and the reconciliation of BEA compensation with Bureau of Labor Statistics earnings.

“Real Inventories, Sales, and Inventory-Sales Ratios for Manufacturing and Trade”—in the January, April, July, and October issues of the SURVEY—shows quarterly and monthly estimates for these series. Also shown are quarterly and monthly inventories for manufacturing by stage of fabrication. Historical estimates for these series, quarterly for 1977 forward, were published in the [May 1996 SURVEY](#), and revised and new estimates for 1993–96 were published in the [October 1997 SURVEY](#). Estimates for 1959 forward are available electronically to subscribers to STAT-USA’s Economic Bulletin Board or Internet services (see the box “[Data Availability](#)”).

“Fixed Reproducible Tangible Wealth in the United States”—usually published in the September issue of the SURVEY—shows annual estimates of stocks for fixed private capital, government-owned fixed capital, and durable goods owned by consumers. Revised estimates for 1929–95 were published in the [May 1997 SURVEY](#) and were updated to 1996 in the [September 1997 SURVEY](#). (The publication *Fixed Reproducible Tangible Wealth in the United States, 1925–94* is forthcoming and will present the estimates described above and additional estimates by industry and by type of asset for net stocks, consumption of fixed capital, investment, and average age of net stocks.)

“[Selected Monthly Estimates](#)” for personal income by type of income and for the disposition of personal income, including personal consumption expenditures, appears under “National Data” in the “BEA Current and Historical Data” section of the SURVEY. These estimates are also published annually in NIPA tables 2.8–2.11, and the esti-

mates for the most recent months appear in the personal-income-and-outlays news release.

“Source Data and Assumptions” shows the source data and the BEA assumptions for missing key source data that are used to prepare the advance estimates of GDP. This information is available at the time of the news release and is included in the “[Business Situation](#)” article in the SURVEY that presents the advance estimates.<sup>19</sup>

### Statistical Conventions Used for NIPA Estimates

Most of the NIPA estimates are presented in current dollars. Changes in current-dollar estimates measure the changes in the market values of goods or services that are produced or sold in the economy. For many purposes, it is necessary to decompose these changes into price and quantity components. Prices are expressed as index numbers with the base period—at present, the year 1992—equal to 100. Quantities, or “real” measures, are expressed as index numbers with the base period (1992) equal to 100; for selected series, they are also expressed in chained (1992) dollars. (For further details, see the section “[Real output and related measures](#).”)

#### *Seasonal adjustment*

Quarterly and monthly NIPA estimates are seasonally adjusted at the detailed series level when statistically significant seasonal patterns are present. For most of the series that are seasonally adjusted by the source agency, BEA adopts the corresponding seasonal adjustment factors. Seasonal adjustment removes from the time series the average effect of variations that normally occur at about the same time and in about the same magnitude each year—for example, weather and holidays. After seasonal adjustment, cyclical and other short-term changes in the economy stand out more clearly.

#### *Annual rates*

Quarterly and monthly NIPA estimates in current and chained dollars are presented at annual rates, which show the value that would be registered if the rate of activity measured for a quarter or a month were maintained for a full year. Annual rates are used so that periods of different lengths—for example, quarters and years—may

<sup>19</sup> Additional information about source data and assumptions is also available online through STAT-USA’s Economic Bulletin Board and on the Internet (see the box “[Data Availability](#)”).

be easily compared. These annual rates are determined simply by multiplying the estimated rate of activity by 4 (for quarterly data) or by 12 (for monthly data).

$$r = \left[ \left( \frac{GDP_t}{GDP_0} \right)^{m/n} - 1 \right] \times 100,$$

Percent changes in the estimates are also expressed at annual rates. Calculating these changes requires a variant of the compound interest formula, where

$r$  is the percent change at an annual rate;

$GDP_t$  is the level of activity in the later period;

$GDP_0$  is the level of activity in the earlier period;

$m$  is the yearly periodicity of the data (for example, 1 for annual data, 4 for quarterly, or 12 for monthly); and

$n$  is the number of periods between the earlier and later periods (that is,  $t - 0$ ).

## Appendix Updated Summary NIPA Methodologies

This appendix presents summary descriptions of the principal source data and methods used to prepare the current-dollar estimates of gross domestic product (GDP) and the estimates of real GDP.<sup>20</sup> These descriptions have been updated to reflect the methodological improvements that were introduced in the annual revision of the national income and product accounts (NIPA's) that was released in July 1997.<sup>21</sup>

### *Current-dollar estimates*

**Table 1** lists the components of current-dollar GDP starting with the components on the product side and proceeding to those on the income side. The subcomponents, with their dollar values for 1996, are grouped according to the methodology used to prepare them.

The column for the annual estimates covers the revision cycle for those estimates and notes the major differences in methodology as the estimates move through the three annual revisions to a benchmark revision.<sup>22</sup> For example, for "most goods" in personal consumption expenditures (the first item on the product side), the

table indicates one methodology for benchmark years and another for all other years.

The column for the quarterly estimates covers only the advance estimate for the current quarter—that is, the estimate prepared about a month after the end of the quarter. That estimate, rather than the preliminary or final quarterly estimate, is described because more attention focuses on the "first look" at the quarter. In addition, the column lists only the source data and methods; it does not indicate how many months of source data are available or whether the data are subject to revision by the source agency. Information on the key monthly source data appears each month in the "Business Situation" in the SURVEY OF CURRENT BUSINESS. Additional information on the monthly source data used for the advance estimate is available online from the Department of Commerce's Economic Bulletin Board.<sup>23</sup>

The source data listed consist of a variety of economic measures, such as sales or receipts, wages and salaries, unit sales, housing stock, insurance premiums, expenses, interest rates, mortgage debt, and tax collections. For most components, the source data are "value data"; that is, they encompass both the quantity and price dimensions that are required for current-dollar estimates. In these cases, the methodology indicated in **table 1** covers only the adjustment of the value data to derive estimates consistent with NIPA definitions and coverage.

For those estimates not derived from value data, the table indicates the combination of data with separate quantity and price dimensions that is used to derive the required value estimate and the major adjustments needed to derive estimates consistent with NIPA definitions and coverage. On the product side, a "physical quantity times price" method is used for several components. For example, the estimate for new autos is calculated as unit sales times expenditure per auto (the average list price with options, adjusted for transportation charges, sales tax, dealer discounts, and rebates). On the income side, an "employment times earnings times hours" method and variations of a "stock of assets/liabilities times an effective interest rate" method are used for several components.

Some of the source data shown in **table 1** for the annual estimates are used as indicators to interpolate and extrapolate the levels established by source data that are more comprehensive, and all of the source data shown for the advance quar-

20. BEA has prepared a series of papers that provide detailed descriptions of NIPA concepts and methodologies. See the box "Information About NIPA Methodology."

21. See Parker and Seskin, "Annual Revision," 6–32.

22. For additional details on the release schedule for the NIPA estimates, see the section "Presentation of the NIPA's" in the text.

23. For additional information, see the box "Data Availability."

terly estimates are used to extrapolate the level of the preceding quarter. In addition, extrapolation and interpolation may be based on trends, as is the case when “judgmental trend” is listed in the table.<sup>24</sup>

**Estimating methods.**—Table 1 refers to four methods—commodity flow, retail control, perpetual inventory, and fiscal year analysis—used by BEA for estimating specific components.

The commodity-flow method is used to obtain the value of final users’ purchases of goods and services (that is, commodities) for BEA’s benchmark input-output accounts. These values serve as the benchmark for the NIPA estimates of personal consumption expenditures (PCE), of producers’ durable equipment (PDE), and of the commodity detail for State and local government consumption expenditures and gross investment.<sup>25</sup> This method is also used for PDE in nonbenchmark years, but it is implemented in an abbreviated form. An even more abbreviated commodity-flow method is used for current quarterly estimates of PDE.

