

# GOVERNMENT TRANSACTIONS

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*Measuring the Nation's Economy.*



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## Preface

This paper is one of a series of papers designed to provide information on the methodologies that are used to prepare BEA's National Income and Product Accounts (NIPAs).

Part I of *Government Transactions* (MP-5) presents the conceptual basis and framework of government transactions. Part II describes the preparation of Federal government transactions. Part III describes the preparation of state and local government transactions. Part IV describes the preparation of estimates of government consumption expenditures and gross investment by function.

The current MP-5 comes fifteen years after the previous *Government Transactions* methodology paper, which was published in November 1988. It reflects improved estimation methodologies and it provides descriptions of new and better source data that are used to prepare estimates of government transactions. Most revisions to the sources and methods used to prepare estimates of government transactions presented in this revised MP-5 were described initially in articles that discussed comprehensive and annual NIPA revisions in BEA's monthly journal, the *Survey of Current Business*.

Information on other methodologies and methodology papers are available on BEA's Internet Web site at <http://www.bea.gov/bea/mp.htm>.

General questions and comments concerning this methodology paper should be addressed to Brooks B. Robinson, Chief of the Government Division. For specific questions and comments on the "Introduction," contact D. Timothy Dobbs, Government Division Senior Economist; on "Federal Government Transactions," contact Pamela A. Kelly, Chief of the Federal Branch; on "State and Local Government Transactions," contact Bruce E. Baker; Chief of the State and Local Branch; and on "Government Consumption Expenditures and Gross Investment by Function," contact Brooks B. Robinson.

**PART I**  
**INTRODUCTION**

## Acronyms and common references

BEA	Bureau of Economic Analysis
CFC	Consumption of Fixed Capital
GDP	Gross Domestic Product
NIPA	National income and product account
SNA	System of National Accounts (1993), an international standard for publication of economic accounts. See paragraph 5
Survey	The <i>Survey of Current Business</i> , BEA's monthly magazine.

BEA's web site: <http://www.bea.gov>

BEA's gross domestic product web page: <http://www.bea.gov/bea/dn/home/gdp.htm>. (This page may also be reached from <http://www.bea.gov> by selecting "Gross domestic product.")

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## 1. INTRODUCTION

This paper presents the conceptual basis and framework of government transactions in the National Income And Product Accounts (NIPAs); describes the presentation of the estimates; and describes the sources and methods used to prepare annual, quarterly, and monthly estimates of government transactions.<sup>1</sup> Part I, the introduction, discusses the recording of government transactions in the NIPAs; the relation of the NIPA measures of government current receipts, current expenditures, and gross investment to analogous measures from government financial statements; and defines government transactions that are presented in NIPA tables. Parts II and III describe the sources and methods used to derive Federal Government transactions and state and local government transactions, respectively. Part IV discusses the sources and methods used to prepare estimates of government consumption expenditures and of government gross investment by function.

## 2. CONCEPTUAL BASIS AND FRAMEWORK

The concepts supporting the government sector of the NIPAs are specifically designed to be consistent with NIPA measures of the rest of the economy; the major components of the NIPA government sector accounts are presented and defined below within the context of the Summary National Income and Product Accounts (see table A). The NIPAs may be viewed as aggregations of accounts belonging to the individual transactors in the economy. The NIPAs present consistent and comprehensive measures of the nation's economic activity, beginning with production and the income that is derived from production. Products are classified as consumption, which satisfies the demands of consumers and the general public, or investment, which are goods such as structures, equipment, and software that are used for future production. Income from current production can fund consumption expenditures or can be saved. The accounts also record foreign trade in goods and services and income received from or paid to the rest of the world. The accounts are formulated in a comprehensive, double-entry system of accounts in which transactions between members of two sectors are recorded as payments by one sector and as receipts by the other.

The NIPAs, like the national accounts of most countries, are guided by The System of National Accounts, 1993 (SNA),<sup>2</sup> which is the international standard for national economic accounting. The SNA describes an integrated system of accounts for each of the major sectors of the economy. The accounts for each sector represent aggregations of accounts for individual institutional units and

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<sup>1</sup> For more information on the concepts underlying the accounts, see *A Guide to the NIPAs* on BEA's web site at <http://www.bea.gov/bea/an/nipaguid.htm>. This document was published in June 2001, and does not reflect the comprehensive revision that was released beginning in December 2003. For changes arising from that revision, see Brent R. Moulton and Eugene P. Seskin, "Preview of the 2003 Comprehensive Revision of the National Income and Product Accounts," *Survey* 83 (June 2003), 17–31; Nicole Mayerhauser, Shelly Smith, and David F. Sullivan, "Preview of the 2003 Comprehensive Revision of other National Income and Product Accounts," *Survey* 83 (August 2003), 7–31; and Carol E. Moylan and Brooks B. Robinson, "Preview of the 2003 Comprehensive Revision of other National Income and Product Accounts, Statistical Changes," *Survey* 83 (September 2003), 17–32. Additional BEA information may be found at <http://www.bea.gov/bea/mp.htm>.

<sup>2</sup> Commission of the European Communities, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, and World Bank. *System of National Accounts, 1993*. Brussels/Luxembourg, New York, Paris, Washington, D.C., 1993. A related system is described in International Monetary Fund, *Government Finance Statistics Manual 2001*, (International Monetary Fund Publication Services, Washington, D.C., December 19, 2001).



record the production, income, saving, investment, and financial flows for that sector. Those sector flow accounts are combined with information on changes in the value of assets and liabilities due to price changes or other flows that are not transactions. All together, the integrated accounts offer a means to track the sources of change in each sector's net worth, beginning with an opening balance sheet at the beginning of a period and tracking all sources of change in net worth through the closing balance sheet at the end of the period. In the United States, the NIPAs present some of the information covered by the SNA, while other information is presented in the Federal Reserve Board's flow of funds accounts. Although the NIPAs are largely consistent with the SNA, there are some gaps and inconsistencies relative to what would be needed for a complete set of integrated accounts.<sup>3</sup> The BEA strategic plan identifies improving consistency and integration with other accounts and improving consistency with international standards as priorities for improvement.<sup>4</sup>

### 3. OVERVIEW OF GOVERNMENT AGGREGATES IN THE NIPAS

Governments serve several roles in the economy—as producers of nonmarket services for consumption by the general public, as investors in capital assets providing infrastructure for themselves and for the society as a whole, as providers of social benefits and other transfer payments, and as contributors to the nation's saving and investment.<sup>5</sup> These roles are largely financed through taxation and contributions to social insurance funds. This section highlights the major government-sector aggregates in the NIPAs; they are discussed and defined in more detail later in this methodology.

In the NIPAs, the framework for government consumption expenditures—both Federal and state and local—explicitly recognizes government as a producer of goods and services. The value of general government output is measured by the cost of inputs: Compensation, consumption of fixed capital (a partial measure of the services of general government fixed assets), and intermediate goods and services purchased (purchases of goods and services by general government). The conceptual framework for the services produced by government parallels the concepts of output and intermediate inputs of private business in BEA's input-output (I-O) accounts and the GDP-by-industry accounts; however, because most government output is not sold in the market, government output is measured by the costs of inputs instead of by market prices.

The NIPAs use two approaches to measure and present GDP: (1) GDP as the sum of value added by each economic sector; and (2) GDP as the sum of final demand. Table B shows the measures for both approaches for the general government sector.

In the “value added” approach, GDP equals gross value added aggregated across all sectors of the domestic economy (business, “persons” [households and nonprofit institutions serving households], and general government); this approach is presented in NIPA table 1.3.5. In general, value added is the measure of the contribution to GDP made by a producer, industry, or sector, and

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<sup>3</sup> For a detailed comparison of the organization and major features of the NIPAs with those of the SNA, see Charles Ian Mead, Karin E. Moses, and Brent R. Moulton, “The NIPAs and the System of National Accounts,” *Survey* 84 (December 2004), 17-32.

<sup>4</sup> See the Bureau of Economic Analysis Strategic Plan for FY 2005 – FY 2009; <http://www.bea.gov/bea/about/Director.htm#Strategic> .

<sup>5</sup> The value of the services provided to the general public is treated as government consumption expenditures.

it is the source from which incomes are generated. For general government, value added (or production) is measured as the sum of compensation of employees and consumption of fixed capital.<sup>6</sup>

Gross output of general government consists of valued added plus the intermediate goods and services used in the production of goods and services by general government; table B also shows gross output of general government. Gross output of general government includes the value of all the goods and services produced by general government, whether they are sold to other sectors, treated as government investment, or provided as government services to the society. Gross output is also used in the calculation of government consumption expenditures, which is discussed below.

In the “final demand” or “expenditure” approach, GDP is measured as the sum of final demand of the personal, business, foreign, and government sectors. In this approach, which is presented in NIPA table 1.1.5, GDP is the sum of personal consumption expenditures, gross private domestic investment, net exports of goods and services, and government consumption expenditures and gross investment. Government-sector final demand of goods and services is the sum of government consumption expenditures and gross investment. Table B shows the derivation of government consumption expenditures as gross output of general government (described above), less own-account investment (construction and software produced by government for use by government) and sales by general government to other sectors. The second component of government final demand, gross investment, consists of the structures, equipment, and software acquired by government from other sectors or produced by government for its own use; the structures, equipment, and software may be provided for use in government production (for example, defense equipment) or for the use of society as a whole (for example, highways).

The NIPAs also show the government sector from the point of view of how it finances its activities, engages in consumption expenditures, provides income payments, and contributes saving to the economy. The current receipts and current expenditures account (table C) for the government sector provides information on these activities and is also useful for fiscal analysis of the government sector. Current receipts consists of current tax receipts, contributions for government social insurance, income receipts on assets, current transfer receipts, and current surplus of government enterprises. Current expenditures consists of consumption expenditures, current transfer payments, interest payments, and subsidies, less wage accruals less disbursements. The balance of current receipts less current expenditures is net government saving. The government receipts and expenditures table corresponds to Account 4 of the seven summary national income and product accounts, a set of accounts that show the composition of production and the distribution of incomes earned in production.<sup>7</sup>

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<sup>6</sup> The measurement of value added for general government differs from the measurement of value added for private business and government enterprises. For these enterprises, gross value added can be measured as the sum of compensation of employees, consumption of fixed capital, taxes on production and imports, less subsidies, plus a “net operating surplus.” “Net operating surplus” is a profits-like measure that shows business income after deducting the costs of compensation of employees and taxes on production and imports, less subsidies, from gross value added, but before deducting financing costs (such as net interest) or business current transfer payments. In contrast, general government is assumed to receive no subsidies, to pay no taxes on production and imports, and to have no net operating surplus (value added less compensation of employees and consumption of fixed capital equals zero).

<sup>7</sup> The summary accounts are shown at *Survey* 83 (August 2005):10-26.

The sections of this paper that discuss methodologies for the Federal estimates and for the state and local estimates are primarily organized to follow the sequence of the current receipts and current expenditures account. However, the methodologies for the estimates of government gross investment (which are not current expenditures) are discussed in conjunction with the methodologies for consumption expenditures (which are current expenditures), because many of the data sources and estimation techniques for gross investment are similar to those for consumption expenditures.

Table D shows the derivation of government net lending or net borrowing as total receipts less total expenditures. Total receipts consists of current receipts and capital transfer receipts. Total expenditures consists of current expenditures, gross government investment, capital transfer payments, and net purchases of nonproduced assets, less consumption of fixed capital. The balance of total receipts less total expenditures is net lending or net borrowing, an indicator of the financing requirement of the government sector. Alternatively, net lending or net borrowing may be viewed as current-account net government saving plus net capital transfers, gross government investment, and net purchases of nonproduced assets, less consumption of fixed capital. The capital account corresponds to the addenda of NIPA table 3.1.

The NIPA summary accounts form a double-entry system in which a use (or expenditure) recorded in one account for one sector is also recorded as a source (or receipt) in an account of another sector or of the same sector. Thus, government transactions recorded in the government receipts and expenditures account may also be recorded in other summary accounts.

In summary account 1, the domestic income and product account, the right-hand side includes government consumption expenditures and gross investment as a component of final demand that sums to GDP. The left-hand side includes government wages and salary accruals, supplements to wages and salaries paid on behalf of government employees, taxes on production and imports, current surplus of government enterprises, and consumption of government fixed capital as components of gross domestic income.

In summary account 2, the private enterprise income account, the left-hand side (uses of private enterprise income) includes interest and miscellaneous payments from private enterprises to government, business current transfer payments to government, and taxes on corporate income paid to government.

In summary account 3, the personal income and outlay account, the right-hand side (personal income) includes compensation received from government, interest paid to persons by government, and government social benefits paid to persons, less contributions for government social insurance. The left-hand side (personal taxes, outlays, and saving) includes personal current taxes and personal current transfers paid to government.

Summary account 4, the government receipts and expenditures account, is discussed in detail in this methodology paper. As noted above, the sections of this paper that discuss methodologies for the Federal estimates and for state and local estimates are primarily organized to follow the sequence of the current receipts and current expenditures account.

In summary account 5, the foreign transactions current account, the right-hand side (current payments to the rest of the world and balance on current account) includes current taxes and transfer payments to the rest of the world from government, which consists of government social benefits to the rest of the world, other current transfer payments to the rest of the world, less taxes paid by the rest of the world.

In summary account 6, the domestic capital account, the right-hand side (gross saving and statistical discrepancy) includes net government saving and consumption of fixed capital for general government and government enterprises. The left-hand side (gross investment, capital transfers, and net lending) includes government fixed investment and capital transfer payments to the rest of the world (net), which includes a government component.

In summary account 7, the foreign transactions capital account, the right-hand side (capital account transactions (net) and net lending) includes capital transfer payments to the rest of the world (net), which includes a government component.

#### 4. GOVERNMENT: SCOPE AND COVERAGE

Government may be described as unique kinds of legal entities established by political processes which have legislative, judicial, or executive authority within a given area. The principal functions of government are to assume responsibility for the provision of goods and services to the community or to individual households and to finance their provision out of taxation or other incomes; to redistribute income and wealth by means of transfers; and to engage in non-market production.<sup>8</sup>

**Federal Government.** In general, BEA adopts the Federal Budget’s classification of institutional units when preparing national accounts statistics. However, there are selected cases where BEA deviates from the budget’s classifications; in these cases, BEA relies upon the SNA for guidance. The NIPA Federal sector includes the Postal Service and the social security trust funds, which are officially designated “off-budget” funds. The NIPA Federal sector also includes Guaranteed Loan Financing accounts and Direct Loan Financing accounts, which are excluded from the budget totals. The U.S. Federal Reserve System, the nation’s financial authority, is a unique case; the system’s Board of Governors is classified in the public or government sector, while the system of regional Federal Reserve Banks is classified in the private corporate sector.

**State and local governments.** For state and local governments, BEA relies substantially on Census Bureau data to prepare national accounts statistics. The NIPA government sector includes Indian tribal governments, which are not included in the Census data. The Census state and local government data includes state and local government employee retirement systems, which are in the NIPA private sector, and state unemployment insurance (a joint Federal-state program), which is in the NIPA Federal Government sector.

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<sup>8</sup> Most of the definitions in this chapter are similar to definitions used in the *SNA*.

**General government.** General government consists of those publicly owned and controlled entities which, in addition to fulfilling their political responsibilities and their role of economic regulation, produce principally non-market services for the public and redistribute income and wealth. In effect, general government consists of all government entities except government enterprises.

**Government enterprises.** Government enterprises are government agencies that sell their goods and services directly to the public for a price and recover part or all of their operating costs. They include agencies such as the U.S. Postal Service and local transit authorities. In the NIPAs, specific Federal agencies are classified as enterprises based on an analysis of the characteristics of the entities and on data from their financial statements. For state and local governments, specific functions of government (such as utilities) are classified as enterprises. The NIPA treatment of enterprises is discussed in the “Government Enterprises” section below; specific enterprises are discussed in Parts II (Federal) and III (state and local) of this methodology paper.

## 5. GOVERNMENT AS A PRODUCER (GENERAL GOVERNMENT)

The NIPAs recognize that government is a producer. Government uses labor, capital, and intermediate inputs in order to produce services such as education and defense. Government is also treated as the final consumer of such services (government consumption expenditures).