The retail-control method is used to estimate over one-third of the value of PCE for periods other than benchmark years. This method provides the indicator series used in extrapolating and interpolating the total of “most goods” and the “control” total to which the PCE categories and residential PDE included in this group must sum. These PCE categories consist of all goods except autos and trucks, food furnished to employees, food and fuel produced and consumed on farms, standard clothing issued to military personnel, school lunches, and net foreign remittances.<sup>26</sup>

The perpetual-inventory method is used to derive estimates of fixed capital stock, which in turn form the basis for the estimates of consumption of fixed capital. This method is based on investment flows and a geometric depreciation formula; it is used instead of direct measurement of the capital stock because direct measurement is seldom statistically feasible on a comprehensive basis.<sup>27</sup>

The fiscal year-analysis method provides the framework for the annual and quarterly estimates of Federal Government consumption expenditures and gross investment. The estimates of expenditures are prepared by program—that is, by activity for a group of line items or for an individual line item in the Budget of the U.S. Government. For most programs, the fiscal year analysis begins by adjusting budget outlays for coverage and for netting and grossing differences between these outlays and NIPA expenditures. The expenditures total (as adjusted) for a program is then classified by type of NIPA expenditure—for example, transfer payments and interest paid—with nondefense consumption expenditures and gross investment determined residually. When a fiscal year analysis is completed, the detailed array of NIPA expenditures by program and by type of expenditure serves as a set of control totals for the quarterly estimates.<sup>28</sup>

**Balance of payments accounts.**—The source data for the foreign transactions reflected in most NIPA components—such as net exports of goods and services and rest-of-the-world corporate profits—are the balance of payments accounts (BPA’s), which are also prepared by BEA.<sup>29</sup> As noted in table 1, for some NIPA components, the BPA estimates are adjusted to conform to NIPA concepts and definitions.<sup>30</sup> Annual estimates of these adjustments and their definitions are shown in NIPA table 4.5, which was last published in the August 1997 SURVEY on page 82; summary quarterly estimates are shown in “Reconciliation Tables” in appendix A of the SURVEY.

**Other information.**—In preparing the annual estimates of several of the income-side components, BEA adjusts the source data for various coverage and conceptual differences. For each subcomponent listed below, an annual NIPA table reconciles the value published by the source agency with the

*produciblx Tangible Wealth in the United States, 1925–89* (Washington, DC: U.S. Government Printing Office, January 1993): M-2–M-15; and *GNP: An Overview*, 17–18. For additional information on the geometric depreciation formula, see “Improved Estimates of Fixed Reproducible Tangible Wealth, 1929–95,” SURVEY 77 (May 1997): 69–92.

28. For additional information and an illustration of the fiscal year-analysis method, see U.S. Department of Commerce, Bureau of Economic Analysis, *Government Transactions*, Methodology Paper Series MP-5 (Washington, DC: U.S. Government Printing Office, 1988): 19–20.

29. See U.S. Department of Commerce, Bureau of Economic Analysis, *The Balance of Payments of the United States: Concepts, Data Sources, and Estimating Procedures*, (Washington, DC: U.S. Government Printing Office, 1990). (The methodologies described in this publication are subject to periodic improvements, which are typically introduced as part of the annual revision of the BPA’s; these improvements are described in the SURVEY articles that cover the annual BPA revisions, most recently in “U.S. International Transactions, Revised Estimates for 1974–96,” SURVEY 77 (July 1997): 43–55.)

30. These adjustments are described in U.S. Department of Commerce, Bureau of Economic Analysis, *Foreign Transactions*, Methodology Paper Series MP-3 (Washington, DC: U.S. Government Printing Office, 1987): 15–25.

24. For a few components, the final quarterly estimates are based on newly available source data that replace judgmental trends.

25. For additional information on the commodity-flow method, see U.S. Department of Commerce, Bureau of Economic Analysis, *Personal Consumption Expenditures*, Methodology Paper Series MP-6 (Washington, DC: U.S. Government Printing Office, 1990): 31–34; and U.S. Department of Commerce, Bureau of Economic Analysis, *GNP: An Overview of Source Data and Estimating Methods*, Methodology Paper Series MP-4 (Washington, DC: U.S. Government Printing Office, 1987): 16–17.

26. For additional information, see *Personal Consumption Expenditures*, 41–54; and *GNP: An Overview*, 17.

27. For additional information on the perpetual-inventory method, see U.S. Department of Commerce, Bureau of Economic Analysis, *Fixed Re-*

NIPA value published by BEA and identifies the BEA adjustments. The following is a list of the subcomponents and their corresponding reconciliation tables, which were last published in the September 1997 SURVEY beginning on page 34: Wages and salaries, table 8.25; farm proprietors' income, table 8.22; nonfarm proprietors' income, table 8.21; corporate profits, table 8.23; net interest, table 8.24; and consumption of fixed capital, table 8.20.

### *Real estimates*


Table 2 shows which one of three methods—deflation, quantity extrapolation, and direct base-year valuation—is used to prepare the quantity index for each detailed product-side component of real GDP and identifies the source data with which the method is implemented.<sup>31</sup> Deflation is used for most of the detailed components. In deflation, the quantity index is obtained by dividing the current-dollar index by an appropriate price

31. For additional information on the calculation of real GDP, see the section "Real output and related measures" in the text.

index that has the base year—currently 1992—equal to 100 and then by multiplying the result by 100.

The quantity-extrapolation and direct-base-year-valuation methods are similar in that they both use explicit quantity data. In quantity extrapolation, quantity indexes are obtained by using a quantity indicator to extrapolate from the base-year value of 100 in both directions. In direct-base-year valuation, quantity indexes are obtained by multiplying the base-year price by actual quantity data for the index period and then expressing the result as an index with the base year equal to 100.

The subcomponents in table 2 are the same as those shown in table 1, but the detail differs to highlight the alternative methodologies used for calculating the real estimates.<sup>32</sup>

Tables 1 and 2 follow. 

32. For the real estimates, the distinction between annual and quarterly methodologies is far less important than it is for the current-dollar estimates. For the relatively few cases in which the annual and quarterly source data differ, the major differences are noted in the entry.

**Table 1.—Principal Source Data and Estimating Methods Used in Preparing Estimates of Current-Dollar GDP**

Component (billions of dollars)	Subcomponent (billions of dollars)	Annual estimates: Source data and methods used to determine level for benchmark and other years or used to prepare an extrapolator or interpolator	Advance quarterly estimates: Source data and methods used to prepare an extrapolator
<b>Product side (GDP of \$7,636.0 billion for 1996)</b>			
<b>Personal consumption expenditures</b> (\$5,207.6)	<b>Durable and nondurable goods:</b> (\$2,169.2) <sup>1</sup>		
	Most goods (except sub-components listed separately) (\$1,821.0)	Benchmark years—Commodity-flow method, starting with manufacturers' shipments from Census Bureau quinquennial census and including an adjustment for exports and imports from Census Bureau foreign trade data. Other years—Retail-control method, using retail trade sales from Census Bureau annual survey or, for most recent year, monthly survey of retail trade.	Same as annual for most recent year.
	New autos (\$86.1)	Physical quantity purchased times average retail price: Unit sales, information to allocate sales among consumers and other purchasers, and average list price with options, adjusted for transportation charges, sales tax, dealer discounts, and rebates, all from trade sources.	Same as annual.
	Net purchases of used autos (\$55.2)	Benchmark years—For net transactions, change in the consumer stock of autos from trade sources. For dealers' margin, retail sales from Census Bureau quinquennial census and margin rate from Census Bureau annual survey of retail trade. Other years except most recent—For net transactions, same as benchmark years. For dealers' margin, franchised dealers' unit sales times sales price, both from trade sources, times margin rate for independent dealers from Census Bureau annual survey; independent dealers' margin from Census Bureau annual survey. Most recent year—For net transactions, same as benchmark years. For dealers' margin, for franchised dealers, unit sales and sales price from trade sources; for independent dealers, sales from Census Bureau monthly survey of retail trade.	For net transactions, residual based on net sales by other sectors. For dealers' margin, unit sales of franchised dealers from trade source and sales price from Bureau of Labor Statistics consumer price index for used cars.
	New trucks (\$63.7)	Benchmark years—Commodity-flow method, starting with manufacturers' shipments from Census Bureau quinquennial census and including an adjustment for exports and imports from Census Bureau foreign trade data. Other years except most recent—Abbreviated commodity-flow method, starting with manufacturers' shipments from Census Bureau annual survey and including an adjustment for exports and imports from Census Bureau foreign trade data. Most recent year—Physical quantity purchased times average retail price: Unit sales and information to allocate sales among consumers and other purchasers from trade sources and average price based on Bureau of Labor Statistics consumer price index for new trucks.	Same as annual for most recent year.
Gasoline and oil <sup>2</sup> (\$122.6)	Benchmark years—Physical quantity purchased times average retail price: Gallons consumed from the Department of Transportation, information to allocate that total among consumers and other purchasers from Federal agencies and trade sources, and average retail price from Census Bureau quinquennial census. Other years except most recent—Same as benchmark years, except average retail price from the Energy Information Administration. Most recent year—Physical quantity purchased times average retail price: Gallons consumed and average price, both from the Energy Information Administration.	Same as annual for most recent year.	

See footnotes at end of table.



Table 1.—Principal Source Data and Estimating Methods Used in Preparing Estimates of Current-Dollar GDP—Continued

Component (billions of dollars)	Subcomponent (billions of dollars)	Annual estimates: Source data and methods used to determine level for benchmark and other years or used to prepare an extrapolator or interpolator	Advance quarterly estimates: Source data and methods used to prepare an extrapolator
<b>Product side (GDP of \$7,636.0 billion for 1996)—Continued</b>			
<b>Personal consumption expenditures—Continued</b>	<b>Durable and nondurable goods—Continued:</b>		
	Food furnished to employees (including military) (\$8.7)	Benchmark years—For commercial employees, number of employees of appropriate industries from Bureau of Labor Statistics tabulations times BEA estimate of per capita expenditures for food; for military personnel, outlays from the <i>Budget of the United States</i> prepared by the Office of Management and Budget.	For commercial employees, same as annual for other years; for military personnel, judgmental trend.
	Expenditures abroad by U.S. residents (\$2.6) less personal remittances in kind to non-residents (\$1.2)	Other years—Same as benchmark years, except per capita expenditures for food based on Bureau of Labor Statistics consumer price index for food.	Judgmental trend.
	<b>Services:</b> (\$3,038.4)	Estimated as part of the balance of payments accounts; see entry for "exports and imports of services, net," under net exports of goods and services.	
	Nonfarm dwellings—space rent for owner-occupied and rent for tenant-occupied (\$752.0)	Benchmark years—Based on data on housing stock and average annual rent from Census Bureau decennial census of housing and residential finance survey, adjusted for utilities billed with rent.	Same as annual: For housing stock, judgmental trend; for average rent, Bureau of Labor Statistics consumer price index for rent.
Rental value of farm dwellings (\$6.1)	Other years—Based on data on housing stock and average annual rent from Census Bureau biennial housing survey or on the number of households from Census Bureau monthly current population survey and Bureau of Labor Statistics consumer price index for rent.	Judgmental trend.	
Motor vehicle and other repair, other purchased intercity transportation, legal and funeral services, barbershops and beauty parlors, nursing homes, laundries, employment agency fees, accounting and tax return preparation services, recreation (except cable TV, casino gambling, parimutuel net receipts, and lotteries), hotels and motels, and other education and research (\$508.1)	Benchmark years—Based on data on housing stock and average annual rent from Census Bureau decennial census of housing and survey of residential finance.	Judgmental trend.	
	Other years—Based on data on net value of real farm housing stock from BEA capital stock series.		
	Benchmark years—Receipts and expenses from Census Bureau quinquennial census adjusted for receipts from business and governments.	For nursing homes, other education and research, employment agency fees, and clubs and fraternal organizations, wages and salaries derived from Bureau of Labor Statistics monthly employment times earnings times hours; for legitimate theaters and motion pictures, receipts from trade sources; for radio and TV repair, number of TV's based on stock and sales from trade source times Bureau of Labor Statistics consumer price index for appliance and furniture repair; for hotels and motels, rooms rented times average price per room from trade source; for others in this group, judgmental trend.	
	Other years—Receipts for spectator sports from trade sources; for legitimate theaters and other education and research, tabulations of wages and salaries of employees covered by State unemployment insurance from the Bureau of Labor Statistics; for others in this group, Census Bureau service annual survey.		

See footnotes at end of table.

**Table 1.—Principal Source Data and Estimating Methods Used in Preparing Estimates of Current-Dollar GDP—Continued**

Component (billions of dollars)	Subcomponent (billions of dollars)	Annual estimates: Source data and methods used to determine level for benchmark and other final or used to prepare an extrapolator or interpolator	Advance quarterly estimates: Source data and methods used to prepare an extrapolator
<b>Product side (GDP of \$7,636.0 billion for 1996)—Continued</b>			
<b>Personal consumption expenditures—Continued</b>	<b>Services—Continued:</b>		
	Physicians, dentists, and other professional medical services (\$357.6)	Benchmark years—For nonprofit professional services, expenses, and for others in this group, receipts, adjusted for government consumption, all from Census Bureau quinquennial census. Other years—Receipts and revenues, adjusted for government consumption, from Census Bureau service annual survey.	For physicians and dentists, judgmental trend; for other professional medical services, wages and salaries derived from Bureau of Labor Statistics monthly employment times earnings times hours.
	Private nursery, elementary, and secondary schools, day care, welfare activities, and trade unions and professional associations (\$148.6)	Benchmark years—For religious-affiliated schools, enrollment from the Department of Education times BEA estimate of average expenditures per pupil; for nursery schools and day care, expenditures from Bureau of Labor Statistics consumer expenditure survey; for others in this group, receipts and expenses from Census Bureau quinquennial census. Other years except most recent—For nursery schools and day care, same as benchmark years; for others in this group, annual tabulations of wages and salaries of employees covered by State unemployment insurance from the Bureau of Labor Statistics. Most recent year—For nursery schools and day care, judgmental trend; for others in this group, tabulations of wages and salaries of employees covered by State unemployment insurance from the Bureau of Labor Statistics.	For political organizations and foundations, judgmental trend; for others in this group, wages and salaries derived from Bureau of Labor Statistics monthly employment times earnings times hours.
	Financial services furnished without payment by banks, credit agencies, and investment companies <sup>3</sup> (\$169.9)	See entry for “imputed—banks, credit agencies, and investment companies” under net interest.	Judgmental trend.
	Brokerage charges and investment counseling, bank service charges, intercity transportation except other, and private higher education (\$148.7)	Years except most recent—For private higher education, expenses, and for others in this group, receipts, all from annual reports of government administrative agencies. Most recent year—For brokerage charges, bank service charges, and intercity transportation, receipts, from annual reports of government administrative agencies; for private higher education, enrollment from the Department of Education times price index for higher education from trade source.	For stock brokerage charges, stock exchange transactions from trade sources; for income from sales of investment company securities, sales of open-end investment company shares from trade source; for other brokerage charges and investment counseling and for bank service charges, judgmental trend; for intercity transportation, receipts from trade sources; for private higher education, wages and salaries derived from Bureau of Labor Statistics monthly employment times earnings times hours.
	Domestic services (\$12.5)	Benchmark years—For cleaning services, receipts from Census Bureau quinquennial census; for other domestic services, number of workers times weekly hours times earnings from the Bureau of Labor Statistics. Other years—Number of workers times weekly hours times earnings from the Bureau of Labor Statistics.	Judgmental trend.

See footnotes at end of table.

Table 1.—Principal Source Data and Estimating Methods Used in Preparing Estimates of Current-Dollar GDP—Continued

Component (billions of dollars)	Subcomponent (billions of dollars)	Annual estimates: Source data and methods used to determine level for benchmark and other years or used to prepare an extrapolator or interpolator	Advance quarterly estimates: Source data and methods used to prepare an extrapolator
<b>Product side (GDP of \$7,636.0 billion for 1996)—Continued</b>			
<b>Personal consumption expenditures—Continued</b>	<b>Services—Continued:</b>		
	Public higher education and hospitals, water and other sanitary services, and lotteries (\$157.7)	Years except most recent—For lotteries, net receipts from Census Bureau quinquennial census and annual surveys of State and local governments, adjusted to a calendar year basis from a fiscal year basis; for others in this group, receipts from the same sources. Most recent year—Judgmental trend.	Same as annual for most recent year.
	Insurance, private hospitals, religious activities, cable TV, utilities, and local transport (\$720.1)	Years except most recent—For life insurance, expenses from trade sources; for medical and hospitalization insurance, premiums and benefits from the Health Care Financing Administration; for other insurance, premiums and benefits from trade sources; for private hospitals, receipts and expenses from Census Bureau quinquennial census (benchmark year), and expenses from trade sources (other years); for religious activities, expenses based on contributions and membership from trade sources; for cable TV and utilities, receipts from government agencies and trade sources; for local transport, receipts from trade source. Most recent year—For life insurance, tabulations of wages and salaries of employees covered by State unemployment insurance from the Bureau of Labor Statistics; for insurance other than life insurance, judgmental trend; for religious activities, expenses based on population from the Census Bureau and per capita disposable personal income from BEA; for local transport, passenger trips from trade source times Bureau of Labor Statistics consumer price index for intracity mass transit; for others in this group, same as other years.	For life insurance, hospitals, and religious activities, wages and salaries derived from Bureau of Labor Statistics monthly employment times earnings times hours; for electricity and gas, projected quantities based on degree-day data from the National Oceanic and Atmospheric Administration times price based on Bureau of Labor Statistics consumer price indexes for utilities; for others in this group, judgmental trend.
	Foreign travel by U.S. residents (\$54.9) less expenditures in the United States by nonresidents (\$82.7)	Estimated as part of the balance of payments accounts; see entry for "exports and imports of services, net," under net exports of goods and services.	Same as annual.
	Other services: Casino gambling, and parimutuel net receipts; other housing except hotels and motels; bridge, etc., tolls; other household operation except repairs and insurance; travel and entertainment card fees; stenographic and reproduction services; and money orders and classified advertising (\$85.0)	Various source data.	For casino gambling, receipts from State agency; for others in this group, judgmental trend.