In this context, NIPA table family 3.10 presents government output and its relationship with government consumption expenditures (see table B).

**Gross output of general government** (line 3 of Table B). Gross output of general government consists of all of the goods and services produced by general government, including those that are sold or that become part of government fixed investment (own-account investment). As stated earlier, gross output of general government is measured by the cost of the inputs used for production: Compensation of general government employees, consumption of fixed capital (CFC), and intermediate goods and services purchased. (CFC, or depreciation, is included in gross government output as a partial measure of the services of general government fixed assets; the use of depreciation alone implies a zero net return on these assets.) This framework of the services produced by government and of the goods and services purchased by government is parallel to the concepts of output and intermediate inputs of business in the input-output accounts and the GDP-by-industry accounts; however, business output is valued at market prices.

**Value added** (line 4). Value added is the value of government’s output less the value of the goods and services purchased by government and used in production. For general government, this is equal to compensation of employees plus CFC.

Estimates of CFC are derived from investment estimates, using a perpetual inventory method.<sup>9</sup> For each type of fixed asset, current-dollar investment estimates for all years are converted to

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<sup>9</sup> See U.S. Department of Commerce, Bureau of Economic Analysis. *Fixed Assets and Consumer Durable Goods in the United States, 1925-99*. Washington, DC: U.S. Government Printing Office, September, 2003; page M-6.

constant-dollar estimates by deflation with an appropriate deflator.<sup>10</sup> A rate of depreciation is estimated for each type of asset. Each year of constant dollar investment is depreciated over time, using geometric depreciation.<sup>11</sup> The resulting constant-dollar CFC (depreciation) and year-end stocks estimates are converted back to current dollars with the investment deflator.

Throughout the NIPAs, adjustments to this general procedure are made when assets are destroyed as a result of extraordinary disasters (such as Hurricane Katrina, the Loma Prieta earthquake of 1989, and the attack on the World Trade Center). For general government, disaster damage and war losses are directly subtracted from the stock of government assets and no further depreciation is recorded on these assets; CFC for the period of the disaster does not include anything extra for the assets destroyed. For government enterprises, the treatment of disaster damages follows the treatment in the business sector; CFC for the period including the extraordinary disaster includes the value of the assets destroyed.<sup>12</sup> For all sectors, the value of such extraordinary destruction is shown as “other changes in volume of assets” in NIPA table 5.9, Changes in Net Stock of Produced Assets.

**Government consumption expenditures (line 2).** Government consumption expenditures is the services produced by government and provided to the general public, exclusive of services sold.

In summary, general government gross output is used in three ways:

- A small portion of the output is fixed assets that are to be used by government in the future production of services; this “own-account investment” is classified as part of government investment. Computer software developed by government employees is an example.
- A portion of the output is sold to the public; higher education and hospital services are examples. The sale of these services is recorded as personal consumption expenditures if purchased by persons and as intermediate inputs if purchased by business.
- All other output is classified as government consumption expenditures, representing services provided by government to the public at large.

Government investment (line 13) includes investment in structures, equipment, and software. Highways, schools, and military equipment are important categories. Government investment includes the investment of both general government and enterprises; CFC for general government assets is a component of government output and government consumption expenditures, while CFC for government enterprises is an expense in the calculation of the current surplus of government enterprises.

Government consumption expenditures and gross investment is a measure of government’s final demand; that is, government’s portion of GDP in the “final demand” measure of GDP. It can also

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<sup>10</sup> Deflation is the process of dividing current-dollar estimates by price indexes.

<sup>11</sup> Missiles, which are depreciated using a straight-line pattern, are an exception.

<sup>12</sup> See U.S. Department of Commerce, Bureau of Economic Analysis. *Fixed Assets and Consumer Durable Goods in the United States, 1925-97*. Washington, DC: U.S. Government Printing Office, September, 2003; page M-2.

be viewed as expenditures incurred by general government for goods and services – primarily services that are produced by labor and capital within the general government sector – that are provided without charge to the public, whether to individual members of society (such as education at public schools) or to society as a whole (such as national defense or law enforcement).

## 6. GOVERNMENT RECEIPTS AND EXPENDITURES ACCOUNT

This section features definitions for key series and concepts that are reflected in the government receipts and expenditures account. The definitions are presented in the sequence used for NIPA tables 3.1, 3.2, and 3.3; gross investment and grants-in-aid to state and local governments are also defined.

The NIPAs include both current account transactions and capital transactions. Current accounts record the production of goods and services, the generation of incomes by production, the subsequent distribution and redistribution of incomes among institutional units, and the use of incomes for purposes of consumption or saving. Investment and capital transfers are not current account transactions, but are capital transactions reflected in the NIPAs. Financial transactions and revaluations are not reflected in the NIPAs, but are recorded in the flow of funds accounts prepared by the Federal Reserve Board.

The classification of government investment as a capital-account rather than current-account transaction is easily understood, but the boundary between current- and capital-account transfers is more confusing. In general, transfers are payments in which the payer makes a payment without receiving any goods, service, or asset in return. Transfers may be current or capital; in order to distinguish between the two, it is useful to focus on the special characteristics of capital transfers. A transfer of cash is capital when it is linked to, or conditional on, the acquisition or disposal of an asset (other than inventories) by one or both parties to the transaction. Federal grants-in-aid to states for highway construction are, therefore, capital transfers. The transfer is classified as capital if it is regarded as a capital transaction by either participant. Estate and gift taxes are classified as capital transfers because they are a one-time levy on the disposition of assets built up over a lifetime by a decedent, regardless of the government's view that such taxes are an ongoing source of revenue.<sup>13</sup>

**Current receipts.** Current receipts are the sum of current tax receipts, contributions for government social insurance, income receipts on assets, current transfer receipts, and current surplus of government enterprises.

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<sup>13</sup> The following government transactions are classified as capital transfers: (1) Federal Government investment grants to state and local governments for highways, transit, air and water transportation, and water treatment plants; (2) estate and gift taxes; (3) Federal government forgiveness of debt owed by foreign governments to the U.S. government and the December 1999 transfer to the Republic of Panama of the U.S. Government's assets in the Panama Canal Commission; (4) Federal government investment grants to business; and (5) payments to the Uniformed Services Retiree Health Care Fund to amortize its unfunded liability. NIPA table 5.10, *Capital Transfers (Net)*, shows the annual estimates for these transactions.

**Current tax receipts.** Current tax receipts is the sum of personal current taxes, taxes on production and imports, taxes on corporate income, and taxes from the rest of the world. Taxes are compulsory, unrequited payments, in cash or in kind, received by government from other sectors. They are described as unrequited because the government provides nothing in return to the payer, except that government may use the money to provide goods, services and benefits to individuals and society at large.

**Personal current taxes.** Personal current taxes is tax payments (net of refunds) by U.S. residents that are not chargeable to business expense. It includes taxes on income (including realized net capital gains), taxes on personal property, and personal license taxes. Personal taxes do not include residential real estate taxes, estate and gift taxes, or personal contributions for social insurance.

**Taxes on production and imports.** Taxes on production and imports includes:

- Taxes payable on goods and services when they are produced, delivered, sold, transferred or otherwise disposed of (such as sales taxes and excise taxes);
- customs duties; and
- other taxes on production, consisting mainly of taxes on the ownership or use by business of land, buildings, or other assets.

Employer contributions for social insurance and taxes on corporate income are included.

**Taxes on corporate income.** Taxes on corporate income is income tax liabilities on all corporate earnings, including realized net capital gains. These taxes are measured on an accrual basis, net of applicable tax credits.<sup>14</sup> They include payments of earnings by the Federal Reserve System to Federal government accounts.

**Taxes from the rest of the world.** Taxes from the rest of the world is income taxes received by the Federal government from the rest of the world. The published estimates also include some taxes on production and some current transfers because the source data do not permit the reliable separation of the taxes on income.

**Contributions for government social insurance.** Contributions for government social insurance consists of employer, employee, self-employed, and other individual contributions for social insurance. Employer contributions for social insurance consists of employer payments under the following government programs: Old-age, survivors, and disability insurance (social security); hospital insurance; unemployment insurance; railroad retirement; pension benefit guaranty; veterans life insurance; publicly administered workers' compensation; military medical insurance; and temporary disability insurance. Employee and self-employed contributions for social insurance consists of 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; railroad retirement; veterans life insurance; and temporary disability insurance.

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<sup>14</sup> For more information, see *Corporate Profits: Profits Before Tax, Profits Tax Liability, and Dividends*, Methodology Paper No.1 (September 2002).



**Income receipts on assets.** Income receipts on assets consists of interest, dividends, and rents and royalties received by all governments. Interest receipts includes both the monetary and imputed interest received on loans and investments.

**Current transfer receipts.** Current transfer receipts consists of current transfers received from business (net) and from persons; for state and local governments, it also includes current-account grants-in-aid from the Federal government.

**Current transfer receipts: Federal grants-in-aid.** Current Federal grants-in-aid is current-account payments from the Federal government to state and local governments to help finance state and local government activities such as public assistance and education. It does not include grants that finance investment activities, such as highway or airport construction; such activities are instead classified as capital transfers. It is a receipt item only for the state and local government account.

**Current transfer receipts from business (net).** Current transfer receipts from business consists of deposit insurance premiums, fines, fees such as regulatory and inspection fees, settlements received from tobacco companies, donations, and net insurance settlements paid to governments as policyholders.<sup>15</sup>

**Current transfer receipts from persons.** Current transfer receipts from persons includes fines, immigration and other fees, certain penalty taxes, donations, and unclaimed bank deposits. It also includes excise taxes on excess IRA contributions and excise taxes paid by nonprofit institutions serving households.

**Current surplus of government enterprises.** The current surplus of government enterprises is current operating revenue and subsidies received less current operating expenses. In calculating the current surplus, expenses include consumption of fixed capital (CFC), but neither revenue nor expenses include interest.

**Current expenditures.** Current expenditures is the sum of consumption expenditures, current transfer payments, interest payments, and subsidies, less wage accruals less disbursements.

**Consumption expenditures.** Consumption expenditures is discussed above in the section “Government as a Producer.”

**Current transfer payments.** Current transfer payments consists of government social benefit payments to persons and to the rest of the world, and other current transfer payments to the rest of the world (net). For the Federal Government only, it also includes current-account grants-in-aid to state and local governments.

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<sup>15</sup> Net insurance settlements are discussed in Baoline Chen and Dennis J. Fixler, “Measuring the Services of Property-Casualty Insurance in the NIPAs: Changes in Concepts and Methods,” *Survey* 83 (October 2003): 10-26.

**Government social benefits to persons.** Government social benefits to persons is the current transfers paid to persons to provide for the needs that arise from circumstances such as sickness, unemployment, retirement, and poverty. There are two kinds of social benefits to persons: benefits from social insurance funds and other social benefits. Social insurance funds include old-age, survivors, and disability insurance (social security); hospital insurance and supplementary medical insurance (Medicaid); unemployment insurance; and other Federal and state and local government programs. Other social benefits include the “refundable” portion of the earned income credit; workers' compensation; veterans benefits; food stamps; supplemental security income and other public assistance programs, and many other programs. Government payments to nonprofit institutions serving households, except payments for work under research and development contracts, are also included; these institutions are included in the NIPA personal sector.

**Government social benefits to the rest of the world.** Government social benefits to the rest of the world is social benefits paid to individuals residing abroad; most such payments are old age and survivors insurance (social security) benefits paid to former U.S. residents.

**Current transfer payments: Grants-in-aid to state and local governments.** Grants-in-aid to state and local governments is the net current payments from the Federal government to state and local governments to help finance state and local government activities such as public assistance and education. It does not include grants financing investment activities, such as highway or airport construction; such activities are instead classified as capital transfers ([see page 11](#)). Grants-in-aid is an expenditure item only for the Federal government account; it is identical to the receipts item recorded in the State and local government account. In combining levels of government to get the total government sector, it is netted out; it does not appear in either total government receipts or total government expenditures.

**Other transfer payments to the rest of the world (net).** Other transfer payments to the rest of the world consists of net U.S. Government current-account grants (in cash and in kind) to governments in the rest of the world.

**Interest payments.** Interest payments is interest paid by government to persons, to business, and to the rest of the world. It includes monetary interest paid on public debt and other financial obligations.

**Subsidies.** Subsidies is the current unrequited payments made by government to businesses on the basis of their production activities or the quantities or values of the goods or services which they produce, sell, or import. Subsidies may be designed to influence levels of production, the prices at which outputs are sold, or the profits earned by the producers. Subsidies may be paid to private business and to government enterprises at a different level of government.

**Wage accruals less disbursements.** Wage accruals less disbursements is wages and salaries earned less wages and salaries paid. The earnings and payments are different when there are retroactive payments in wages and salaries. Government consumption expenditures include wages and salaries when earned; personal income and personal saving include wages and salaries on a when-paid basis. In order to make government saving consistent with personal saving, a wage accruals less disbursements adjustment is subtracted in deriving total government current

expenditures. (In the NIPAs, wage accruals is the measure used for gross domestic income, and wage disbursements is the measure used for personal income.)

**Net government saving.** Net government saving is the sum of government current receipts less the sum of government current expenditures. Net government saving is shown separately for social insurance funds and all other funds.

Additional clarification may be needed for some difficult-to-classify receipts. Most government receipts are compulsory payments by other sectors for which the payer does not directly receive a particular good or service; their classification as particular taxes or social insurance contributions is usually straight-forward. However, government also receives revenues from the public that represent payments for goods, services, or administrative or regulatory actions, and whose classification could be unclear. In the NIPAs, these revenues may be classified as transfers received by government, as government sales (which are deducted from government consumption expenditures or government investment), or as enterprise revenue (which is accounted for in the treatment of government enterprises that is described below).

Such revenues are classified as a current transfer to government if no good, service, or financial asset is given to the payer in return; administrative and regulatory fees are classified as current transfers. Other examples include deposit insurance premiums, donations to government entities, and fines.

Such revenues are classified as a sale by general government and deducted from government consumption expenditures if it is for a good or service that is not administrative or regulatory in nature, and if the government unit providing the good or service is not a government enterprise. Examples of government sales include payments received by public hospitals, tuition received by state institutions of higher education, charges for the services of U.S. Department of Agriculture meat graders, and fees received by the National Aeronautics and Space Administration for launching services.

Such revenues are classified as enterprise revenue if it is received in exchange for a good or service that is not administrative or regulatory in nature, if providing the good or service is the primary function of the government unit, and if such payments cover a substantial part of the operating costs of the government unit providing the good or service. Examples of enterprise revenue include sales of electricity by public electric utilities and sales of postal services by the U.S. Postal Service. Government enterprises are discussed more thoroughly below.

## 7. GOVERNMENT ENTERPRISES

This section discusses government enterprises, a set of institutional units that have many of the characteristics of private businesses, but are owned by government and are classified in the NIPA government sector. This section defines Government enterprises and discusses their NIPA treatment and their profit-like income (current surplus).

Government enterprises are government institutional units that are classified in the business sector because they sell their goods and services directly to the public for an economically significant price. A "mixed" treatment of government enterprises is used in the NIPAs, such that certain types of transactions are recorded as if they were part of the government sector and others as if they were part of the business sector. The production activities of government enterprises are presented along with private businesses as part of business sector value added. On the other hand, measures of the current surplus of government enterprises are shown as receipts of the government sector, resulting in measures of net saving and net lending or borrowing that reflect the consolidated accounts of general government and government enterprises.<sup>16</sup>

Government enterprises are treated like other businesses and included in the NIPA business sector in the following ways: (1) Their sales to final users are valued at market prices and recorded in the business production account; (2) their outlays for materials and business services are considered intermediate; and (3) their wages, salaries, and other compensation payments, their CFC, and their income, are all considered charges against business value added rather than as charges against government value added. Within the business sector, government enterprises are classified as noncorporate business.

On the other hand, government enterprises are treated like other government institutional units and are included in the NIPA government sector in the following ways: (1) Their interest payments and receipts are presented with those of general government rather than those of business; (2) their investment in structures, equipment, and software is combined with general government gross investment rather than with business purchases in gross private domestic investment; and (3) their inventory change, where available, is combined with general government consumption expenditures.