See footnotes at end of table.

**Table 1.—Principal Source Data and Estimating Methods Used in Preparing Estimates of Current-Dollar GDP—Continued**

Component (billions of dollars)	Subcomponent (billions of dollars)	Annual estimates: Source data and methods used to determine level for benchmark and other years or used to prepare an extrapolator or interpolator	Advance quarterly estimates: Source data and methods used to prepare an extrapolator
<b>Product side (GDP of \$7,636.0 billion for 1996)—Continued</b>			
<b>Fixed investment</b> (\$1,090.7)	<b>Nonresidential structures:</b> (\$215.2) <sup>4</sup>		
	Utilities: Telecommunications (\$11.9)	Value put in place from Census Bureau monthly construction survey.	Same as annual.
	Utilities: Other (\$21.4)	Expenditures from Federal regulatory agencies and trade sources.	Judgmental trend.
	Mining exploration, shafts, and wells (\$16.1)	Benchmark years—Expenditures from Census Bureau quinquennial census. Other years—For petroleum and natural gas, physical quantity times average price: Footage drilled and cost per foot from trade sources; for other mining, expenditures from Census Bureau surveys on capital expenditures.	For petroleum and natural gas, same as annual for other years; for mining, judgmental trend.
	Industrial buildings (\$32.1)	Benchmark years, except 1992—Value put in place from Census Bureau monthly construction survey and improvements from Department of Energy commercial buildings energy consumption survey. For 1992, tabulations from Census Bureau annual capital expenditure survey, adjusted for undercoverage. Other years—Value put in place from Census Bureau monthly construction survey.	Same as annual for other years.
	Other nonfarm buildings and structures (\$129.7)	Benchmark years—Value put in place from Census Bureau monthly construction survey and improvements from Department of Energy commercial buildings energy consumption survey. Other years—Value put in place from Census Bureau monthly construction survey.	Same as annual for other years.
	Farm buildings (\$3.7)	Expenditures for new construction from Department of Agriculture surveys.	Value put in place from Census Bureau monthly construction survey.
	<b>Nonresidential producers' durable equipment:</b> (\$566.2)		
	Equipment, except autos (\$520.9)	Benchmark years—Commodity-flow method, starting with manufacturers' shipments from Census Bureau quinquennial census and including an adjustment for exports and imports from Census Bureau foreign trade data. Other years—Abbreviated commodity-flow method, starting with manufacturers' shipments from Census Bureau annual survey or, for most recent year (except aircraft and trucks), monthly survey of manufactures and including an adjustment for exports and imports from Census Bureau foreign trade data. For aircraft, manufacturers' shipments from Census Bureau current industrial report, adjusted for exports and imports. For trucks, domestic and North American imports, physical quantity purchased times average retail price: Unit sales and information to allocate sales among business and other purchasers from trade sources and average price based on Bureau of Labor Statistics producer price indexes; for truck trailers, shipments from Census Bureau current industrial report.	For trucks, see entry for "new trucks" under personal consumption expenditures; for others in this group, same as annual for other years but with less detail.
	New and used autos (\$45.3)	For new autos, see entry for "new autos" under personal consumption expenditures; for used autos, change in business stock of autos at least 1 year old from trade source.	For new autos, same as annual; for used autos, judgmental trend.

See footnotes at end of table.

**Table 1.—Principal Source Data and Estimating Methods Used in Preparing Estimates of Current-Dollar GDP—Continued**

Component (billions of dollars)	Subcomponent (billions of dollars)	Annual estimates: Source data and methods used to determine level for benchmark and other years or used to prepare an extrapolator or interpolator	Advance quarterly estimates: Source data and methods used to prepare an extrapolator
<b>Product side (GDP of \$7,636.0 billion for 1996)—Continued</b>			
<b>Fixed investment—</b> Continued	<b>Residential investment:</b> (\$309.2) <sup>5</sup>		
	Permanent-site new single-family housing units (\$159.1)	Value put in place based on phased housing starts and average construction cost from Census Bureau monthly construction survey.	Same as annual.
	Permanent-site new multi-family housing units (\$20.3)	Value put in place from Census Bureau monthly construction survey.	Same as annual.
	Mobile homes (\$12.6)	Benchmark years—See entry for “equipment, except autos” under nonresidential producers’ durable equipment. Other years—Physical quantity shipped times price: Shipments from trade sources and average retail price from Census Bureau monthly survey.	Same as annual for other years.
	Improvements (\$74.4)	Expenditures by owner-occupants from Bureau of Labor Statistics quarterly consumer expenditure survey and by landlords from Census Bureau quarterly survey of landlords.	Judgmental trend.
	Brokers’ commissions (\$36.3)	Physical quantity times price times average commission rate: Number of single-family houses sold, mean sales price, and commission rates from Census Bureau monthly construction survey, Census Bureau biennial housing survey, and trade sources.	Same as annual.
	Producers’ durable equipment (\$7.5)	See entry for “most goods” under personal consumption expenditures.	Same as annual.
<b>Change in business inventories</b> (\$25.9)	Manufacturing and trade (\$18.0)	Benchmark years—Inventories from Census Bureau quinquennial censuses revalued to current replacement cost, using information on the proportions of inventories reported using different accounting methods, on the commodity composition of goods held in inventory, and on the turnover period, all from Census Bureau quinquennial censuses and surveys, combined with prices, largely based on Bureau of Labor Statistics producer price indexes. (The difference between Census Bureau change in inventories and BEA change in business inventories is the IVA.) Other years except most recent—Inventories from Census Bureau annual surveys, revalued as described above. Most recent year—For retail auto dealers, quantities times average prices from trade sources; for all other, inventories from Census Bureau monthly surveys, revalued as described above.	Same as annual for most recent year.
	Other nonfarm industries (\$5.0)	Inventories revalued to current replacement cost (except when noted as physical quantity times price) as described for manufacturing and trade: For years except most recent, Internal Revenue Service tabulations of business tax returns; for most recent year, Census Bureau quarterly survey of corporations for mining, monthly quantities from the Energy Information Administration combined with Bureau of Labor Statistics producer price indexes for electric utilities, and for all others, judgmental trend.	For electric utilities, same as annual for most recent year; for all others, judgmental trend.
	Farm (\$2.9)	Changes in physical quantities times current prices from Department of Agriculture surveys.	Judgmental projections by BEA and the Department of Agriculture.

See footnotes at end of table.

**Table 1.—Principal Source Data and Estimating Methods Used in Preparing Estimates of Current-Dollar GDP—Continued**

Component (billions of dollars)	Subcomponent (billions of dollars)	Annual estimates: Source data and methods used to determine level for benchmark and other years or used to prepare an extrapolator or interpolator	Advance quarterly estimates: Source data and methods used to prepare an extrapolator
<b>Product side (GDP of \$7,636.0 billion for 1996)—Continued</b>			
<b>Net exports of goods and services</b> (-\$94.8)	Exports and imports of goods, net (-\$191.5)	Estimated as part of the balance of payments accounts: Export and import documents compiled monthly by the Census Bureau with adjustments by BEA for coverage and valuation to convert the data to a balance-of-payments basis. Adjusted for balance-of-payments coverage of U.S. territories and Puerto Rico with data from the Commonwealth of Puerto Rico, the U.S. Virgin Islands, and the Census Bureau, and coverage of gold adjusted with data from the U.S. Geological Survey and trade sources.	For territorial adjustment and coverage of gold, judgmental trend; for all others, same as annual.
	Exports and imports of services, net (\$96.6)	Estimated as part of the balance of payments accounts: For government transactions, reports by Federal agencies on their purchases and sales abroad; for most others in this group (including travel, passenger fares, other transportation, and royalties and license fees), BEA quarterly or annual surveys (supplemented with data from other sources). Adjusted for balance-of-payments coverage of U.S. territories and Puerto Rico, see entry above; adjusted to include financial services furnished without payment, see entry for "imputed—banks, credit agencies, and investment companies" under net interest, and adjusted for NIPA treatment of military grants and labor income.	For territorial adjustment, judgmental trend; for all others, same as annual.
<b>Government consumption expenditures and gross investment</b> (\$1,406.7)	Federal national defense consumption of general government fixed capital (\$57.3)	Perpetual-inventory calculations at current cost, based on gross investment and on investment prices.	Same as annual.
	Federal national defense, except consumption of general government fixed capital (\$295.4)	Within a control total established by fiscal year analysis: For compensation, military wages from the <i>Budget of the United States</i> prepared by the Office of Management and Budget, civilian wages and benefits from the Office of Personnel Management, and employer contributions for social insurance mainly from outlays from <i>Monthly Treasury Statement</i> ; for other than compensation, by type, based mainly on data from Department of Defense reports.	For components of compensation, employment from the Department of Defense (military) and the Bureau of Labor Statistics (civilian); for other than compensation, same as annual.
	Federal nondefense consumption of general government fixed capital (\$11.2)	Perpetual-inventory calculations at current cost, based on gross investment and on investment prices.	Same as annual.