The current surplus of government enterprises is profit-type income that accrues to general government. It is calculated as the current operating revenue and subsidies received from other levels of government, less current expenses. Interest received and paid are ignored in the calculation of the current surplus of government enterprises.

## 8. REAL OUTPUT AND RELATED MEASURES

In addition to estimates of current-dollar transactions, BEA prepares chain-type quantity and price indexes for government consumption expenditures and gross investment and for the other components of GDP. Chained (2000) dollar estimates also provide measures to calculate the percent changes for GDP and its components that are consistent with those calculated from the chain-type quantity indexes. For most components of GDP, these estimates also provide rough approximations of their relative importance and of their contributions to real GDP growth for the years close to 2000. However, for components for which relative prices are changing rapidly, such

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<sup>16</sup> In order to be consistent with international guidelines set forth in the *SNA*, BEA is researching the prospects for classifying government enterprises with the corporate sector of the NIPAs so that institutional units with similar operating procedures can be grouped uniformly.

as computers and peripheral equipment, calculations of contributions using chained-dollar estimates may be misleading, even very close to the reference year. For most analyses, the current-dollar, or “nominal,” estimates provide more appropriate measures of the relative importance of GDP components, and the tables showing contributions to percent change present the appropriate measures of contributions to real growth.

**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, usually one year. These changes can be decomposed into quantity and price components. Quantities and prices are expressed as index numbers with the reference year—at present, the year 2000—equal to 100.

The annual changes in quantities and prices in the NIPAs are calculated using a Fisher formula that incorporates weights from two adjacent years. For example, the 2000 to 2001 change in real GDP uses prices for 2000 and 2001 as weights, and the 2000 to 2001 change in GDP prices uses quantities for 2000 and 2001 as weights.<sup>17</sup>

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 used to calculate changes in quantities and prices.<sup>18</sup> The Fisher formula also produces percent changes in quantities and prices that are not affected by the choice of reference year. In addition, because the changes in quantities and prices produced in this way are symmetric, the product of a quantity index and the corresponding price index, in general, equals the current-dollar index.<sup>19</sup>

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<sup>17</sup> Because the source data available for most components of GDP are measured in dollars rather than in physical units, the volumes of most of the detailed components used to calculate percent changes are obtained by deflation. For deflation, quantities are approximated by real values (expressed with 2000 as the reference year) that are calculated by dividing the current-dollar value of the component by its price index, where the price index uses 2000 as the reference year.

Two other methods, volume extrapolation and direct base-year valuation, are also used to calculate the real values for certain detailed GDP components. For volume extrapolation, real measures are obtained by extrapolating estimates of the reference-year’s current-dollars backwards and forwards using volume indicators; for example, estimates of real Federal civilian compensation are extrapolated using employment (by grade and step) and average hours worked. For direct reference-year valuation, the real measures are obtained by multiplying reference-year prices by quantity data for each period; for example, real spending for B-2 bombers is calculated using quantities and specification prices of flyaway airframes, engines, electronic, and an all-other flyaway pricing specifications. The technique of specification pricing consists of determining the relevant physical characteristics of a good and these characteristics are held constant over time. For further information about specification pricing, see Part II of this publication.

<sup>18</sup> 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; J. Steven Landefeld, Brent R. Moulton, and Cindy M. Vojtech, “Chained-Dollar Indexes: Issues, Tips on Their Use, and Upcoming Changes,” *Survey* 83 (November 2003): 8–16.

<sup>19</sup> For the annual estimates of NIPA aggregates that include the components “change in private inventories” and “Commodity Credit Corporation inventory change,” 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

**Chained-dollar measures.** To address the needs of its data users, BEA also prepares measures of real GDP and its components in a dollar-denominated form, designated "chained (2000) dollar" estimates. For GDP and for most other series, these estimates are computed by multiplying the 2000-current-dollar values by a corresponding quantity index, then dividing by 100. For example, if a current-dollar GDP component equaled \$100 in 2000 and if real output, as measured by a quantity index for this component, increased 10 percent in 2001, then the chained (2000) dollar value of this component would be \$110 ( $(\$100 \times 110)/100$ ) in 2001.<sup>20</sup>

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. Thus, chained-dollar estimates are most appropriately interpreted as index numbers with a reference value other than 100. However, because the relative prices used as weights for any period other than the reference year differ from those used for the reference year, the chained-dollar values for the detailed GDP components will not necessarily sum to the chained-dollar estimate of GDP or of 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 another major aggregate) and the sum of the most detailed components in the table.

For periods close to the reference 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 (2000) dollar estimates can be used to approximate the contributions to growth and to aggregate the detailed estimates.

As one moves further from the reference year, the residual tends to become larger, and the chained-dollar estimates become less useful for economic analyses. 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 reference year. In particular, for components for which relative prices are changing rapidly, such as computers and peripheral equipment, calculations of contributions using chained-dollar estimates may be misleading even very close to the reference year (and the residuals in the corresponding chained-dollar tables may be large). Consequently, BEA's chained-dollar estimates are generally not available prior to 1990; quantity indexes and contributions to percent change estimates are better tools for analysis of these years.

Detailed quantity indexes, which are accurate for all periods, are presented in NIPA tables 3.9.3, Real Government Consumption Expenditures and Gross Investment, 3.10.3, Real Government Consumption Expenditures and General Government Gross Output, and 3.11.3, Real National Defense Consumption Expenditures and Gross Investment by Type. The corresponding annual

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calculations, see the box "Basic Formulas for Calculating Chain-Type Quantity and Price Indexes" in the *National Income and Product Accounts of the United States, 1929-97, Volume 1* (September 2001); M16.

<sup>20</sup> For a detailed mathematical description of chain indexes, see *A Guide to the NIPAs Methodology, National Income and Product Accounts, 1929-97*, June 2001, page 16 box, "Basic Formulas for Calculating Chain-Type Quantity and Price Indexes."

growth rates for these quarterly indexes are presented in NIPA tables 3.9.1, 3.10.1, and 3.11.1. Contributions to percent change in real government consumption expenditures and gross investment are presented in NIPA table 3.9.2.

## 9. GOVERNMENT EXPENDITURES BY FUNCTION

In government budgets, expenditures are classified according to their purpose—that is, their function—so that comparisons of major activities over time can be made even as underlying programs and agencies change. These functional presentations reveal trends, enable comparisons with the expenditures of other governments, and summarize significant expenditures of government in terms of continuing, common purposes. Although the basic NIPA presentations of government expenditures focus on the type of spending, such as consumption expenditures and subsidies, BEA also presents annual estimates of government expenditures classified by both type and function; this makes possible additional types of analyses of BEA’s estimates. The functional estimates are discussed in Part IV of this document.

## 10. OTHER ASPECTS OF GOVERNMENT

**Government social insurance funds.**<sup>21</sup> Funds administered by Federal and by state and local governments to provide old-age, survivors, and disability insurance (social security); hospital insurance; supplementary medical insurance; unemployment insurance; railroad retirement; pension benefit guaranty; veterans life insurance; workers compensation; military medical insurance; and temporary disability insurance. The main sources of these funds are compulsory payments—called contributions in the NIPAs—by other sectors and other governmental units. The benefits paid from these funds are generally related to the income of the individuals from employment and/or to the contributions made on their account, whether made by themselves or their employers.

Because most social insurance funds are trust funds with resources that cannot be used for purposes other than those specified by statute or trust agreement, contributions to these funds are not classified as taxes in the NIPAs. Because individuals have no choice in the disposition of this part of their labor income, contributions for government social insurance, which includes both employer contributions and employee and self-employed contributions, is deducted in the calculation of personal income. (Employer contributions is included as a component of compensation received.)

In addition, the excess of contributions to these funds and their investment earnings over the benefits and administrative expenses paid by them is part of the saving of general government, although the saving of social insurance funds is distinguished and recorded separately. (This treatment contrasts with that of retirement plans established by employers; the saving of these plans is part of personal saving.)

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<sup>21</sup> The *SNA* refers to these funds as “social security”, but the NIPAs use the term “government social insurance funds” because the term “social security” is commonly used in the United States to refer to the Federal government’s old-age, survivors, and disability insurance program.

**Government employee retirement plans.**<sup>22</sup> The NIPAs treat the saving of government employee retirement plans as saving of the personal sector. Households are likely to base certain economic decisions, especially for the long term, on expected returns from these assets, so this treatment is more useful for certain types of analysis, and more consistent with factors influencing long-term personal economic decision-making. For government employee retirement plans, this treatment differs from that found in government financial statements; namely, Federal employee retirement plans are included in U.S. Budget aggregates that are prepared by the Office of Management and Budget (OMB), and state and local retirement plans are included in Government Finances aggregates that are prepared by the Census Bureau.

Publicly administered government employee retirement plans are classified as employee pension and insurance funds, not as government social insurance programs. Transactions of government employee retirement plans are treated in the following manner: (1) Employer contributions are a component of “Employer contributions for employee pension and insurance funds”; (2) personal contributions are treated as transactions within the personal sector; (3) interest received by the retirement plans is included in personal interest income; (4) dividends received by the retirement plans are included in personal dividend income; (5) benefits paid by the plans are treated as transactions within the personal sector; (6) benefits paid to those beneficiaries living outside the United States are transfer payments to the rest of the world from persons; and (7) administrative expenses associated with the plans are treated as personal consumption expenditures.

## 11. RELATION OF NIPA GOVERNMENT CURRENT RECEIPTS AND EXPENDITURES TO FINANCIAL STATEMENTS

The government receipts and expenditures account is derived primarily from financial statements for the Federal and the state and local governments; these statements record payments to and from government in a given time period. The focus of these statements is the summarization of individual government financial transactions -- taxing, spending, borrowing, and lending. These financial statements differ from those required for the NIPAs in several respects such as the coverage of transactors and transactions, the extent to which transactions are shown net or gross, the fiscal years used, and the timing with which transactions are recorded. Consequently, adjustments are necessary to conform these financial statements to the NIPA concepts. Also, for some state and local government transactions, data from other sources are substituted for those from the financial statements because they are consistent with estimates of similar transactions elsewhere in the NIPAs, they provide more detail on types of transactions, or they provide monthly or quarterly observations that permit a more precise assignment of transactions to a given time period.

The Federal employee retirement program is an example of a difference in coverage in transactors; it is included in Federal budget data, but not in the NIPA government sector current receipts and expenditures. Estate taxes are an example of a difference in the coverage of transactions; they are

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<sup>22</sup> For further discussion of government employee retirement plans, see Brent R. Moulton, Robert P. Parker, and Eugene P. Seskin, “A Preview of the 1999 Comprehensive Revision of the National Income and Product Accounts: Definitional and Classificational Changes,” *Survey of Current Business* 79 (August 1999); 11.



included in government sector source data, but not in the NIPA government sector current account (they are classified as a capital transaction). Deposit insurance premiums are an example of a difference in netting and grossing; they are classified as negative expenditures in Federal budget data, but as positive receipts in the NIPAs. Taxes on corporate income are an example of timing differences; Federal budget data include them on a cash basis, but the NIPAs record them on an accrual basis. Parts II and III of this document discuss these differences in greater detail.

NIPA Tables 3.18A and 3.18B show the relation of the Federal government NIPA estimates to Federal financial statements. NIPA table 3.19 shows the relation of State and local NIPA estimates to Census Bureau Government Finances data.

## 12. PRESENTATION OF THE ESTIMATES

The estimates of government transactions are published in the NIPA tables, which appear in the *Survey* and on BEA's web site. BEA's gross domestic product web page is at ([www.bea.gov/beatop/home/gdp.htm](http://www.bea.gov/beatop/home/gdp.htm)). Tables whose numbers begin with "3." are specifically government sector tables; government sector series also appear in many other NIPA tables. The keyword index <http://www.bea.gov/beatop/nipaweb/NIPATableIndex.asp> provides the location, by NIPA table number, of the various annual and quarterly estimates of government transactions, and, where applicable, of estimates in current dollars, chain-type quantity and price indexes, and chained dollars.<sup>23</sup> Annual estimates generally cover 1929 to the present; quarterly estimates in current dollars generally cover the first quarter of 1947 to the present; and quarterly quantity and price indexes generally cover the first quarter of 1947 to the present. Quarterly and annual estimates of chained dollars generally cover 1990 to the present.

To assist users in identifying the type of estimate in a table, a numbering system for NIPA tables was developed for groups of tables that display different types of estimates using similar formats. The table-numbering system highlights the type of estimate (such as current dollars, quantity indexes, and percent changes) in the table. The system is outlined below. Table numbers are in the format "X.Y.Z," where "X" indicates the NIPA table section, "Y" indicates the table number in the section, and "Z" indicates the type of estimate presented. "X" is three for government section tables.

Where only current-dollar estimates are presented, a table uses only the first two terms of the numbering system. For example, the NIPA table "Government Current Receipts and Expenditures," which presents only current-dollar estimates, is numbered simply Table 3.1.

Where quantity and price information is published, table families use a three-term numbering system. Table family 3.9, for example, presents information concerning government consumption expenditures and gross investment.

Table 3.9.1 presents percent change from preceding period in real estimates

Table 3.9.2 presents contributions to percent change in real estimates

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<sup>23</sup> The index may be found in the gross domestic product web page by selecting "Interactive NIPA Tables," and then selecting "Keyword Index."

Table 3.9.3 presents real estimates, quantity indexes

Table 3.9.4 presents price indexes

Table 3.9.5 presents current dollars

Table 3.9.6 presents real estimates, chained dollars

Additional NIPA underlying detail and key source data tables are also available on BEA's Web site under the heading "Supplemental estimates." These tables include detailed estimates that support the regularly published NIPA series; they are not included in the published tables because their quality is less than that of the higher level aggregates in which they are included. Compared to these aggregates, the more detailed estimates are more likely to be either based on judgmental trends, on trends in the higher-level aggregate, or on less reliable source data.

In addition to these tables, additional detail on government transactions within the NIPA framework is presented in articles in the Survey. "Federal Budget Estimates" generally appears in the February or March Survey; it presents estimates in a NIPA framework which are consistent with the Budget of the United States Government.

Release schedule. For 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 of the quarter, respectively.

Taxes on corporate income, total receipts, and net government saving are not prepared for advance estimates because of lags 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 final estimates are released with the final GDP estimates. For the fourth quarter, these estimates are released only with the final GDP estimates.

Annual revisions of the NIPAs are usually carried out each summer and cover the months and quarters of the most recent calendar year and of the two preceding years. These revisions are timed to incorporate newly available major annual source data. Most government tables are made available on BEA's website soon after the July release. The government expenditures by function tables (NIPA tables 3.15, 3.16, and 3.17), the reconciliation tables (NIPA tables 3.18A, 3.18B, and 3.19), and the not-seasonally-adjusted tables (NIPA tables 8.3 And 8.4) are usually published in October.

Comprehensive revisions have been conducted approximately every five years and incorporate three major types of improvements: (1) Changes in definitions and classifications 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 and statistical changes and make the tables more informative.

### 13. STATISTICAL CONVENTIONS

**Seasonal adjustment.** Quarterly and monthly NIPA estimates are seasonally adjusted at the detailed series level when the series demonstrate statistically significant seasonal patterns. 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 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.

**Interpolation.** Interpolation refers to techniques of developing high frequency estimates (for example, quarterly or monthly estimates) from lower frequency estimates (for example, annual or quarterly estimates). In many cases, more complete or more detailed source data are available on a less frequent basis than is needed to compile a complete, timely, and consistent set of NIPA estimates. In such cases, BEA develops higher frequency estimates using interpolation techniques that provide higher frequency estimates of the lower frequency source data. Interpolation techniques can be performed with or without an indicator, as discussed below.

**Extrapolation.** Extrapolation refers to techniques of developing estimates for which the final source data (regardless of frequency) are not yet available. Many source data series that BEA uses in developing the NIPAs are not available when the NIPA estimates are made, so BEA develops estimates using extrapolation techniques. Extrapolation techniques (like interpolation techniques) can be performed with or without an indicator, as discussed below.