See footnotes at end of table.

Table 1.—Principal Source Data and Estimating Methods Used in Preparing Estimates of Current-Dollar GDP—Continued

Component (billions of dollars)	Subcomponent (billions of dollars)	Annual estimates: Source data and methods used to determine level for benchmark and other years or used to prepare an extrapolator or interpolator	Advance quarterly estimates: Source data and methods used to prepare an extrapolator
<b>Product side (GDP of \$7,636.0 billion for 1996)—Continued</b>			
<b>Government consumption expenditures and gross investment—</b> Continued	Federal nondefense, except consumption of general government fixed capital (\$156.1)	Within a control total established by fiscal year analysis: For Commodity Credit Corporation inventory change, book values of acquisitions and physical quantities of dispositions from agency reports times average market prices from the Department of Agriculture; for financial services furnished without payment, see entry for "imputed—banks, credit agencies, and investment companies" under net interest; for compensation, civilian wages and benefits from the Office of Personnel Management and employer contributions for social insurance mainly from outlays from <i>Monthly Treasury Statement</i> ; for petroleum sales (Naval Petroleum Reserve), distribution and price data from the Department of Energy; for research and development, obligations from the National Science Foundation and disbursements from the National Aeronautics and Space Administration; for construction, value put in place from Census Bureau monthly construction survey; for all other, outlays from <i>Monthly Treasury Statement</i> .	For components of compensation, employment from the Bureau of Labor Statistics; for other than compensation, same as annual.
	State and local compensation of general government employees, except force-account construction (\$547.2)	For wages and salaries, tabulations of wages and salaries of employees covered by State unemployment insurance from the Bureau of Labor Statistics; for employer contributions for social insurance, tabulations from the Social Security Administration, other agencies administering social insurance programs, and Census Bureau surveys of State and local government retirement funds, adjusted to a calendar year basis from a fiscal year basis; for other labor income, trade sources, Health Care Financing Administration, and Census Bureau surveys of State and local governments, adjusted to a calendar year basis from a fiscal year basis.	For wages and salaries, derived from Bureau of Labor Statistics monthly employment times earnings from Bureau of Labor Statistics employment cost index, if available; otherwise, judgmental trend. For other compensation, judgmental trend.
	State and local structures (\$128.5)	Value of construction put in place from Census Bureau monthly construction survey.	Same as annual.
	State and local brokerage charges and financial services furnished without payment (\$13.0)	See entries under personal consumption expenditures for services.	See entries under personal consumption expenditures for services.
	State and local consumption of general government fixed capital (\$56.6)	Perpetual-inventory calculations at current cost, based on gross investment and on investment prices.	Same as annual.
State and local investment in equipment and consumption expenditures, except compensation, consumption of fixed capital, brokerage charges, and financial services furnished without payment. (\$141.4)	Years except most recent—Total expenditures from Census Bureau quinquennial censuses and annual surveys of State and local governments, selectively replaced with source data that are more appropriate for the NIPA's and adjusted as follows: For coverage; for netting and grossing differences; to a calendar year basis from a fiscal year basis; for other timing differences; to exclude interest, subsidies, net expenditures of government enterprises, and transfer payments; and to exclude compensation and structures. Most recent year—Judgmental trend.	Same as annual for most recent year.	

See footnotes at end of table.

**Table 1.—Principal Source Data and Estimating Methods Used in Preparing Estimates of Current-Dollar GDP—Continued**

Component (billions of dollars)	Subcomponent (billions of dollars)	Annual estimates: Source data and methods used to determine level for benchmark and other years or used to prepare an extrapolator or interpolator	Advance quarterly estimates: Source data and methods used to prepare an extrapolator
<b>Income side</b> (Gross national income of \$7,697.6 billion for 1996)			
<b>Compensation of employees</b> <sup>6</sup> (\$4,426.9)	Wage and salary accruals: Private industries (\$2,991.0)	For most industries, annual tabulations of wages and salaries of employees covered by State unemployment insurance from the Bureau of Labor Statistics; for remainder, wages from a variety of sources (such as the Department of Agriculture for farms and the Railroad Retirement Board for railroad transportation), adjusted for understatement of income on tax returns and for several coverage differences.	For most industries, wages and salaries derived from Bureau of Labor Statistics monthly employment times earnings times hours; for others, judgmental trend.
	Wage and salary accruals: Federal Government (\$177.2)	For civilians, wages from the Office of Personnel Management; for military personnel, wages from the <i>Budget of the United States</i> prepared by the Office of Management and Budget.	For civilians, employment from the Bureau of Labor Statistics and judgmental trend; for military personnel, employment from the Department of Defense and judgmental trend.
	Wage and salary accruals: State and local governments (\$465.4)	Mainly tabulations of wages and salaries of employees covered by State unemployment insurance from the Bureau of Labor Statistics.	Derived from Bureau of Labor Statistics monthly employment times earnings from Bureau of Labor Statistics employment cost index, if available, otherwise judgmental trend.
	Employer contributions for social insurance (\$385.7)	Years except most recent—Tabulations from the Social Security Administration and other agencies administering social insurance programs, and Census Bureau surveys of State and local government retirement funds, adjusted to a calendar year basis from a fiscal year basis. Most recent year—Census Bureau surveys of State retirement funds, adjusted to a calendar year basis from a fiscal year basis.	For Federal programs, BEA-derived wages and salaries of employees covered by the programs; for State and local government programs, judgmental trend.
	Other labor income: Group health insurance (\$262.7)	Years except 3 most recent—Total contributions from the Health Care Financing Administration less employee contributions from the Bureau of Labor Statistics consumer expenditure survey. Three most recent years—Employer costs for employee compensation from the Bureau of Labor Statistics.	Judgmental trend.
	Other labor income: Pension and profit-sharing (\$94.8)	Years except 2 most recent—Tabulations from the Department of Labor. Two most recent years—Employer costs for employee compensation from the Bureau of Labor Statistics or Internal Revenue Service tabulations of business tax returns.	Judgmental trend.
	Other labor income: Workers' compensation (\$37.0)	Years except most recent—Employer contributions from trade sources and contributions for self-insured plans from the Social Security Administration. Most recent year—Judgmental trend.	Judgmental trend.
	Other labor income: Group life insurance (\$7.4)	Years except most recent—Group premiums and estimates of employer share from trade sources. Most recent year—Judgmental trend.	Judgmental trend.

See footnotes at end of table.