Interpolation (and extrapolation) techniques with an indicator series are used when there is a higher frequency series that provides a good indication of the changes in the lower frequency source data. The purpose of interpolation (and extrapolation) with an indicator is to combine the relative strengths of the low- and high-frequency data. Typically, the low-frequency (for example, annual) data provide the most reliable information on the overall level and long-term movements in the series, while the higher-frequency (for example, quarterly) data provide the only available explicit information about the short-term movements in the series. For example, data on wage-based social security and medicare contributions are available annually; these data provide information on the level and on annual movements. Because the contributions are based on wages and salaries, the movements in monthly estimates of wages and salaries are the best source of information about the pattern of monthly contributions. Using interpolation techniques, a series of monthly estimates of unemployment contributions is developed that uses the monthly changes in the indicator series (wages and salaries) and that is consistent with the annual source data on contributions. Using extrapolation techniques and information about the impact of tax rate changes, monthly estimates of contributions are developed that use the monthly changes in the indicator series (wages and salaries) to estimate periods later than the most recent annual source data.

Interpolation (and extrapolation) techniques without an indicator series are used when higher frequency estimates are needed for the completeness of the NIPA estimates, but BEA does not have reliable indicators for higher frequency estimates. In these cases, BEA develops higher

frequency estimates (for example, quarterly or monthly estimates) that are consistent with the lower frequency source data (for example annual or quarterly data). For example, federal current transfer receipts from persons are interpolated without indicator, because the source data are annual, but BEA does not have indicators of quarterly or monthly changes in this series. Using interpolation techniques, a series of quarterly estimates of current transfer receipts from persons is created, even though source data are available only annually.

Using extrapolation techniques, quarterly estimates of current transfer receipts from persons are developed to estimate periods later than the most recent annual source data. Extrapolation without an indicator series may be performed using a variety of techniques: A statistical model, a trend or moving average method, or judgment.

The use of interpolation and extrapolation techniques allows BEA to complete the NIPA estimates on a higher frequency basis than the low-frequency source data allow. (For example, without the monthly and quarterly estimates of unemployment insurance contributions and the quarterly estimates of current transfer receipts from persons, BEA would not have a complete set of quarterly government current receipts and expenditures.) BEA recognizes that interpolation (and extrapolation) without an indicator series results in synthetic estimates and is always on the lookout for source data that can be used to improve estimate quality.

**Legislative changes.** In some circumstances, changes in economic conditions are caused by changes in legislation, policy, or other events which may not be reflected in source data until after the event. In certain circumstances, BEA prepares estimates that reflect the changes when the legislative change is known, but before the source data are available. For example, a legislature may change a tax rate effective at a certain time, but the data on tax collections for that period may not become available until much later. In such cases, BEA uses information about the expected change in tax revenue from the government that collects the tax, or in some cases, from publicly available sources (for example, media reports) to estimate the tax in question and reflect the change in the tax rate when it actually occurs.

Certain estimates for government program administrative changes that occur regularly are treated in the NIPAs as legislative changes. For example, pay raises for Federal employees and cost of living adjustments to social security payments are treated as legislative changes when they take effect. In the case of Federal wages and salaries, this treatment has the effect of treating the pay raises as increases in prices paid by the Federal Government for services of employees.

TABLES

Table A. Summary National Income and Product Accounts  
Calendar Year 2000 (Billions of Dollars)

Account 1. Domestic Income and Product Account						
1	Compensation of employees, paid	5,787.3		15	Personal consumption expenditures (3-3)	6,739.4
2	Wage and salary accruals	4,833.8		16	Durable goods	863.3
3	Disbursements (3-12 and 5-11)	4,833.8		17	Nondurable goods	1,947.2
4	Wage accruals less disbursements (4-9 and 6-11)	0.0		18	Services	3,928.8
5	Supplements to wages and salaries (3-14)	953.4		19	Gross private domestic investment	1,735.5
6	Taxes on production and imports (4-16)	708.9		20	Fixed investment (6-2)	1,679.0
7	Less: Subsidies (4-8)	44.3		21	Nonresidential	1,232.1
8	Net operating surplus	2,304.5		22	Structures	313.2
9	Private enterprises (2-19)	2,299.1		23	Equipment and software	918.9
10	Current surplus of government enterprises (4-26)	5.3		24	Residential	446.9
11	Consumption of fixed capital (6-13)	1,187.8		25	Change in private inventories (6-4)	56.5
				26	Net exports of goods and services	-379.5
12	Gross domestic income	9,944.1		27	Exports (5-1)	1,096.3
				28	Imports (5-9)	1,475.8
13	Statistical discrepancy (6-19)	-127.2		29	Government consumption expenditures and gross investment (4-1 plus 6-3)	1,721.6
				30	Federal	578.8
				31	National defense	370.3
				32	Nondefense	208.5
				33	State and local	1,142.8
<b>14</b>	<b>GROSS DOMESTIC PRODUCT</b>	<b>9,817.0</b>		<b>34</b>	<b>GROSS DOMESTIC PRODUCT</b>	<b>9,817.0</b>

Table A. Summary National Income and Product Accounts  
Calendar Year 2000 (Billions of Dollars)

Account 2. Private Enterprise Income Account						
1	Income payments on assets	2,480.0		19	Net operating surplus, private enterprises (1-9)	2,299.1
2	Interest and miscellaneous payments (3-20 and 4-21)	2,423.2		20	Income receipts on assets	1,964.5
3	Dividend payments to the rest of the world (5-14)	56.8		21	Interest (3-20)	1,762.0
4	Reinvested earnings on foreign direct investment in the United States (5-15)	-0.1		22	Dividend receipts from the rest of the world (5-6)	86.3
5	Business current transfer payments (net)	87.1		23	Reinvested earnings on U.S. direct investment abroad (5-7)	116.1
6	To persons (net) (3-24)	42.4				
7	To government (net) (4-24)	43.7				
8	To the rest of the world (net) (5-19)	1.0				
9	Proprietors' income with inventory valuation and capital consumption adjustments (3-17)	728.4				
10	Rental income of persons with capital consumption adjustment (3-18)	150.3				
11	Corporate profits with inventory valuation and capital consumption adjustments	817.9				
12	Taxes on corporate income	265.2				
13	To government (4-17)	255.0				
14	To the rest of the world (5-19)	10.2				
15	Profits after tax with inventory valuation and capital consumption adjustments	552.7				
16	Net dividends (3-21 plus 4-22)	377.9				
17	Undistributed corporate profits with inventory valuation and capital consumption adjustments (6-10)	174.8				
<b>18</b>	<b>USES OF PRIVATE ENTERPRISE INCOME</b>	<b>4,263.6</b>		<b>24</b>	<b>SOURCES OF PRIVATE ENTERPRISE INCOME</b>	<b>4,263.6</b>

Table A. Summary National Income and Product Accounts  
Calendar Year 2000 (Billions of Dollars)

Account 3. Personal Income and Outlay Account						
1	Personal current taxes (4-15)	1,235.7		10	Compensation of employees, received	5,782.7
2	Personal outlays	7,025.6		11	Wage and salary disbursements	4,829.2
3	Personal consumption expenditures (1-15)	6,739.4		12	Domestic (1-3 less 5-11)	4,826.3
4	Personal interest payments (3-20)	204.7		13	Rest of the world (5-3)	2.9
5	Personal current transfer payments	81.5		14	Supplements to wages and salaries (1-5)	953.4
6	To government (4-25)	50.0		15	Employer contributions for employee pension and insurance funds	609.9
7	To the rest of the world (net) (5-17)	31.5		16	Employer contributions for government social insurance	343.5
8	Personal saving (6-9)	168.5		17	Proprietors' income with inventory valuation and capital consumption adjustments (2-9)	728.4
				18	Rental income of persons with capital consumption adjustment (2-10)	150.3
				19	Personal income receipts on assets	1,387.0
				20	Personal interest income (2-2 plus 3-4 plus 4-7 plus 5-5 less 2-21 less 4-21 less 5-13)	1,011.0
				21	Personal dividend income (2-16 less 4-22)	376.1
				22	Personal current transfer receipts	1,084.0
				23	Government social benefits (4-4)	1,041.6
				24	From business (net) (2-6)	42.4
				25	Less: Contributions for government social insurance (4-19)	702.7
9	<b>PERSONAL TAXES, OUTLAYS, AND SAVING</b>	<b>8,429.7</b>		26	<b>PERSONAL INCOME</b>	<b>8,429.7</b>

Table A. Summary National Income and Product Accounts  
Calendar Year 2000 (Billions of Dollars)

Account 4. Government Receipts and Expenditures Account						
1	Consumption expenditures (1-29)	1,417.1		14	Current tax receipts	2,206.8
2	Current transfer payments	1,062.4		15	Personal current taxes (3-1)	1,235.7
3	Government social benefits	1,044.1		16	Taxes on production and imports (1-6)	708.9
4	To persons (3-23)	1,041.6		17	Taxes on corporate income (2-13)	255.0
5	To the rest of the world (5-18)	2.5		18	Taxes from the rest of the world (5-18)	7.3
6	Other current transfer payments to the rest of the world (net) (5-18)	18.3		19	Contributions for government social insurance (3-25)	702.7
7	Interest payments (3-20)	362.8		20	Income receipts on assets	117.4
8	Subsidies (1-7)	44.3		21	Interest and miscellaneous receipts (2-2 and 3-20)	115.6
9	Less: Wage accruals less disbursements (1-4)	0.0		22	Dividends (3-21)	1.9
10	Net government saving (6-12)	239.4		23	Current transfer receipts	93.7
11	Federal	189.5		24	From business (net) (2-7)	43.7
12	State and local	50.0		25	From persons (3-6)	50.0
				26	Current surplus of government enterprises (1-10)	5.3
13	<b>GOVERNMENT CURRENT EXPENDITURES AND NET SAVING</b>	<b>3,125.9</b>		27	<b>GOVERNMENT CURRENT RECEIPTS</b>	<b>3,125.9</b>







































































































































































#### *CAPITAL GRANTS-IN-AID TO STATE AND LOCAL GOVERNMENTS*

Grants for highways, for airports, for mass transit, and for water and sewage are classified as capital transfers. See the section on grants-in-aid to State and local government for an overview of the estimation of grants. (page 60).

#### *CAPITAL TRANSFERS PAID TO THE REST OF THE WORLD*

Capital transfers to the rest of the world consists of forgiveness of debts owed by foreign governments to the U.S. Government and the December 1999 transfer of U.S. Government assets in the Panama Canal Commission to the Republic of Panama. The estimate of capital transfers to the rest of the world is from BEA's ITAs [22.8].

#### *CAPITAL GRANTS TO BUSINESS (SUBSIDIES)*

Subsidies to private companies for capital expenditures are removed from the current account and are included in the capital account as transfers. Prior to 1990, subsidies were paid for maritime construction, specifically shipbuilding. More recently, these subsidies are from the Department of Homeland Security for capital expenditures. Not-seasonally-adjusted quarterly data from the *MTS* [31.3] are summed to obtain calendar-year estimates. Seasonally-adjusted quarters are set equal to the not-seasonally-adjusted estimates.

#### *CAPITAL TRANSFERS TO PERSONS*

Capital transfers to persons consists of payments to the Uniformed Services Retiree Health Care Fund to amortize the cost of the unfunded liability. Not seasonally-adjusted quarterly data are from the *MTS* [31.3]; payments are made generally once a year. Calendar-year estimates are summed from the quarterly data. Seasonally-adjusted quarters are interpolations of annual data. Current quarterly estimates are judgmental extrapolations based on budget projections.

#### *NET PURCHASES OF NON-PRODUCED ASSETS*

Net purchases of nonproduced assets consists of transactions in land (purchases less sales), bonuses paid from drilling rights on the Outer Continental Shelf, and FCC proceeds from the auctions of the radio spectrum.

#### *CONSUMPTION OF FIXED CAPITAL*

See sections on general government defense expenditures of fixed capital under the section on Defense Expenditures and Gross Investment and nondefense consumption of fixed capital under the section on Nondefense Expenditures and Gross Investment. (page 69).

## NET FEDERAL LENDING OR BORROWING (-)

Total receipts less total expenditures.

## 5. REAL CONSUMPTION EXPENDITURES AND GROSS INVESTMENT

Estimates of real government output are generally based on measures of real inputs; estimates of real consumption expenditures, in turn, are derived from estimates of real government output. Estimates of real inputs and of gross investment are prepared either by deflation, by extrapolation of reference-year values using volume indicators, or by direct pricing.<sup>29</sup> The data used for deflation include prices paid by the Federal Government, producer and consumer price indexes (PPIs and CPIs) published by the BLS [27.1, 27.5], construction cost indexes compiled by the Census Bureau [21.1] and BEA, agricultural prices from the USDA [20.1, 20.5], BLS employment cost indices (ECIs) [27.4], and average hourly earnings (AHEs) from BLS [27.2]. As an example of volume extrapolation, employment data are used to extrapolate reference-year compensation, and the value of services furnished without payment by depository institutions is extrapolated using the number of transactions. Quantities of agricultural commodities, certain petroleum transactions, and a variety of military goods and some services are prepared using the direct-pricing method.

NIPA table 3.9.1 shows percent change from preceding period for real government consumption expenditures and gross investment; table 3.9.2 shows contributions to percent change; table 3.9.3 shows quantity indexes; table 3.9.4 shows price indexes; table 3.9.5 shows current dollars; and table 3.9.6 shows chained dollars. NIPA tables 3.10.x show similar information for government consumption expenditures and general government gross output; and NIPA tables 3.11.x show this information for national defense consumption expenditures and gross investment by type.

For compensation of general government employees, except own-account investment, and for imputed financial services, reference-year values are extrapolated by quantity indicators. For certain components of national defense consumption expenditures and gross investment, for CCC purchases of farm commodities, and for certain purchases and sales of petroleum, quantities are prepared as part of the direct-pricing method and are used to extrapolate reference-year estimates to produce real estimates. For certain components of consumption expenditures and gross investment, current-dollar estimates are deflated (that is, divided by) using price indexes. For a substantial portion of national defense consumption expenditures and gross investment, price indexes are prepared by BEA using information on prices paid by the DOD; these price indexes are used to deflate current-dollar estimates.<sup>30</sup> For other consumption

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<sup>29</sup> The direct pricing method involves multiplying the delivered quantity of a specific good or service in a period by the unit price for that good or service in the period to arrive at total expenditures.

<sup>30</sup> As noted, for current-dollar national defense consumption expenditures and gross investment, many of the data sources were identified in a major project undertaken by BEA with DOD [33] in 1975. For years before 1972,

expenditures and gross investment, the price indexes are derived using construction price indexes, CPIs, and PPIs [21.1, 27.1, 27.5], or are constructed from ECIs [27.4] and from AHEs [27.2].<sup>31</sup> The prices and quantities implicit in the current-dollar and real estimates are used to produce chain-type measures.

Tables II-7 and II-8 indicate which of the three methods is used to prepare estimates of real Federal consumption expenditures by input-cost component and of gross investment by component. They provide an overview of the source data used for annual and quarterly estimates, as well as for current quarterly estimates—the latter are often less complete and less detailed. Tests are conducted for seasonality and, in cases where seasonality is present, the Census Bureau's seasonal adjustment program is used to remove seasonality from the series.

As noted earlier, the "direct-pricing" method for preparing current-dollar estimates is preferred because it captures actual prices paid by the Federal government. For estimates of real consumption expenditures and gross investment that are prepared using the direct-pricing method, the beginning price and quantity data are the same as those used for current-dollar estimates. Calculation of real estimates for directly-priced items is performed at the specification level in order to remove the effect of quality change from the calculated price ratio (current price/reference-year price). The base price for each specification is adjusted to account for quality changes over time. The "quality-adjusted reference-year price" is multiplied by current period quantities to calculate real estimates for each specification. When real estimates at specification level are aggregated, the value of the changes in quality appear in the associated chain-type quantity index, instead of in the chain-type price index.

The technique of specification pricing, as implemented for defense goods and services, consists of determining the relevant physical characteristics of a good and then holding these characteristics constant over time. As long as these characteristics are unchanged, any change in the amount paid for a good is a price change. When the characteristics change, the change is evaluated to determine the performance and cost effects. If the performance is enhanced, the associated quality increase is measured by the cost change.<sup>32</sup> Specification pricing permits linking established time series to modified or replacement specifications, as well as to new products.