Table 1.—Principal Source Data and Estimating Methods Used in Preparing Estimates of Current-Dollar GDP—Continued

Component (billions of dollars)	Subcomponent (billions of dollars)	Annual estimates: Source data and methods used to determine level for benchmark and other years or used to prepare an extrapolator or interpolator	Advance quarterly estimates: Source data and methods used to prepare an extrapolator
<b>Income side</b> (Gross national income of \$7,697.6 billion for 1996)—Continued			
<b>Proprietors' income with IVA and CCAj</b> (\$520.3)	Farm income with IVA (\$45.0)	Based on Department of Agriculture data on net income, obtained by deriving gross income (cash receipts from marketing, inventory change, government payments, other cash income, and nonmoney income) and subtracting production expenses, adjusted to exclude corporate income from Internal Revenue Service tabulations of business tax returns and adjusted to a NIPA basis.	For crops, BEA quarterly allocation of Department of Agriculture annual projections of crop output; for livestock, Department of Agriculture quarterly projections of cash receipts and inventories; for both crops and livestock, quarterly allocation of Department of Agriculture annual projections of government subsidy payments and production expenses.
	Farm CCAj (-\$7.8)	See entry for "CCAj" under consumption of fixed capital.	
	Nonfarm income (\$455.3)	Years except most recent—Income from Internal Revenue Service tabulations of business tax returns, adjusted for understatement of income on tax returns and for several conceptual differences.	Same as annual for most recent year.
	Most recent year—For construction, trade, and services, indicators of activity (such as value of housing put in place); for most others, judgmental trend.		
	Nonfarm IVA (-\$0.2)	See entry for "IVA" under corporate profits with IVA and CCAj.	
Nonfarm CCAj (\$28.0)	See entry for "CCAj" under consumption of fixed capital.		
<b>Rental income of persons with CCAj</b> (\$146.3)	Owner-occupied nonfarm housing (\$109.7)	Benchmark years—Derived as space rent (see entry for "nonfarm dwellings" under personal consumption expenditures) less related expenses, including maintenance and repair from Bureau of Labor Statistics quarterly consumer expenditure survey, mortgage interest, and property taxes from Census Bureau decennial survey of residential finance.	For owner-occupied space rent, same as annual; for depreciation, interest, and taxes, based on NIPA estimates of those components; for other expenses, judgmental trend.
	Other years—Same as benchmark years, except mortgage interest, based on mortgage debt from the Federal Reserve Board times a BEA interest rate, and property taxes from Census Bureau quarterly surveys of State and local tax collections.		
	Tenant-occupied nonfarm housing (\$52.7)	Same as owner-occupied nonfarm housing, adjusted to cover only rental income accruing to persons not primarily engaged in the real estate business.	Same as annual.
	Farms owned by nonoperator landlords (\$6.8)	Prepared in conjunction with farm proprietors' income; see entry for "farm income with IVA" under proprietors' income with IVA and CCAj.	Judgmental trend.
	Nonfarm nonresidential properties (\$15.8)	Years through 1983—Rents paid and received by business and government, adjusted for expenses associated with property (mainly depreciation, taxes, interest, and repairs) from Internal Revenue Service tabulations of business tax returns, Census Bureau surveys, and the <i>Budget of the United States</i> prepared by the Office of Management and Budget.	Judgmental trend.
	Other years—Judgmental trend.		
	Royalties (\$8.3)	Years except most recent—Internal Revenue Service tabulations of royalties reported on individual income tax returns. Most recent year—Judgmental trend.	Same as annual for most recent year.
CCAj (-\$47.0)	See entry for "CCAj" under consumption of fixed capital.		

See footnotes at end of table.

**Table 1.—Principal Source Data and Estimating Methods Used in Preparing Estimates of Current-Dollar GDP—Continued**

Component (billions of dollars)	Subcomponent (billions of dollars)	Annual estimates: Source data and methods used to determine level for benchmark and other years or used to prepare an extrapolator or interpolator	Advance quarterly estimates: Source data and methods used to prepare an extrapolator
<b>Income side</b> (Gross national income of \$7,697.6 billion for 1996)—Continued			
<b>Corporate profits with IVA and CCAadj</b> (\$735.9)	Domestic profits before tax (\$580.7)	Years except most recent—Receipts less deductions from Internal Revenue Service tabulations of business tax returns, adjusted for understatement of income on tax returns and for several conceptual differences. Most recent year—Profits from Census Bureau quarterly survey of corporate profits, regulatory agency reports, and compilations of publicly available corporate financial statements.	For some industries in transportation and some in finance, etc., judgmental trend; for others, same as annual for most recent year. (Released at time of preliminary estimate of GDP for the first, second, and third quarters and of final estimate for the fourth quarter.)
	Rest-of-the-world profits before tax (\$95.9)	Estimated as part of the balance of payments accounts: For direct investment income, BEA surveys; for portfolio income, Treasury Department surveys. Adjusted for NIPA coverage of U.S. territories and Puerto Rico—see entry for "exports and imports of goods, net," under net exports of goods and services.	Same as annual. (Released on same schedule as domestic profits before tax.)
	IVA (-\$2.5)	The IVA on the income side (for corporations and for nonfarm sole proprietorships and partnerships) and the IVA on the product side (described under the entry for change in business inventories) differ because the source data reflect different proportions of accounting methods (last-in, first-out (LIFO), etc.) underlying reported inventories. The income-side IVA is based on the product-side IVA, adjusted by the relationship between non-LIFO inventories from Internal Revenue Service tabulations of business tax returns and non-LIFO inventories from the Census Bureau.	Same as annual.
	CCAadj (\$61.8)	See entry for "CCAadj" under consumption of fixed capital.	
<b>Net interest</b> (\$425.1)	Domestic monetary, net (\$87.6)	Years except most recent—For farm interest paid, Department of Agriculture surveys; for residential mortgage interest paid, Census Bureau decennial residential finance survey and mortgage debt from the Federal Reserve Board times a BEA interest rate; for most other interest paid and received by business, Internal Revenue Service tabulations of business tax returns, adjusted for misreporting on tax returns and for several conceptual differences. Most recent year—For farm and mortgage interest paid, same as other years; for other interest, interest receipts and payments from regulatory agencies (such as the Federal Deposit Insurance Corporation), from trade sources, or obtained by applying BEA interest rates to interest-bearing assets/liabilities from Federal Reserve Board flow-of-funds accounts.	Derived by combining estimates of (1) interest received by persons, (2) government interest paid and received, and (3) interest paid by persons. For (1), judgmental trend; for (2), <i>Monthly Treasury Statement</i> for Federal and judgmental trend for State and local; for (3), consumer debt from the Federal Reserve Board times BEA estimates of interest rates. (Released on same schedule as domestic profits before tax.)
	Rest-of-the-world monetary, net (-\$76.4)	Estimated as part of the balance of payments accounts: For direct investment income, BEA surveys; for portfolio income, Treasury Department surveys. Adjusted for NIPA coverage of U.S. territories and Puerto Rico—see entry for "exports and imports of goods, net," under net exports of goods and services.	Same as annual. (Released on same schedule as domestic profits before tax.)

See footnotes at end of table.

Table 1.—Principal Source Data and Estimating Methods Used in Preparing Estimates of Current-Dollar GDP—Continued

Component (billions of dollars)	Subcomponent (billions of dollars)	Annual estimates: Source data and methods used to determine level for benchmark and other years or used to prepare an extrapolator or interpolator	Advance quarterly estimates: Source data and methods used to prepare an extrapolator
<b>Income side</b> (Gross national income of \$7,697.6 billion for 1996)—Continued			
<b>Net interest—</b> Continued	Imputed—banks, credit agencies, and investment companies (\$180.1)	Property income earned on investment of deposits and monetary interest paid to depositors (and for mutual depositories, profits from Internal Revenue Service tabulations of business tax returns) from annual reports of regulatory agencies and the Federal Reserve Board. Imputed interest (financial services furnished without payment) is allocated to persons, government, and the rest of the world on the basis of deposit liabilities from the same sources.	Judgmental trend.
	Imputed—life insurance carriers and private non-insured pension plans (\$233.7)	Property income earned (and for life insurance carriers, profits) from Internal Revenue Service tabulations of business tax returns, trade sources, and the Federal Reserve Board.	Judgmental trend. (Released on same schedule as domestic profits before tax.)
<b>Business transfer payments</b> (\$33.6)		Payments to persons: For charitable contributions, for years except most recent, Internal Revenue Service tabulations of business tax returns or, for most recent year, judgmental trend; for other components (such as liability payments for personal injury), for years except most recent, information from government agency reports and trade sources or, for most recent year, judgmental trend. Payments to the rest of the world: Estimated as part of the balance of payments accounts.	Judgmental trend.
<b>Indirect business tax and nontax liability</b> (\$604.8)	Federal Government (\$95.8)	For excise taxes, collections from the Bureau of Alcohol, Tobacco, and Firearms and the Internal Revenue Service; for customs duties, receipts from <i>Monthly Treasury Statement</i> ; and for nontaxes (such as fines), receipts from the <i>Budget of the United States</i> prepared by the Office of Management and Budget.	For customs duties, <i>Monthly Treasury Statement</i> ; for most excise taxes, derived from indicators of activity (such as gasoline production for gasoline tax); for others in this group, judgmental trend.
	State and local governments (\$508.9)	Receipts from Census Bureau quinquennial censuses and annual and quarterly surveys, adjusted to a calendar year basis from a fiscal year basis.	Judgmental trend.
<b>Subsidies less current surplus of government enterprises</b> (\$25.4)	Federal Government (\$37.7)	For subsidies, payments by the Commodity Credit Corporation from agency reports and, for most other agencies, outlays from <i>Monthly Treasury Statement</i> ; for current surplus, mainly reports of various agencies, such as the Postal Service, and consumption of fixed capital estimates derived with perpetual-inventory calculations at current cost, based on gross investment and on investment prices.	For subsidies, Commodity Credit Corporation reports and judgmental trend; for current surplus, judgmental trend and consumption of fixed capital estimates derived with perpetual-inventory calculations at current cost, based on gross investment and on investment prices.
	State and local governments (-\$12.3)	For subsidies, limited to railroad, Census Bureau annual surveys of expenditures, adjusted to a calendar year basis from a fiscal year basis. For current surplus: For current operating receipts, mainly revenue data from Census Bureau annual surveys of State and local governments, adjusted to a calendar year basis from a fiscal year basis; for current operating expenditures, see entries (1) for "State and local investment in equipment and consumption expenditures, except compensation, consumption of fixed capital, brokerage charges, and financial services furnished without payment" and (2) for "State and local consumption of general government fixed capital" under Government consumption expenditures and gross investment.	Judgmental trend.