The following procedures are used to calculate estimates of quality-change, which are used to

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real consumption expenditures and gross investment was estimated at the total Federal Government level only; no distinction was made between national defense and nondefense consumption expenditures and gross investment. At the total level, 15 types of inputs and gross investment—including military compensation, Commodity Credit Corporation inventory change, and structures—were extrapolated or deflated. Beginning with 1972, consumption expenditures and gross investment are split between national defense and nondefense, and further grouped into the detailed estimates of value added, intermediate goods and services purchased, and gross investment.

<sup>31</sup>For estimates prior to 1993, the estimates of real investment in military facilities are derived using the direct-pricing method. For directly-priced estimates of gross investment, data on the number of square feet and cost per square foot (as well as length of construction period) were available from construction project reports (CPRs) [5] that were submitted by contractors at the beginning and end of each Federal Government construction contract. These reports are no longer available.

<sup>32</sup>For a more detailed discussion, see *Price Changes of Defense Purchases of the United States* [33].

adjust the reported reference-year price over the time span of each specification. The procedures are described in the context of the direct-pricing method, but comparable procedures are also used to construct indexes of DOD prices. The adjustment of reference-year prices for quality changes begins with the determination of the “quality factor” for each specification in each time period. The quality factor is calculated as the ratio of the new price, including the value of any quality change, to the new price less the value of any quality change. The “direct-comparison” procedure is used when the characteristics of a specification change, but there is no impact on performance. In this case, the quality factor is defined to be 1.0, and the entire difference in price is reflected as a true price change. The “direct-link” procedure is used when the entire difference in price level between the old and new product, at the time of the introduction of the new product, is due to a difference in quality—in other words, performance. This procedure makes the value of the quality change in reference-year prices directly proportional to the value of the quality change in current-period prices.

In many instances, a price change represents a combination of quality change and true price change. The “producer cost” procedure is used to place a value on a characteristic change that is determined to be a quality change. The value of the quality change is defined as the cost to the producer of making the change in the current period. Any difference in the price of a good, other than the cost of producing a quality change, is defined as a true price change. Under the producer cost procedure a true price change may include changes arising from fiscal-year buy size, production rate, position on a learning curve, or the selection of a producer. The producer cost procedure is used to isolate the true price change when an indirect link between price and quality exists.

After a quality change has been valued by the producer cost procedure, the quality factor is determined. Quality factors are cumulative over time for a specification. In any current time period, the quality-adjusted reference-year price is the appropriate reference-year price divided by the ratio of the cumulative quality factor in the base year to that in the current year. As stated earlier, the price index in any time period is represented by the ratio of the current price of the specification to its quality-adjusted reference-year price; a measure of real expenditures for the new product is calculated as the current-period quantity times the quality-adjusted reference-year price.

The “overlap pricing” procedure is a linking procedure that is used when a “learning curve” causes overstated prices at the beginning of production for a new specification or weapons system. The learning curve may show steeply falling prices in the beginning years of production because of low initial labor productivity and the subsequent rapid price decline as productivity increases. The overlap pricing procedure uses the price of new components at a point on the learning curve when price change due to learning does not influence the difference in relative prices; in other words, at the bottom of the learning curve. For a fighter aircraft, for example, this point might be with the production of the 100<sup>th</sup> unit. From this lowest point on the learning curve, the current price of a new component is extrapolated backwards using an appropriate proxy to estimate the current price of an efficiently produced new component in the same time period as when an old component was efficiently produced; that is, before production costs or shutdown costs became a major influence on the price of the old component. The difference at this overlap point between the current price for an old component and the estimated current price for the new component is treated as a quality change. The quality factor in this overlap period, where no pure price change exists, is calculated as a ratio of the price of an old component plus

the value of the quality change to the price of an old component alone. This quality factor is accumulated with the previous cumulative quality factor of the old component, and the link over time of a new component with an old component is thus complete.

For estimates that are prepared using the direct-pricing method, the two principal sources of data for constructing quality-adjusted reference-year prices and price indexes are contract control documentation reports---as described in the section on current dollars---and supporting detail behind DOD budget materials, also referred to as "budget exhibit" data. Data on the average price paid for a specification delivered during the base year (2000) are from "budget exhibit" data or contract control documentation reports [4]. This price is adjusted to reflect the cost (in 2000 dollars) of all configuration changes deemed to be quality changes. The values of the quality changes, following the producer cost procedure, draw on information in the contract control documentation reports on the cost of implementing an engineering change order, which is required for any configuration change to a weapons system.

## NATIONAL DEFENSE CONSUMPTION EXPENDITURES AND GROSS INVESTMENT

### CONSUMPTION EXPENDITURES

#### *GROSS OUTPUT OF GENERAL GOVERNMENT*

### Value added

#### COMPENSATION OF GENERAL GOVERNMENT EMPLOYEES

Except for one type of pay, estimates of real compensation of general government employees are prepared by extrapolating reference-year compensation by an index of employment. The extrapolators are adjusted, to the extent possible, for changes in experience and education---that is, in the composition of the workforce. Adjustments are made during benchmarks and annual revisions, and are based on the OPM publication, "The Structure of the Federal Civilian Workforce" [7.19]. General Schedule, Wage Board, senior executive service (SES), and other pay plans are also analyzed to adjust estimates of real compensation to reflect the composition of the workforce. This procedure is designed to approximate specification pricing for labor inputs by general government employees.

#### *MILITARY*

Estimates of real military compensation are derived using extrapolation and deflation methods. Extrapolation is used for the types of compensation that are based on rank or length of service, such as basic pay, or that are based on a percentage of pay, such as reenlistment bonuses.

Deflation is used for special pay, such as pay for flights and for dentists, that are paid to military personnel who meet special requirements and training.

As mentioned earlier in the discussion of the extrapolation method, the quality of a unit of labor purchased is defined in terms of education and experience. Changes in these characteristics are treated as quality changes; all other changes are price changes. For the military pay system, rank and length of service are assumed to represent the education and experience criteria. Twenty-three ranks—ten for officers, four for warrant officers, and nine for enlisted personnel—plus a cadet rank, are identified [7.2, 7.3, 7.7, 7.8]. The 2000 compensation (excluding the special pays) per employee for a given rank and length of service is the reference-year price. Employment by rank and length of service for all other periods is multiplied by this reference-year price to obtain real military compensation excluding special pay. The difference between the average real salary in a given period and the reference-year average salary represents the shift in the composition of employment with respect to educational attainment and experience.

Special pay represents a higher level of educational attainment and experience; therefore, any change in the special pay rate is a price change. Information on changes in special pays is available from the military compensation report [7.1, 7.5]. A price index is constructed for each of the special pays and is used to deflate the current-period expenditures for special pay.

For advance quarterly estimates, two months of employment data are available from DOD manpower reports [7.6] for the extrapolation method; the third month is estimated judgmentally. The third month is available for the preliminary and final estimates.

#### *CIVILIAN*

Estimates of real civilian compensation of general government employees are derived by extrapolation and then allocated to national defense and nondefense consumption expenditures in proportion to employment. The basic unit of purchase—and the extrapolator—is an hour worked; an hour paid is not used because it would reflect changes in holidays and annual leave usage as well as hours worked—the former are considered to be price changes. The hours measures are adjusted for changes in composition of the workforce for skill level and experience; all other changes in wages per hour are recorded as price changes.

There are several Federal civilian pay plans—for example, General Schedule and the Wage Grade. All are based on skill level (grade) and length of service (step). Average 2000 compensation per hour worked (within a pay plan) for each grade is the reference-year price.

Employment data by grade and step for each pay plan for civilian personnel are available monthly from BLS [27.2] and are adjusted to reflect changes in the index of average hours worked. These data are multiplied by the reference-year price to derive real civilian compensation. For advance quarterly estimates, the change in total civilian employment is used to estimate the change in real defense civilian compensation.

#### GENERAL GOVERNMENT CONSUMPTION OF FIXED CAPITAL

Estimates of real general government CFC are estimated by deflating current-dollar investment flows and using BEA's perpetual inventory method. Price indexes for corresponding categories

of structures and equipment and software are used to deflate investment flows.<sup>33</sup>

## Intermediate goods and services purchased

### DURABLE GOODS

Most categories of durable goods are described in the section on equipment and software, page 73.

#### *OTHER DURABLE GOODS*

Expenditures for all annual and quarterly estimates of real other durable goods are prepared by deflation using PPIs [27.5].

### NONDURABLE GOODS

#### *PETROLEUM PRODUCTS*

Real intermediate purchases for petroleum are prepared using two methods. Almost all are prepared by direct pricing, using prices from monthly petroleum product reports (PPRs) [14]; the remaining estimates are prepared by deflation using indexes constructed from DOD prices, specifically the indexes derived from the directly-priced estimates.

For advance quarterly estimates, quantities and prices are usually available from the PPRs. When the reports are not available, quantities delivered and prices paid are judgmental extrapolations. For the preliminary and final estimates, all monthly reports are available.

#### *AMMUNITION*

All annual and quarterly estimates of real ammunition expenditures are prepared by deflation using PPIs [27.5].

#### *OTHER NONDURABLE GOODS*

Expenditures for all annual and quarterly estimates of real other nondurable goods are prepared by deflation using PPIs [27.5].

### SERVICES

#### *RESEARCH AND DEVELOPMENT*

Estimates of real intermediate purchases for contractual research and development (R&D) are

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<sup>33</sup> For further information on the perpetual inventory method, see U.S. Department of Commerce, Bureau of Economic Analysis, *Fixed Assets and Consumer Durable Goods in the United States, 1925-97*, Washington, DC: U.S. Government Printing Office, September 2003; <http://www.bea.gov/bea/mp.htm> .



prepared by deflation using PPIs [27.5]. These indexes are available for current quarterly estimates.

#### *INSTALLATION SUPPORT*

Estimates of real intermediate purchases for installation support services are prepared by deflation. Certain expenditures are deflated using composite indexes constructed from PPIs or CPIs [27.1, 27.5] and from ECIs [27.4]. For services purchased abroad, exchange-rate adjustments are made [2] where substantial intermediate purchases occur (usually Germany, Japan, and South Korea). For utility categories, postage, and local telephone service, PPIs and CPIs [27.5, 27.1, respectively] are used for deflation.

#### *WEAPONS SUPPORT*

Estimates of real intermediate purchases for weapons support services are prepared by deflation using AHEs [27.2] and ECIs [27.4].

#### *PERSONNEL SUPPORT*

Estimates of real intermediate purchases for personnel support services are prepared by deflation. For 1993 forward, services such as training and education are deflated using CPIs from BLS [27.1]; consulting services is deflated using CPIs and an ECI [27.4]. Prior to 1993, these services were primarily deflated by AHEs [27.2]. The services of foreign nationals are deflated using wage rates paid by DOD [12] in various countries—the wage rates are exchange-rate adjusted [2]. Most of the wage rate data are not available until the second annual revision; they are estimated judgmentally until they become available.

Current quarterly estimates are primarily judgmental extrapolations; price data and projections for education, training, and consulting are available from BLS. Price data for foreign nationals' services are based on judgmental projections for wage rates and are exchange-rate adjusted.

#### *TRANSPORTATION OF MATERIAL*

Estimates of real intermediate purchases for the transportation of material are prepared by deflation using indexes constructed from DOD prices available in reports from the Military Sealift Command [19.6], Navy Material Transportation Office [19.7], Surface Deployment and Distribution Command [19.4, 19.5], and Air Mobility Command [19.1].<sup>34</sup> Samples of trips from each of three categories—air, sea, and truck personal property—and of terminal services are priced each quarter to construct price indexes for each category. Price indexes for rail and truck transportation are calculated from actual transactions. For the current estimate, real intermediate purchases for each of the categories are prepared by deflation using indexes constructed from PPIs [27.5].

For the current estimate, real intermediate purchases for each of the

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<sup>34</sup> Data from the Navy Material Transportation Office are unavailable after 1983.

categories are prepared by deflation using indexes constructed from PPIs [27.5].

#### *TRAVEL OF PERSONS*

Estimates of real intermediate purchases for the travel of persons are prepared by deflation. Indexes constructed from DOD prices available in reports from the Surface Deployment and Distribution Command, the Air Mobility Command, and a trade source are used to deflate air travel and travel by bus and rail [19.1, 19.2, 19.3]. Bus and rail travel indexes are constructed using a sample of trips from these two categories. Indexes constructed from GSA information on reimbursement rates for per diem, for dislocation allowances, and for mileage for privately owned vehicles [35] and from CPIs for taxi fares and car rental fees [27.1] are used to deflate reimbursable travel expenses.

For current estimates, real intermediate purchases for each of the categories are prepared by deflation using composite indexes constructed from PPIs [27.5].

#### *OWN-ACCOUNT INVESTMENT*

Own-account investment in structures is judgmentally allocated between defense and nondefense. The defense portion of Federal own-account investment in structures is assigned to “Military facilities” (See NIPA table 5.8.xB, line 13). Own-account goods and services for construction are then allocated to durable goods (0.194), nondurable goods (0.433) and services (0.373). Existing price indexes for construction parts, other nondurable goods and architectural and engineering services are used to deflate own-account goods and services for defense construction.

Federal own-account investment in software is deflated using a combination of the price indexes for BEA own-account software intermediate inputs index and the Federal government Federal Government nondefense compensation price index.

#### *SALES TO OTHER SECTORS*

Real estimates of sales of training services are prepared by deflation using the implicit price deflator developed by BEA for military officers’ compensation.

#### *GROSS INVESTMENT*

##### *STRUCTURES*

New structures and net purchases of used structures, other than military facilities

Estimates of real gross investment for family housing (residential) and industrial facilities are prepared by deflation. Family housing is deflated using the Census Bureau price index for single-family houses under construction [21.1]. DOE construction of industrial facilities is deflated using a composite index consisting of the Turner Construction Company’s building-cost index (Turner index), the Federal Highway Administration (FHWA) highway structures construction

index (a component of the composite), and the Census Bureau price index for single-family houses under construction.

Net purchases of used structures are deflated using a composite of the Census Bureau price index for single-family houses under construction, the Turner index, Bureau of Reclamation index, FHWA structures, and the FHWA composite index.

For current quarterly estimates, all indexes related to new structures and net purchases of used structures are available for the advance estimate.

## Military facilities

Estimates of real consumption expenditures of military facilities are prepared by deflation, using price indexes from a variety of sources. These indexes include the FHWA composite index, the Census Bureau price index for single-family houses under construction, the Turner index, and the Bureau of Reclamation index.<sup>35</sup> An estimate for domestic site preparation is prepared by deflation using PPIs and AHEs [27.5, 27.2]. For site preparation and facilities that are constructed abroad, adjustments are made for the exchange rate [2] between the U.S. dollar and currencies of countries where substantial construction occurs (usually Germany, South Korea, and Japan).

### *EQUIPMENT AND SOFTWARE*

#### Aircraft

Estimates of real aircraft expenditures are prepared using two methods: Most are prepared by direct pricing using DOD prices; the remainder are prepared by deflation, using a combination of the directly-calculated price indexes and PPIs [27.5].

For advance quarterly estimates, quantities and prices are based largely on scheduled deliveries and prices from unpublished “budget exhibit” data [4.1, 4.4, 4.8]. Data from production control reports and contract control documentation reports are incorporated into the estimates as they become available.

#### Missiles

Estimates of real missiles expenditures are prepared using two methods: Most are prepared by direct pricing using DOD prices; the remainder are prepared by deflation using a combination of the directly-calculated price indexes and PPIs [27.5].

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<sup>35</sup> Prior to 1992, the estimate of domestic new construction was prepared by direct pricing. The estimates that were prepared using the direct-pricing method used the number of square feet constructed (or other physical unit measure) and the reference-year cost per square foot, by detailed DOD construction category, derived from information contained in construction project reports (CPRs) [5]. The categories were arranged on the basis of end-use and other characteristics that serve as pricing specifications. The cost per square foot was adjusted to reflect the cost (in 2000 dollars) of any changes in the specification of the construction category. (For more detail, see "Implicit Price Deflators for Military Construction" [31].)

For advance quarterly estimates, quantities and prices are based largely on scheduled deliveries and prices from unpublished “budget exhibit” data [4.2, 4.5, 4.13, 4.14]. Data from production control reports and contract control documentation reports are incorporated as they become available.

## Ships

Estimates of real ships expenditures are prepared by deflation using PPIs [27.5].

## Vehicles

Estimates of real vehicles expenditures are prepared using two methods: Most are prepared by direct pricing using DOD prices; the remainder, mostly cars and trucks, are prepared by deflation using a combination of the directly-calculated price indexes and PPIs [27.5].

For advance quarterly estimates, quantities and prices are based largely on scheduled deliveries and prices from unpublished “budget exhibit” data [4.6, 4.7, 4.9, 4.10, 4.11]. Data from production control reports and contract control documentation reports are incorporated as they become available.

## Electronics and software

Estimates of real electronics and software expenditures are prepared by deflation. For electronics, estimates are deflated using PPIs [27.5]. Estimates of real computers are prepared by deflating current-dollar estimates using BEA’s implicit price deflators for computer equipment.

For software, prepackaged software is deflated using the PPI for prepackaged software [27.5], with a downward bias adjustment to account for the likely understatement of quality-adjusted price declines. For 1994 through 1997, prepackaged software is deflated using BEA’s matched-model index with the bias adjustment. Prior to 1994, an unweighted average of the BEA hedonic index for spreadsheets and word processors and a matched-model index is used. Custom software is deflated using the percentage change in a weighted index of prepackaged software price changes (25 percent) and own-account software price changes (75 percent).

## Other equipment

Expenditures for all annual and quarterly estimates of real other equipment expenditures, such as training equipment, are prepared by deflation using PPIs [27.5].

## NONDEFENSE CONSUMPTION EXPENDITURES AND GROSS INVESTMENT

Current-dollar nondefense consumption expenditures and gross investment are derived in two parts: CCC inventory change and all other consumption expenditures and gross investment. All other consumption expenditures and gross investment are then classified by type: Durable goods,

nondurable goods, compensation, services, structures, and equipment and software. Compensation is derived from total Federal civilian compensation as described in the section on national defense. Gross investment in structures is from the Census Bureau *Current Construction Reports* [21.1]. The remaining consumption expenditures and gross investment are allocated to durable goods, to equipment and software, to nondurable goods except CCC, and to services based on annual estimates of expenditures by object class from the *Treasury Bulletin* [31.4], the *MTS* [31.3], the *Budget Appendix* [3.2], contract awards [5.5], and other agency reports [9, 20.4, 25.2, 25.3]. Quarterly current-dollar estimates of this group are interpolations without an indicator and, for the current estimates, judgmental extrapolations. For additional information on outputs and inputs of consumption expenditures please see Government Receipts and Expenditures Account in Part I.

Table II-8 indicates which of the three methods for preparing real estimates—deflation, extrapolation, or direct pricing—is used for the components of nondefense consumption expenditures and gross investment, and provides an overview of the source data. Table II-8 also shows, in detail, the price indexes or extrapolators that are used to derive estimates of real nondefense consumption expenditures and of gross investment.

## CONSUMPTION EXPENDITURES

### *GROSS OUTPUT OF GENERAL GOVERNMENT*

## Value added

### COMPENSATION OF GENERAL GOVERNMENT EMPLOYEES

Estimates of real Federal civilian compensation are derived by quantity extrapolation using hours worked and reference-year compensation. This procedure is described in the earlier section on estimates of real national defense civilian compensation, page 69. Estimates of real compensation of Coast Guard personnel are derived in the same manner as for military personnel and are added to the estimate for civilian nondefense personnel to yield total real nondefense compensation.

### GENERAL GOVERNMENT CONSUMPTION OF FIXED CAPITAL

Estimates of real general government consumption of fixed capital are prepared by deflation as part of BEA's perpetual inventory method. Price indexes for corresponding categories of structures and equipment and software are used to deflate investment flows that are inputs to the perpetual inventory estimation process.

## Intermediate goods and services purchased

### DURABLE GOODS

Estimates of real consumption expenditures for durable goods are derived by deflation. A BEA price index for computers is used to deflate computer parts. PPIs are used for all other durable goods [27.5].

## NONDURABLE GOODS

Estimates of real CCC inventory change are derived for each of 10 commodities (barley, butter, cheese, corn, upland cotton, grain sorghum, dried milk, rough rice, soybeans, wheat) plus an “all other” commodity category. Estimates of real direct purchases and forfeitures by farmers are obtained by multiplying the related quantities by the ASCS market prices in the base year. Estimates of real dispositions are derived by multiplying data for quantity sold and donated by related average reference-year prices from ASCS [20.1, 20.5]. For all other commodities, real estimates are prepared by deflating the current-dollar value of ASCS direct purchases, forfeitures, and dispositions using a price index of average prices received by farmers [20.5]. Each series is seasonally adjusted using the Census Bureau’s seasonal adjustment program. Estimates of real net inventory change are derived by subtracting the seasonally-adjusted real dispositions from the sum of the seasonally-adjusted real direct purchases and real forfeitures. Estimates of real consumption expenditures for other nondurable goods are derived using direct pricing and deflation. Direct-pricing is used to estimate real purchases of petroleum for the SPR [25.3] and for sales from the Naval Petroleum Reserve [25.2], using prices and quantities from DOE. Other petroleum products and most other nondurable goods are deflated using PPIs [27.5].

## SERVICES

### *SERVICES FURNISHED WITHOUT PAYMENT BY FINANCIAL INTERMEDIARIES EXCEPT LIFE INSURANCE CARRIERS*

Real estimates of the imputed financial services (or services rendered without payment to the Federal Government by commercial banks) are projected at the time of the annual revision using a judgmental trend. For current quarterly estimates, the estimates of imputed financial services are judgmental extrapolations.

### *RESEARCH AND DEVELOPMENT*

Estimates of real research and development (R&D) are prepared by deflation using PPIs [27.5].

### *RENT, COMMUNICATIONS, AND UTILITIES*

Estimates of real rent, communications, and utilities (combined) are prepared by deflation using CPIs [27.1].

### *TRAVEL AND TRANSPORTATION*

Estimates of real travel and transportation are prepared by deflation using PPIs [27.5].

### *OWN-ACCOUNT INVESTMENT*

Own-account investment in structures is judgmentally allocated between defense and nondefense. The nondefense portion of Federal own-account investment in structures is assigned

to “Conservation and development.” (See NIPA table 5.8.xB, line 26). Own-account goods and services for construction are then split into durable goods (0.194), nondurable goods (0.433) and services (0.373). Existing price indexes for other durable goods, other nondurable goods, and architectural and engineering services are used to deflate own-account goods and services for nondefense construction.

Estimates of real own-account investment in software are prepared by deflation using a combination of the price indexes for BEA own-account software intermediate inputs index and the Federal government Federal Government nondefense compensation price index.

#### *SALES TO OTHER SECTORS*

All annual and quarterly estimates of real sales are prepared by deflation using PPIs [27.5].

#### Gross Investment

#### *STRUCTURES*

Real estimates of structures are derived by deflating 11 subcategories of new construction and net purchases of used structures using the price indexes identified in table II-6 and that are described below.

#### New construction

The 11 subcategories of new construction put in place are prepared by deflation using the implicit price deflator developed by BEA for office, factories, and education buildings, the FHWA composite index, the Census Bureau price index for single-family houses under construction, the Turner index, the Bureau of Reclamation index, and the Handy Whitman index. These indexes are smoothed by a three-quarter moving average or are using the Census Bureau’s seasonal adjustment program. The FHWA highway composite price index is smoothed by a 12-quarter moving average, which is seasonally adjusted using the Census Bureau’s seasonal adjustment program.

#### Net purchases of used structures

Estimates of real net purchases of new residential and nonresidential structures are prepared by deflating current-dollar estimates using BEA’s implicit price deflators for new private nonfarm residential structures, for new private farm residential structures, and for new private nonresidential structures.

#### *EQUIPMENT AND SOFTWARE*

## Computers

Estimates of real computers are prepared by deflating current-dollar estimates using BEA's implicit price deflators for computer equipment.

## Software

Beginning with 1998, prepackaged software is deflated using the PPI for prepackaged software [27.5], with a downward bias adjustment to account for the likely understatement of quality-adjusted price declines. For 1994 through 1997, prepackaged software is deflated using BEA's matched-model index with the bias adjustment. Prior to 1994, an unweighted average of the BEA hedonic index for spreadsheets and word processors and a matched-model index is used. Custom software is deflated using the percentage change in a weighted index of prepackaged software price changes (25 percent) and own-account software price changes (75 percent).

## Aerospace equipment

All annual and quarterly real estimates for aerospace equipment are prepared by deflation using PPIs [27.5].

## Vehicles

All annual and quarterly estimates of real vehicles are prepared by deflation using PPIs [27.5].

## Enterprise equipment

All annual and quarterly real estimates for enterprise equipment are prepared by deflation using PPIs [27.5].



## SOURCES

This is a list of information sources used in preparing current- and chained-dollar estimates of Federal Government transactions in the national income and product accounts. Many of the sources shown are unpublished internal record keeping documents and files. In some cases, the information used is more detailed than that available in the listed source, which is the publication most accessible to the public.

1. Board of Governors of the Federal Reserve System. *Annual Report*. Washington, DC: Board of Governors, annually.
2. Board of Governors of the Federal Reserve System. Sector Tables. *Flow of Funds Accounts*. (Statistical Release Z.1.) Washington, DC: Board of Governors, quarterly.
3. Budget documents – Basic
  - 3.1. U.S. Executive Office of the President. Office of Management and Budget. *Budget of the United States Government*. Washington, DC: U.S. Government Printing Office, annually.
  - 3.2. U.S. Executive Office of the President. Office of Management and Budget. *Budget of the United States Government: Appendix*. Washington, DC: U.S. Government Printing Office, annually.
  - 3.3. U.S. Executive Office of the President. Office of Management and Budget. *Budget of the United States Government: Midsession Review*. Washington, DC: U.S. Government Printing Office, annually.
  - 3.4. U.S. Executive Office of the President. Office of Management and Budget. *Budget of the United States Government: Special Analyses*. Washington, DC: U.S. Government Printing Office, annually.
4. Budget documents – Supporting
  - 4.1. U.S. Department of the Air Force. "Committee Staff Procurement Backup Book, Aircraft Procurement, Air Force." Washington, DC, annually, unpublished.
  - 4.2. U.S. Department of the Air Force. "Committee Staff Procurement Backup Book, Missile Procurement, Air Force." Washington, DC, annually, unpublished.
  - 4.3. U.S. Department of the Air Force. "Committee Staff Procurement Backup Book, Other Procurement, Air Force." Washington, DC, annually, unpublished.

- 4.4. U.S. Department of the Army. "Procurement Programs, Committee Staff Procurement Backup Book, Aircraft Procurement, Army." (DD-COMP (AR) 1092.) Washington, DC, annually, unpublished.
- 4.5. U.S. Department of the Army. "Procurement Programs, Committee Staff Procurement Backup Book, Missile Procurement, Army." (DD-COMP (AR) 1092.) Washington, DC, annually, unpublished.
- 4.6. U.S. Department of the Army. "Procurement Programs, Committee Staff Procurement Backup Book, Other Procurement, Army." (DD-COMP (AR) 1092.) Washington, DC, annually, unpublished.
- 4.7. U.S. Department of the Army. "Procurement Programs, Committee Staff Procurement Backup Book, Weapons and Tracked Combat Vehicle Procurement, Army." (DD-COMP (AR) 1092.) Washington, DC, annually, unpublished.
- 4.8. U.S. Department of the Navy. Naval Air Systems Command. "Fiscal-year Budget Estimates, Justification of Estimates, Aircraft Procurement, Navy." Washington, DC, annually, unpublished.
- 4.9. U.S. Department of the Navy. "Other Procurement, Navy, Budget Activity 5, Civil Engineering Support Equipment, Committee Staff Procurement Backup Book." Washington, DC, annually, unpublished.
- 4.10. U.S. Department of the Navy. "Procurement, Marine Corps, Budget Activity 5, Support Vehicles, Committee Staff Procurement Backup Book." Washington, DC, annually, unpublished.
- 4.11. U.S. Department of the Navy. "Procurement, Marine Corps, Budget Activity 2, Weapons and Tracked Combat Vehicles, Committee Staff Procurement Backup Book." Washington, DC, annually, unpublished.
- 4.12. U.S. Department of the Navy. "Weapons Procurement, Navy, Budget Activity 4, Other Weapons, Committee Staff Procurement Backup Book." Washington, DC, annually, unpublished.
- 4.13. U.S. Department of the Navy. "Weapons Procurement, Navy, Budget Activity 1, Ballistic Missiles, Committee Staff Procurement Backup Book." Washington, DC, annually, unpublished.
- 4.14. U.S. Department of the Navy. "Weapons Procurement, Navy, Budget Activity 2, Other Missiles, Committee Staff Procurement Backup Book." Washington, DC, annually, unpublished.
- 4.15. U.S. Executive Office of the President. Office of Management and Budget. "Pay

Raise Impacts.” Washington, DC, annually, unpublished.

4.16. U.S. Executive Office of the President. Office of Management and Budget. *SF133 Report on Budget Execution and Budgetary Resources*. Washington, DC, quarterly.

## 5. Contract awards

5.1. U.S. Department of Defense. Directorate for Information Operations and Reports. *Prime Contract Awards by Service Category and Federal Supply Classification*. Washington, DC: Directorate for Information Operations and Reports, annually.

5.2. U.S. Department of Defense. Office of the Secretary of Defense (Comptroller). *Department of Defense Prime Contract Awards*. Washington, DC: National Technical Information Service, annually.

5.3. U.S. Department of Defense. Office of the Secretary of Defense (Comptroller). *500 Contractors Receiving the Largest Dollar Volume of Prime Contract Awards for RDT&E*. Washington, DC: National Technical Information Service, annually.

5.4. U.S. General Services Administration. Federal Procurement Data System. *Federal Contract Actions Over \$25,000 for Supplies and Equipment-Detail by F.C.* Arlington, VA: U.S. Government Printing Office, quarterly, unpublished.

5.5. U.S. General Services Administration. Federal Procurement Data Center. *Federal Procurement Data System, Special Analysis II*. Arlington, VA: GSA, quarterly.

5.6. U.S. General Services Administration. Federal Procurement Data Center. *Federal Procurement Data System, Standard Report*. Arlington, VA: U.S. Government Printing Office, annually.

## 6. Financial reports

6.1. U.S. Department of the Air Force. Defense Finance and Accounting Service. "Defense Business Operating Fund." (DD-COMP (SA) 1303.) Denver, CO, annually, unpublished.

6.2. U.S. Department of the Air Force. Headquarters, Air Force Accounting and Finance Center. "Appropriation Status by Fiscal-year Program and Subaccounts." (DD-COMP (M) 1002.) Denver, CO, monthly, unpublished.

6.3. U.S. Department of the Air Force. Headquarters, Air Force Accounting and Finance Center. "Report on Budget Execution." (DD-COMP (M) 133.) Denver, CO, monthly, unpublished.

- 6.4. U.S. Department of the Army. Defense Business Operating Fund. "Army Stock Fund." (DD-COMP (M) 1303.) Indianapolis, IN, annually, unpublished.
- 6.5. U.S. Department of the Army. Defense Finance and Accounting Service. "Appropriation Status by Fiscal-year Program and Subaccounts." (DD-COMP (M) 1002.) Indianapolis, IN, monthly, unpublished.
- 6.6. U.S. Department of the Army. Defense Finance and Accounting Service. "Report on Budget Execution, Obligation Basis." (DD-COMP (M) 1125.) Indianapolis, IN, monthly, unpublished.
- 6.7. U.S. Department of the Army. Finance and Accounting Center. "Army Industrial Fund, Annual Report to the Department of Defense." (DD-COMP (AR) 1307.) Indianapolis, IN, annually, unpublished.
- 6.8. U.S. Department of Defense. Defense Business Operations Fund. "Air Force Consolidated Supply Management, Reimbursable Issues." Indianapolis, IN, monthly, unpublished.
- 6.9. U.S. Department of Defense. Washington Headquarters Service. "Appropriation Status by Fiscal-year Program and Subaccounts." (DD-COMP (M) 1002.) Washington, DC, monthly, unpublished.
- 6.10. U.S. Department of Defense. Washington Headquarters Service. "Defense Logistic Agency Stock Funds." (DD-COMP (M) 1303.) Alexandria, VA, monthly, unpublished.
- 6.11. U.S. Department of the Navy. Defense Finance and Accounting Service. "Appropriation Status by Fiscal-year Program and Subaccounts." (DD-COMP (M) 1002.) Cleveland, OH, monthly, unpublished.
- 6.12. U.S. Department of the Navy. Defense Finance and Accounting Service. "Report on Budget Execution, Obligation Basis." (DD-COMP (M) 1125.) Cleveland, OH, monthly, unpublished.