See footnotes at end of table.

**Table 1.—Principal Source Data and Estimating Methods Used in Preparing Estimates of Current-Dollar GDP—Continued**

Component (billions of dollars)	Subcomponent (billions of dollars)	Annual estimates: Source data and methods used to determine level for benchmark and other years or used to prepare an extrapolator or interpolator	Advance quarterly estimates: Source data and methods used to prepare an extrapolator
<b>Income side</b> (Gross national income of \$7,697.6 billion for 1996)—Continued			
<b>Consumption of fixed capital</b> (\$830.1)	<b>Government:</b> (\$147.4)	Perpetual-inventory calculations at current cost, based on gross investment and on investment prices.  Perpetual-inventory calculations at current cost, based on gross investment and on investment prices.  Perpetual-inventory calculations at current cost, based on gross investment and on investment prices.  Years except most recent—For depreciation of corporations and of nonfarm sole proprietorships and partnerships, Internal Revenue Service tabulations of business tax returns, adjusted for several conceptual differences; for other depreciation (including noncorporate farms, nonprofit institutions, and owner-occupied houses), perpetual-inventory calculations; for accidental damage to fixed capital, losses reported to insurance companies and government agencies. Most recent year—For depreciation of corporations and nonfarm sole proprietorships and partnerships, BEA estimates of tax-return-based depreciation; for other depreciation and accidental damage to fixed capital, same as other years.  For corporations and nonfarm sole proprietorships and partnerships, the difference between tax-return-based calculations and perpetual-inventory calculations; for other (including noncorporate farms, nonprofit institutions, and owner-occupied houses), the difference between perpetual-inventory calculations at historical cost and current cost.	Same as annual.  Same as annual.  Same as annual.  Judgmental trend.  Judgmental trend.
	General government (\$125.1)		
	Government enterprise (\$22.3)		
	<b>Private:</b> (\$682.7)		
	Capital consumption allowances (\$709.9)		
	Less: CCA <sub>adj</sub> (\$27.1)		

1. Includes \$10.6 billion for food produced and consumed on farms, standard clothing issued to military personnel, and used trucks.

2. The retail-control method cited under "personal consumption expenditures (PCE) for most goods" is based on retail trade sales data that include sales of gasoline service stations. Estimates of PCE for gasoline and oil are derived separately and are deducted from the retail-control totals (that include goods sold by gasoline service stations) to derive the estimates for "PCE for most goods."

3. Also referred to as "services furnished without payment by financial intermediaries, except life insurance carriers and private noninsured pension plans."

4. Includes \$0.5 billion for brokers' commissions on sale of structures and net purchases of used

structures.

5. Includes -\$1.0 billion for other structures (dormitories, fraternity and sorority houses, nurses' homes, etc.) and net purchases of used structures.

6. Includes -\$2.6 billion for wage and salary accruals: Rest of the world, net, and \$5.7 billion for other labor income: Supplemental unemployment, directors' fees, and judicial fees.

CCA<sub>adj</sub> Capital consumption adjustment

IVA Inventory valuation adjustment

NIPA National income and product account

Source: 1996 estimates—SURVEY OF CURRENT BUSINESS, August 1997.

Table 2.—Methodology Used in Preparing Estimates of Real GDP

Component	Subcomponent	Deflation, using price based on—		Using quantity for—	
		Components of the Consumer Price Index (CPI) or the Producer Price Index (PPI)	Other	Extrapolation	Direct valuation
<b>Personal consumption expenditures</b>	<b>Durable and nondurable goods:</b>				
	Most goods (except sub-components listed separately).	Except as noted, CPI; military clothing, PPI.	Computers, BEA price index, Bureau of Labor Statistics import price indexes, and PPI.		
	New autos .....	CPI			Used autos, in two parts: (1) Margin, unit sales from trade sources with dealer margins from Census Bureau and trade sources; (2) net transactions, net change in unit stock of autos held by consumers by year of original sale, valued by depreciated original value in base-year dollars.
	Net purchases of used autos.	.....	.....	.....	
	New trucks .....	CPI			
	Gasoline and oil .....	CPI			
	Food furnished to employees (including military).	CPI			
	Expenditures abroad by U.S. residents less personal remittances in kind to nonresidents.	.....	Foreign consumer price indexes (exchange-rate adjusted).		
	<b>Services:</b>				
	Nonfarm dwellings—space rent for owner-occupied and rent for tenant-occupied.	CPI			
Rental value of farm dwellings.	.....	.....	Net value of farm housing stock from BEA capital stock series.		

See footnotes at end of table.

**Table 2.—Methodology Used in Preparing Estimates of Real GDP—Continued**

Component	Subcomponent	Deflation, using price based on—		Using quantity for—	
		Components of the Consumer Price Index (CPI) or the Producer Price Index (PPI)	Other	Extrapolation	Direct valuation
<b>Personal consumption expenditures—Continued</b>	<b>Services—Continued:</b>				
	Motor vehicle and other repair, other purchased intercity transportation, legal and funeral services, barbershops and beauty parlors, nursing homes, laundries, employment agency fees, accounting and tax return preparation services, recreation (except cable TV, casino gambling, parimutuel net receipts, and lotteries), hotels and motels, and other education and research.	Except as noted, CPI; private for-profit nursing homes, PPI.	Private nonprofit nursing homes, composite index of input prices from the Health Care Financing Administration; clubs and fraternal organizations, and other education and research, BEA composite index of input prices.		
	Physicians, dentists, and other professional medical services.	Except as noted, CPI; physicians, PPI.			
	Private nursery, elementary, and secondary schools, day care, welfare activities, and trade unions and professional associations.	.....	BEA composite indexes of input prices.		
	Public education and hospitals, water and other sanitary services, and lotteries.	Except as noted, CPI; public hospitals, PPI.			
	Financial services furnished without payment by banks, credit agencies, and investment companies. <sup>1</sup>	.....	.....	Paid employee hours of relevant financial institutions.	
	Brokerage charges and investment counseling, bank service charges, intercity transportation except other, and private higher education.	Except as noted, CPI.	Airline transportation, BEA index based on revenue per passenger mile from the Department of Transportation and trade source, and CPI for airline fares; private higher education, BEA composite index of input prices.	Stock brokerage charges, BEA orders, derived from volume data from the Securities and Exchange Commission and trade sources.	
Domestic services .....	CPI				

See footnotes at end of table.

Table 2.—Methodology Used in Preparing Estimates of Real GDP—Continued

Component	Subcomponent	Deflation, using price based on—		Using quantity for—	
		Components of the Consumer Price Index (CPI) or the Producer Price Index (PPI)	Other	Extrapolation	Direct valuation
<b>Personal consumption expenditures—</b> Continued	<b>Services—Continued:</b>				
	Insurance, private hospitals, religious activities, cable TV, utilities, and local transport.	Except as noted, CPI; private for-profit hospitals, PPI.	Life insurance and religious activities, BEA composite indexes of input prices; private nonprofit hospitals, composite index of input prices from the Health Care Financing Administration.	Auto insurance, premiums deflated by CPI; health insurance, benefits deflated by CPI.	
	Foreign travel by U.S. residents less expenditures in the United States by nonresidents.	Expenditures in the United States, CPI.	Foreign travel, BEA composite index of foreign consumer price indexes (exchange-rate adjusted).		
	Other services: Casino gambling, and parimutuel net receipts; other housing except hotels and motels; bridge, etc., tolls; other household operation except repairs and insurance; travel and entertainment card fees; stenographic and reproduction services; and money orders and classified advertising.	Except as noted, CPI.	.....	Parimutuel net receipts, gross winnings deflated by CPI.	
<b>Fixed investment</b>	<b>Nonresidential structures:</b>				
	Utilities .....	Gas and petroleum pipelines, PPI.	Telecommunications, cost index from trade source; railroads, BEA price index; other, cost indexes from government agencies and trade sources.		
	Mining exploration, shafts, and wells.	Casing, PPI .....	Exploration, cost index from trade source; mines, implicit price deflator for nonfarm nonresidential buildings.	Drilling, footage by geographic area from trade source.	
	Nonfarm buildings and structures.	.....	Buildings, BEA index based on cost index from trade source and on Census Bureau price deflator for single-family houses under construction; structures, cost indexes from government agencies.		
	Farm buildings .....	.....	Implicit price deflator for nonfarm nonresidential buildings.		

See footnotes at end of table.

**Table 2.—Methodology Used in Preparing Estimates of Real GDP—Continued**

Component	Subcomponent	Deflation, using price based on—		Using quantity for—	
		Components of the Consumer Price Index (CPI) or the Producer Price Index (PPI)	Other	Extrapolation	Direct valuation
<b>Fixed investment—</b> Continued	<b>Nonresidential producers' durable equipment:</b>				
	Equipment, except autos, telephone and telegraph installation, and telephone switching equipment.	Domestic components, except as noted, PPI; imported transportation equipment, PPI.	Imported components, except computers and transportation equipment, Bureau of Labor Statistics import price indexes; domestic and imported computers, BEA price index, Bureau of Labor Statistics import price indexes, and PPI.		
	New and used autos .....	New autos, CPI.	.....	.....	Used autos, in two parts: (1) Margin, unit sales from trade sources with dealer margins from Census Bureau and trade sources; (2) net transactions, net change in unit stock of autos held by business by year of original sale, valued by depreciated original value in base-year dollars.
	Telephone and telegraph installation.	.....	BEA cost index.		
	Telephone switching equipment.	.....	BEA price index.		
	<b>Residential investment:</b>				
	Permanent-site new single-family housing units.	.....	Census Bureau price deflator for single-family houses under construction.		
	Permanent-site new multi-family housing units.	.....	BEA price index.		
	Mobile homes .....	PPI			
	Improvements .....	Major replacements, CPI.	Additions and alterations, BEA index based on Census Bureau price deflator for single-family houses under construction and CPI component.		
Brokers' commissions .....	.....	.....	Numbers of new and used houses sold from Census Bureau and trade sources.		
Producers' durable equipment.	CPI				

See footnotes at end of table.



Table 2.—Methodology Used in Preparing Estimates of Real GDP—Continued

Component	Subcomponent	Deflation, using price based on—		Using quantity for—	
		Components of the Consumer Price Index (CPI) or the Producer Price Index (PPI)	Other	Extrapolation	Direct valuation
<b>Change in business inventories</b>	Nonfarm: Purchased goods, all industries.	Except as noted, PPI.	Crude petroleum, index from the Energy Information Administration; computers, BEA price index, Bureau of Labor Statistics import price indexes, and PPI; imported goods purchased by trade industries, Bureau of Labor Statistics import price indexes.	.....	Quantities and prices of stocks of coal, petroleum, and natural gas for utilities from the Energy Information Administration.
	Nonfarm: Work-in-process and finished goods, manufacturing.	Except as noted, PPI; some overhead cost items, CPI.	BEA indexes of unit labor cost.		
	Farm .....	.....	Department of Agriculture average market prices..		
<b>Net exports of goods and services</b> <sup>2</sup>	Exports and imports of goods. <sup>2</sup>	Gold; transportation equipment; selected agricultural foods, feeds, and beverages; and selected imports of refined petroleum, PPI.	Bureau of Labor Statistics export and import price indexes; electric energy exports and imports, and petroleum imports, unit-value indexes based on Census Bureau values and quantities; computer and semiconductor exports, BEA price indexes and PPI; computer and semiconductor imports, BEA price indexes and Bureau of Labor Statistics import price indexes.		
	Exports and imports of services. <sup>2</sup>	Travel receipts, medical receipts, and students' expenditures, CPI; freight and port expenditures and telecommunications, PPI.	Military transfers and direct defense expenditures abroad, selected deflators for Federal national defense, except consumption of fixed capital (see below); passenger fares, Bureau of Labor Statistics export and import price indexes; travel payments and U.S. Government payments for miscellaneous services, BEA composite index of foreign consumer price indexes (exchange-rate adjusted); royalties and fees, and other private services, implicit price deflator for final sales to domestic purchasers.	Exports of financial services furnished without payment, <sup>1</sup> paid employee hours of relevant financial institutions.	

See footnotes at end of table.

**Table 2.—Methodology Used in Preparing Estimates of Real GDP—Continued**

Component	Subcomponent	Deflation, using price based on—		Using quantity for—	
		Components of the Consumer Price Index (CPI) or the Producer Price Index (PPI)	Other	Extrapolation	Direct valuation
<b>Government consumption expenditures and gross investment</b>	Federal national defense consumption of general government fixed capital.	.....	.....	.....	Perpetual-inventory calculations, based on gross investment.
	Federal national defense, except consumption of general government fixed capital.	Selected goods, PPI; utilities and communications, CPI and PPI.	Some goods, some services, and most military structures, BEA indexes based on Department of Defense prices paid; some services, Bureau of Labor Statistics monthly earnings; computers, BEA price index, Bureau of Labor Statistics import price indexes, and PPI; non-military structures, cost indexes from trade sources and government agencies.	Military compensation, full-time equivalent employment by rank and length of service; civilian compensation, full-time equivalent employment by grade, adjusted for change from base year in hours worked.	Many goods, some services, and a few military structures, quantities and prices from Department of Defense reports; electricity and natural gas quantities from the Department of Energy.
	Federal nondefense consumption of general government fixed capital.	.....	.....	.....	Perpetual-inventory calculations, based on gross investment.
	Federal nondefense, except consumption of general government fixed capital.	Most goods, PPI; rent, utilities, and communications, CPI.	Structures, cost indexes from trade sources and government agencies; computers, BEA price index, Bureau of Labor Statistics import price indexes, and PPI; most services, Bureau of Labor Statistics monthly earnings.	Compensation, full-time equivalent employment by grade, adjusted for change from base year in hours worked; financial services furnished without payment, <sup>1</sup> paid employee hours of relevant financial institutions.	Net purchases of agricultural commodities by the Commodity Credit Corporation, quantities by crop from agency reports with Department of Agriculture prices; selected petroleum transactions, quantities and prices from the Department of Energy.
	State and local compensation of general government employees.	.....	.....	Employees in education, full-time equivalent employment by education and experience, adjusted for change from base year in hours worked; other employees, full-time equivalent employment, adjusted for change from base year in hours worked.	
	State and local structures.	.....	Cost indexes from trade sources and government agencies.		

See footnotes at end of table.

Table 2.—Methodology Used in Preparing Estimates of Real GDP—Continued

Component	Subcomponent	Deflation, using price based on—		Using quantity for—	
		Components of the Consumer Price Index (CPI) or the Producer Price Index (PPI)	Other	Extrapolation	Direct valuation
<b>Government consumption expenditures and gross investment—</b> Continued	State and local brokerage charges and financial services furnished without payment.	.....	See entries under personal consumption expenditures for services.		
	State and local consumption of general government fixed capital.	.....	.....	.....	Perpetual-inventory calculations, based on gross investment.
	State and local investment in equipment and consumption expenditures, except compensation, consumption of fixed capital, brokerage charges, and financial services furnished without payment.	Services, except as noted, and goods used in maintenance and repair, CPI; goods, except as noted, and electricity, PPI.	Transportation, books, and postal services, BEA indexes based on Department of Defense prices paid; computers, BEA price index, Bureau of Labor Statistics import price indexes, and PPI.		

1. Also referred to as "services furnished without payment by financial intermediaries, except life insurance carriers and private noninsured pension plans."

2. Estimates of real exports and imports of goods and services are prepared separately. Real receipts and payments of factor income from the rest of the world—the difference between GDP

and GNP—are prepared by deflation using the implicit price deflator for final sales to domestic purchasers except for imputed interest paid to nonresidents, which is prepared by extrapolation using paid employee hours of relevant institutions.