## 7. Manpower reports

- 7.1. Army Times Publishing Company. *At Your Service Report*. Washington, DC: Army Times Publishing Company, periodically.
- 7.2. U.S. Department of the Air Force. "Justification of Estimates for Military Personnel, Air Force." Washington, DC, annually, unpublished.
- 7.3. U.S. Department of the Army. "Justification of Estimates for Military Personnel, Army." Washington, DC, annually, unpublished.

- 7.4. U.S. Department of Defense. Office of the Actuary. "DOD Statistical Report on the Military Retirement System." (RCS DDM(A) 1375.) Washington, DC, annually, unpublished.
- 7.5. U.S. Department of Defense. Office of the Secretary of Defense. *Military Compensation Background Papers, Compensation Elements and Related Manpower Cost Items, Their Purposes and Legislative Backgrounds*. Washington, DC: U.S. Government Printing Office, quadrennially.
- 7.6. U.S. Department of Defense. Washington Headquarters Services. *Military Manpower Statistics*. Washington, DC: U.S. Government Printing Office, quarterly.
- 7.7. U.S. Department of the Navy. "Justification of Estimates for Military Personnel, Marine Corps." Washington, DC, annually, unpublished.
- 7.8. U.S. Department of the Navy. "Justification of Estimates for Military Personnel, Navy." Washington, DC, annually, unpublished.
- 7.9. U.S. Executive Office of the President. Schedule One. "General Wage Rates." Washington, DC, annually, unpublished.
- 7.10. U.S. Executive Office of the President. Schedule Two. "Foreign Service Compensation." Washington, DC, annually, unpublished.
- 7.11. U.S. Executive Office of the President. Schedule Three. "Department of Veteran's Affairs Compensation." Washington, DC, annually, unpublished.
- 7.12. U.S. Executive Office of the President. Schedule Four. "Senior Executive Service Compensation." Washington, DC, annually, unpublished.
- 7.13. U.S. Executive Office of the President. Schedule Five. "Executive Service Compensation." Washington, DC, annually, unpublished.
- 7.14. U.S. Executive Office of the President. Schedule Six. "Vice President and Members of Congress Compensation." Washington, DC, annually, unpublished.
- 7.15. U.S. Executive Office of the President. Schedule Seven. "Judicial Salaries." Washington, DC, annually, unpublished.
- 7.16. U.S. Executive Office of the President. Schedule Nine. "Interim Geographic Adjustments for Certain Employees in Specified Areas Compensation." Washington, DC, annually, unpublished.
- 7.17. U.S. Office of Personnel Management. Office of Workforce Information. "Current Status Report." Washington, DC, quarterly, unpublished.

- 7.18. U.S. Office of Personnel Management. Office of Workforce Information. *Federal Civilian Workforce Statistics, Employment and Trends*. Washington, DC: U.S. Government Printing Office, bimonthly.
- 7.19. U.S. Office of Personnel Management. Office of Workforce Information. *Federal Civilian Workforce Statistics, Pay Structure of the Federal Civil Service*. Washington, DC: U.S. Government Printing Office, annually.
8. McNeil Technologies. "Total Energy Use and Cost by Federal Agencies." Washington, DC, annually.
9. National Aeronautics and Space Administration. Financial Management Division. "NASA Contractual Research and Development Expenditures Report." Washington, DC, quarterly, unpublished.
10. National Science Foundation. Division of Science Resources Statistics. *Federal Funds for Research and Development, Detailed Historical Tables*. Arlington, VA: National Science Foundation, annually.
11. National Science Foundation. Division of Science Resources Statistics. *Federal Research and Development Funding by Budget Function*. Arlington, VA: National Science Foundation, annually.
12. Organization for Economic Cooperation and Development. Department of Economics and Statistics. *Main Economic Indicators*. Paris, France: Organization for Economic Cooperation and Development, monthly.
13. Pension Benefit Guaranty Corporation. *Pension Insurance Data Book: PBGC – Single and Multi-employer Benefits Payments*. Washington, DC: Pension Benefit Guaranty Corporation, annually.
14. Petroleum product reports
  - 14.1. U.S. Department of Defense. Defense Finance and Accounting Service, "Financial Status Report for Bulk and Bunker Products," Columbus, OH, monthly, unpublished.
  - 14.2. U.S. Department of Defense. Defense Finance and Accounting Service, "Financial Status Report for Into-Plane Products," Columbus, OH, monthly, unpublished.
  - 14.3. U.S. Department of Defense. Defense Finance and Accounting Service, "Purchase Journal of Posts, Camps, and Stations – Direct Delivery," Columbus, OH, monthly, unpublished.

- 14.4. U.S. Department of Defense. Defense Logistics Agency. "Defense Energy Support Center Fact Book." Ft. Belvoir, VA, annually.
15. Production control reports
- 15.1. U.S. Department of the Air Force. F/A-22 System Program Office, Aeronautical Systems Center. "Monthly Delivery Report – F/A-22." Wright-Patterson Air Force Base, Fairborn, OH, quarterly, unpublished.
- 15.2. U.S. Department of the Air Force. Plan and Program Directorate, Air Mobility Command. "Monthly Delivery Report-C-17." Scott Air Force Base, Belleville, IL, quarterly, unpublished.
- 15.3. U.S. Department of the Army. Program Executive Office, Armored Systems Modernization. "Monthly Delivery Report." Warren, MI, quarterly, unpublished.
- 15.4. U.S. Department of the Army. Redstone Arsenal, Missiles. "Monthly Delivery Report." Huntsville, AL, quarterly, unpublished.
- 15.5. U.S. Department of the Army. Tank Automotive Command, Vehicles. "Monthly Delivery Report." Rock Island, IL, quarterly, unpublished.
16. Social Security Administration reports
- 16.1. Social Security Administration. "Social Security Benefit Data: Benefit Composition Report," Washington, DC, monthly.
- 16.2. Social Security Administration. *Social Security Bulletin: Annual Statistical Supplement*. Washington, DC: U.S. Government Printing Office, monthly.
- 16.3. Social Security Administration. "SSI Report," Washington, DC, monthly, unpublished.
17. Tennessee Valley Authority. TVA Retirement System Board of Directors. *TVA Retirement System Annual Report*. Knoxville, TN: TVA, annually.
18. Thrift Savings Oversight Board. "Financial Status of the TSP Fund." Washington, DC: monthly, unpublished.
19. Travel and transportation reports
- 19.1. U.S. Department of the Air Force. Air Mobility Command. "Commercial Augmentation Expenses." Scott Air Force Base, Belleville, IL, quarterly, unpublished.
- 19.2. U.S. Department of the Army. Surface Deployment and Distribution Command. "Defense Price Index Report: Passenger Traffic Report of Air Passenger Fares." Alexandria, VA, quarterly, unpublished.

- 19.3. U.S. Department of the Army. Surface Deployment and Distribution Command. "Defense Price Index Report: Passenger Traffic Report of Bus Passenger Fares." Alexandria, VA, quarterly, unpublished.
- 19.4. U.S. Department of the Army. Surface Deployment and Distribution Command. "Logistics Longshoreman Rate's Report." Alexandria, VA, annually, unpublished.
- 19.5. U.S. Department of the Army. Surface Deployment and Distribution Command. "Personal Property Transportation Costs." Alexandria, VA, annually, unpublished.
- 19.6. U.S. Department of the Navy. Military Sealift Command. "Summary of Time Chartered and Contract Operated Ships." Washington, DC, quarterly, unpublished.
- 19.7. U.S. Department of the Navy. Navy Material Transportation Office. "QuickTrans Cost Data." Norfolk, VA, quarterly, unpublished.

20. U.S. Department of Agriculture reports

- 20.1. U.S. Department of Agriculture. Agricultural Marketing Service. *Dairy Market Statistics: Annual Summary*. Washington, DC: U.S. Government Printing Office, annually.
- 20.2. U.S. Department of Agriculture. Commodity Credit Corporation. *ANNXCI Report: Net Gain or Loss on Commodity Operations by Commodity*. Kansas City, MO: U.S. Government Printing Office, monthly.
- 20.3. U.S. Department of Agriculture. Food and Nutrition Service. "Food stamp benefits report," Washington, DC, quarterly, unpublished.
- 20.4. U.S. Department of Agriculture. Forest Service. "Timber Harvested Under Sales and Land Exchanges by Regions." Washington, DC, quarterly, unpublished.
- 20.5. U.S. Department of Agriculture. National Agricultural Statistics Service. "Agricultural Prices." Washington, DC, Agricultural Statistics Board of Publications, monthly.

21. U.S. Department of Commerce, Bureau of the Census reports

- 21.1. U.S. Department of Commerce. Bureau of the Census. *Current Construction Reports: Value of New Construction Put In Place (C-30)*. Washington, DC: U.S. Government Printing Office, monthly.
- 21.2. U.S. Department of Commerce. Bureau of the Census. *Federal Expenditures by State for Fiscal-years*. Washington, DC: U.S. Government Printing Office, annually.



22. U.S. Department of Commerce, BEA publications and articles
  - 22.1. U.S. Department of Commerce. Bureau of Economic Analysis. *Corporate Profits: Profits Before Tax, Profits Tax Liability, and Dividends*. (BEA Methodology Paper Series MP-2.) Washington, DC: U.S. Government Printing Office, September 2002.
  - 22.2. U.S. Department of Commerce. Bureau of Economic Analysis. *Foreign Transactions*. (BEA Methodology Paper Series MP-3.) Washington, DC: U.S. Government Printing Office, May 1987.
  - 22.3. U.S. Department of Commerce. Bureau of Economic Analysis. "Implicit Price Deflators for Military Construction." *Survey of Current Business* 63 (November 1983): 14-18.
  - 22.4. U.S. Department of Commerce. Bureau of Economic Analysis. "Improved Deflation of Purchases of Computers." *Survey of Current Business* 66 (March 1986): 7-10.
  - 22.5. U.S. Department of Commerce. Bureau of Economic Analysis. "Measuring the Services of Commercial Banks in the NIPAs: Changes in Concepts and Methods." *Survey of Current Business* 83 (September 2003): 33-44.
  - 22.6. U.S. Department of Commerce. Bureau of Economic Analysis. *Price Changes of Defense Purchases of the United States*. Washington, DC: U.S. Government Printing Office, March 1979.
  - 22.7. U.S. Department of Commerce. Bureau of Economic Analysis. "Quality-Adjusted Price Indexes for Computer Processors and Selected Peripheral Equipment." *Survey of Current Business* 66 (January 1986): 41-50.
  - 22.8. U.S. Department of Commerce. Bureau of Economic Analysis. "U.S. International Transactions." Quarterly in March, June, September, and December issues of *Survey of Current Business*. Washington, DC: U.S. Government Printing Office, monthly.
23. U.S. Department of Defense. Defense Communications Agency. "Communication Services Industrial Fund." (H670.) Washington, DC, quarterly, unpublished.
24. U.S. Department of Defense. Defense Communications Agency. "Communication Services Industrial Fund." Scott Air Force Base, Belleville, IL, quarterly, unpublished.
25. U.S. Department of Defense. Office of Civilian Health and Medical Programs of the Uniformed Services. "TRICARE annual report." (OHM-065.) Aurora, CO, monthly, unpublished.

25. U.S. Department of Energy reports

- 25.1. U.S. Department of Energy. Energy Information Administration. *Petroleum Monthly Supply*. Washington, DC, monthly.
- 25.2. U.S. Department of Energy. Office of Naval Petroleum and Oil Shale Reserves. "Monthly Sales Distribution of NPR Production." Washington, DC, monthly, unpublished.
- 25.3. U.S. Department of Energy. Office of the Strategic Petroleum Reserve. "SPR Report." Washington, DC, as relevant, formerly monthly, unpublished.

26. U.S. Department of Health and Human Services. Centers for Medicaid and Medicare. "Incurred HSMI benefits," Baltimore, MD, annual, unpublished.

27. U.S. Department of Labor, Bureau of Labor Statistics reports

- 27.1. U.S. Department of Labor. Bureau of Labor Statistics. *CPI Detailed Report*. Washington, DC: U.S. Government Printing Office, monthly.
- 27.2. U.S. Department of Labor. Bureau of Labor Statistics. *Employment and Earnings*. Washington, DC: U.S. Government Printing Office, monthly.
- 27.3. U.S. Department of Labor. Bureau of Labor Statistics. *Employment and Wages*. Washington, DC: U.S. Government Printing Office, annually.
- 27.4. U.S. Department of Labor. Bureau of Labor Statistics. *Employment Cost Index*. Washington, DC: U.S. Government Printing Office, quarterly.
- 27.5. U.S. Department of Labor. Bureau of Labor Statistics. *Producer Prices and Price Indexes*. Washington, DC: U.S. Government Printing Office, monthly.

28. U.S. Department of Labor, other reports

- 28.1. U.S. Department of Labor. Employment and Training Administration. Office of Workforce Security. "FUTA taxable wages." Washington, DC, annually, unpublished.
- 28.2. U.S. Department of Labor. Employment and Training Administration. *Unemployment Insurance Financial Data*. (ETA Handbook 394.) Washington, DC: U.S. Department of Labor, 1984.
- 28.3. U.S. Department of Labor. Employment and Training Administration. "Unemployment Insurance Weekly Claim Report." Washington, DC, weekly.
- 28.4. U.S. Department of Labor. Employment and Training Administration. "Update to

ETA Handbook 394.” Washington, DC, annually, unpublished.

28.5. U.S. Department of Labor. Office of Management and Planning. “Classification of Benefits report, Black Lung disability trust fund,” Washington, DC, monthly, unpublished.

29. U.S. Department of Treasury, Alcohol and Tobacco Tax and Trade Bureau reports

29.1. U.S. Department of the Treasury. Alcohol and Tobacco Tax and Trade Bureau. *Monthly Statistical Release: Beer*. Washington, DC: U.S. Department of the Treasury, monthly.

29.2. U.S. Department of the Treasury. Alcohol and Tobacco Tax and Trade Bureau. *Monthly Statistical Release: Tobacco Products*. Washington, DC: U.S. Department of the Treasury, monthly.

29.3. U.S. Department of the Treasury. Alcohol and Tobacco Tax and Trade Bureau. “Tax Collections, Cumulative Summary,” Washington, DC: U.S. Department of the Treasury, annually.

30. U.S. Department of Treasury. Bureau of Public Debt. “Monthly Interest Expense Report,” Washington, DC, monthly.

31. U.S. Department of Treasury, Financial Management Service (FMS) reports

31.1. U.S. Department of the Treasury. Financial Management Service. *Combined Statement of Receipts, Outlays, and Balances of the United States Government*. Washington, DC: U.S. Government Printing Office, annually. (For fiscal-years after 1983.)

31.2. U.S. Department of the Treasury. Financial Management Service. *Daily Treasury Statement*. Washington, DC: U.S. Government Printing Office, daily.

31.3. U.S. Department of the Treasury. Financial Management Service. *Monthly Treasury Statement of Receipts and Outlays of the United States Government* (and unpublished detail). Washington, DC: U.S. Government Printing Office, monthly.

31.4. U.S. Department of the Treasury. Financial Management Service. *Treasury Bulletin*. Washington, DC: U.S. Government Printing Office, quarterly.

31.5. U.S. Department of the Treasury. Financial Management Service. *Treasury Combined Statement of Receipts, Expenditures, and Balances of the United States*. Washington, DC: U.S. Government Printing Office, annually. (For fiscal-years prior to

1984.)

32. U.S. Department of Treasury, Internal Revenue Service (IRS) reports

- 32.1. U.S. Department of Treasury. Internal Revenue Service. "Net Tax Refund Report: Nationwide Consolidated Report." Washington, DC, monthly, unpublished.
- 32.2. U.S. Department of Treasury. Internal Revenue Service. *Statistics of Income Bulletin*. Washington, DC: U.S. Government Printing Office, quarterly.
- 32.3. U.S. Department of Treasury. Internal Revenue Service. "Summary of Assessment Certificates Issued." Washington, DC, monthly, unpublished.

33. U.S. Department of Veterans Affairs. Administrator of Veterans Affairs. *Annual Report*. Washington, DC: U.S. Government Printing Office, annually.

34. U.S. Department of Veterans Affairs. Office of Budget and Finance. "Statement of Ledger Assets, Income, and Disbursements, Veterans Life Insurance." Washington, DC, monthly, unpublished.

35. U.S. General Services Administration. "Vehicle acquisition report: Customer Agency Report," Washington, DC, quarterly, unpublished.

36. U.S. Postal Service reports

- 36.1. U.S. Postal Service. Department of the Controller. *Summary Financial and Operating Statements*. Washington, DC: U.S. Postal Service, every four weeks.
- 36.2. U.S. Postal Service. Postal Data Center. "Invoice and Statement." (PS Form 1903-DZ.) Washington, DC, quarterly, unpublished.
- 36.3. U.S. Postal Service. Postmaster General. *Annual Report of the Postmaster General*. Washington, DC: U.S. Postal Service, annually.

37. U.S. Railroad Retirement Board. *Annual Report*. Chicago, IL: U.S. Railroad Retirement Board, annually.

## APPENDIX I

### Information Related to Federal Government Federal Government Transactions

The following list of selected articles and papers on Federal Government Federal Government transactions have appeared in the *Survey of Current Business*.

#### Recurring Articles

1. "Federal Budget Estimates, Fiscal-year 2005," (March 2004) by Benyam Tsehaye and Michelle Robinson presents the annual translation of the administrations' budget receipts and outlays on a basis that is consistent with the framework of the national income and product account. Similar articles appeared in the most years, including the following issues: March 2003, March 2002, and May 2001.
2. "Comparison of BEA Estimates of Personal Income and IRS Estimates of Adjusted Gross Income: New Estimates for 2002, Revised Estimates for 1959-2001," (November 2004) by Mark A. Ledbetter presents the reconciliation of personal income and adjusted gross income. Similar articles appeared in the most years, including the following issues: April 2004, November 2002), and November 2001.
3. "Federal Personal Income Tax Liabilities and Payments: Preliminary Estimates for 2002, Revised Estimates for 1959-2001" (December 2004) by Mark A. Ledbetter presents a comparison of BEA's estimates of Federal personal current taxes and Internal Revenue Service estimates of personal income tax liabilities. Similar articles appeared in the most years, including the following issues: June 2004, November 2002, and December 2001.

#### Nonrecurring Articles and Papers

1. "Improved Estimates of the National Income and Product Accounts for 1929-2002: Results of the Comprehensive Revision," (February 2004) by Eugene P. Seskin and Daniel Larkins.
2. "Recognition of Business and Government Expenditures for Software as Investment: Methodology and Quantitative Impacts, 1959-98," by Robert P. Parker and Bruce T. Grimm. Full paper <http://www.bea.gov/bea/papers/software.pdf>. Revised PDF versions of Tables 1 and 11, with explanatory note, updated September 2002.
3. 2002. Revised spreadsheet version of Tables 1 and 11, with explanatory note, Updated May 19, 2003.
12. "The Deflation of Military Aircraft," by Richard C. Ziemer and Pamela A. Kelly in *Price Measurements and Their Uses, Studies in Income and Wealth, Volume 57*, National Bureau of Economic Research in Income and Wealth, 1990, University of Chicago Press, Chicago.

## APPENDIX II

### Definitions of the Major Types of National Defense Consumption Expenditures and Gross Investment

Following are brief definitions of the BEA categories of national defense consumption expenditures and gross investment. These categories fall uniquely into one of the four major product types of final demand: Durable goods (including equipment), nondurable goods, services, and structures. These categories differ from the similarly named appropriation categories because the latter may include more than one of the major product types. For example, the Department of Defense (DOD) appropriation for aircraft contains some purchases of engineering services that BEA classifies as services rather than as durable goods.

Government consumption expenditures consists of gross output of general government less own-account investment and sales to other sectors.

Gross output of general government consists of value added and intermediate goods and services purchased.

Value added consists of compensation of general government employees and consumption of general government fixed capital.

Compensation of general government employees consists of military compensation and civilian compensation.

Military compensation consists of wages and salaries and supplements to wages and salaries paid to military employees of DOD. This category also includes pay of the military reserve but does not include the Coast Guard and the National Oceanic and Atmospheric Administration except in wartime.

Civilian compensation consists of wages and salaries and supplements to wages and salaries paid to civilian employees of DOD. This category also includes employees in defense activities of non-DOD agencies; it excludes employees of DOD civil functions such as the Corps of Engineers. The direct and indirect hire of foreign nationals are excluded from this category and are included in the personnel support category.

Consumption of general government fixed capital consists of the depreciation of national defense structures, equipment, and software.

Intermediate goods and services purchased consists of durable goods (primarily parts and hand tools), nondurable goods, and services involving research and development, installation support, weapon support, personnel support, travel of persons, transportation of material, and general government intermediate inputs for production sold to other sectors and for own-account investment.

Durable goods consumption expenditures consists primarily of parts and hand tools for aircraft, missiles, ships, vehicles, electronic equipment, and other durable goods.

Aircraft consumption expenditures consists of spare and repair parts, modification kits, support equipment, and hand tools.

Missiles consumption expenditures consists of spare and repair parts, modification kits, and support equipment for missiles, launching devices, guidance radars, and shelters, as well as parts for torpedoes, space devices such as satellites and boosters.

Ships consumption expenditures consists of spare and repair parts for new ship construction, conversions, and overhauls.

Vehicles consumption expenditures consists of spare and repair parts, and modification kits for combat and noncombat vehicles.

Electronics consumption expenditures consists of spare and repair parts and modification kits for nonairborne communication and electronic equipment, encryption equipment, hand held radios, radar systems, satellite ground stations, tactical communications equipment, sonars, reconnaissance equipment, base communications, and general purpose computer parts and related equipment parts, such as for printers.

Other durable goods consumption expenditures consists of spare and repair parts.

Nondurable goods consists of petroleum products, ammunition, and other nondurable goods.

Petroleum products consists of refined petroleum products such as jet fuels, heating oil, diesel fuel, and gasoline.

Ammunition consists of bombs, cartridges, torpedoes, mines, demolition materials, and other nonnuclear explosive products. Also included are the various load, assembly, and pack services performed on purchased components.

Other nondurable goods consists of food, clothing, printing, medical supplies, cleaning supplies, and other nondurable goods.

Services consists of contractual research and development, installation support services, weapon support services, personnel support service, travel of persons, and transportation of materials.

Research and development (R&D) consists of contractual research, development, and test and evaluation performed by the private sector under contract to DOD. Also included are atomic energy R&D for defense funded by the Department of Energy (DOE) and Federal research centers operated by the private sector, such as the Jet Propulsion Laboratory. R&D performed by DOD and DOE atomic energy activity employees are excluded.

Installation support consists of contractual services related to the operation and maintenance of military installations. Among these services are communications, postage, utilities, equipment maintenance and rental, property maintenance, housekeeping services, and contractor-operated

installations.

Weapons support consists of contractual services related to depot maintenance, weapons modification services, engineering support, system management, and production base support. Spare parts and modification kits are included in purchases of goods; only purchases of services are included in this category.

Personnel support consists of contractual services for consulting, training, education, and direct and indirect hire of foreign nationals.

Transportation of material consists of contractual care and movement of goods by water, rail, truck, and air. Also included are the rental of trucks and other transportation equipment and warehousing fees.

Travel of persons consists of the care and movement of DOD military and civilian employees. Included are tickets for all modes of travel, per diem, taxi fares, automobile rental, and mileage allowances for privately owned vehicles.

Own-account investment consists of structures and software produced by government for its own use. It includes the intermediate purchases of goods and services, including compensation of general government employees.

Sales to other sectors consists of sales of training services and sales of defense goods and services to foreign governments under the foreign military sales program.

Gross investment consists of structures including intermediate purchases of goods and services, including compensation of general government employees.

Structures consists of military facilities, family housing, atomic energy structures, and the intermediate purchases of goods and services, including compensation of general government employees.

Military facilities consists of new construction of facilities built to assist, enhance, or house, the activities of the military services. It includes office buildings, industrial facilities, warehouses, hospitals, highways, airfields, water and sewer systems.

Other structures consists of family housing construction, net purchases of existing structures, and atomic energy defense construction funded by the Department of Energy, and intermediate purchases of goods and services, including compensation of general government employees.

Equipment consists of aircraft, missiles, ships, vehicles, electronic equipment, software, and other equipment.

Aircraft gross investment consists of flyaway new aircraft, both fixed-wing and rotary wing.

Missiles gross investment consists of flyaway new missiles, launching devices, guidance radars,



and shelters, as well as space devices such as satellites and boosters.

Ships gross investment consists of new ship construction and conversions. This category also includes foreign military sales of ships during their period of construction. This category does not include ship overhauls.

Vehicles gross investment consists of new combat and noncombat vehicles.

Electronics equipment gross investment consists of nonairborne communication and electronic equipment. Items include general purpose computers and related equipment such as printers, encryption equipment, hand held radios, radar systems, satellite ground stations, tactical communications equipment, sonars, reconnaissance equipment, and base communication and electronic equipment.

Software consists of prepackaged, custom, and own-account software.

Other equipment gross investment consists of equipment not elsewhere classified. Among the items included are airfield lights, photographic equipment, electronic test equipment, biological and chemical defense equipment, night vision goggles, sonobuoys, and small arms.

TABLES

TABLE II-1. TIMING BASIS OF CURRENT RECEIPTS

<b>Category</b>	<b>Timing basis</b>
Current Receipts:	
Current tax receipts	
Personal current taxes	
Withheld	Accrual
Nonwithheld	Payments
Taxes on production and imports	
Excise taxes	Accrual
Customs duties	Accrual
Taxes on corporate income	Accrual
Taxes from rest of the world	Payments
Contributions for government social insurance	
Employee contributions	Payments
Employer contributions	Accrual
Income receipts on assets	Accrual
Current transfer receipts	
From business	Accrual
From persons	Payments
Current surplus of government enterprises	Accrual

TABLE II-2. TIMING BASIS OF CURRENT EXPENDITURES AND GROSS INVESTMENT

<b>Category</b>	<b>Timing basis</b>
Current expenditures:	
Consumption expenditures	
Compensation	Accrual
Other	Delivery
Current transfer payments	
Government social benefits	
Medicare	Accrual
Other	Payments
Other current transfer payments	Payments
Interest payments	Accrual
Subsidies	
Agricultural	Payments
Other	Accrual
Gross investment:	
Structures	Value-put-in-place
Equipment and software	
Ships	Value-put-in-place
Other	Delivery

TABLE II-3. FEDERAL GOVERNMENT CURRENT RECEIPTS: SOURCES OF ESTIMATES

Line	Category	Calendar-year 2000 Estimates (billions of dollars)	Procedure used to prepare seasonally-adjusted estimates	First Annual Revision: Quarterly and calendar-year estimates	Current quarterly (and monthly) estimates
1	<b>Current Receipts</b>	2053.8			
2	<b>Personal current taxes</b>	999.1			
3	Income taxes	999.1			
4	Withheld	782.8	Interpolated using wages and salaries as indicator.	<i>MTS</i> data less SSA withheld, ITA rest of the world taxes, and IRS interest paid on late taxes.	Extrapolated using wages and salaries as indicator.
5	Declarations and final settlement less refunds	216.2	Interpolated without indicator and calendar-year estimate divided by twelve.	<i>MTS</i> data less SECA taxes, ITA rest of the world taxes, and IRS penalties and interest paid on late taxes.	Extrapolated without indicator and calendar-year estimate divided by twelve.
6	<b>Taxes on production and imports</b>	87.8			
7	Excise taxes	66.7			
8	Gasoline	23.4	Interpolated using SA DOE gasoline production as indicator. (DOE gasoline production seasonally adjusted using Census Bureau's seasonal adjustment program.	Unpublished Treasury data.	Extrapolated using DOE gasoline production as indicator.
9	Alcoholic beverages	7.8	Interpolated using SA TTB withdrawals as indicator. (TTB withdrawals seasonally adjusted using Census Bureau's seasonal adjustment program.)	TTB data.	Extrapolated judgmentally.
10	Tobacco	6.7	Interpolated using SA TTB withdrawals as indicator. (TTB withdrawals seasonally adjusted using Census Bureau's seasonal adjustment program)	TTB data.	Extrapolated judgmentally.
11	Diesel fuel	8.6	Interpolated without indicator.	Unpublished Treasury data.	Extrapolated judgmentally.
12	Air transport	9.9	Interpolated without indicator and NSA=SA.	Unpublished Treasury data and SF 133 report.	Extrapolated judgmentally and when available, SF 133 report.
13	Other	10.2	Interpolated using PCE telephone services as an indicator, interpolated without indicator, and NSA=SA.	Unpublished Treasury data, <i>MTS</i> data, IRS quarterly liabilities, and IRS refunds data.	Extrapolated using PCE telephone services as an indicator and extrapolated judgmentally.
14	Customs duties	21.1	Census Bureau's seasonally adjustment program.	<i>MTS</i> receipts.	<i>MTS</i> receipts.
15	<b>Taxes on corporate income</b>	219.4			
16	Federal Reserve banks	25.3	See corporate profits methodology paper.	See corporate profits methodology paper.	See corporate profits methodology paper.
17	Other	194.1	See corporate profits methodology paper.	See corporate profits methodology paper.	See corporate profits methodology paper.
18	<b>Taxes from the rest of the world</b>	7.3	See ITA methodology paper.	See ITA methodology paper.	See ITA methodology paper.

TABLE II-3. FEDERAL GOVERNMENT CURRENT RECEIPTS: SOURCES OF ESTIMATES

Line	Category	Calendar-year 2000 Estimates (billions of dollars)	Procedure used to prepare seasonally-adjusted estimates	First Annual Revision: Quarterly and calendar-year estimates	Current quarterly (and monthly) estimates
19	<b>Contributions for government social insurance</b>	691.7			
20	Employer contributions	335.4			
21	Old-age, survivors, disability, and hospital insurance	300.3			
22	Old-age, survivors, and disability insurance	233.3	Interpolated using wages and salaries as indicator.	SSA quarterly taxable wages and salaries multiplied by the OASDI tax rate.	Extrapolated using wages and salaries as indicator.
23	Hospital insurance	67.0	Interpolated using wages and salaries as indicator and interpolated without indicator.	SSA quarterly taxable wages and salaries multiplied by the HI tax rate and <i>MTS</i> .	Extrapolated using wages and salaries as indicator and extrapolated judgmentally.
24	Unemployment insurance	28.0			
25	State unemployment insurance	20.5	Interpolated using wages and salaries as indicator.	Unpublished BLS data.	Extrapolated using wages and salaries as indicator.
26	Federal unemployment tax	7.1	Interpolated using wages and salaries as indicator.	Unpublished OWS taxable wages and salaries multiplied by tax rates.	Extrapolated using wages and salaries as indicator.
27	Railroad employees unemployment insurance	0.1	Interpolated using railroad wages and salaries as indicator.	<i>MTS</i> data.	Extrapolated using railroad wages and salaries as indicator.
28	Federal employees unemployment insurance	0.4	Imputations using benefits, see table II-4.	Imputations using benefits, see table II-4.	Imputations using benefits, see table II-4.
29	Railroad retirement	2.9	Interpolated using railroad wages and salaries as indicator.	Regular: RRB annual taxable wages and salaries multiplied by tax rate. Supplemental: Budget data.	Extrapolated using railroad wages and salaries as indicator.
30	Pension benefit guaranty	0.8	NSA = SA.	Budget data.	Extrapolated judgmentally.
31	Veterans life insurance	0.0	Interpolated without indicator.	VA financial reports.	Extrapolated judgmentally.
32	Workers' compensation	2.2	Imputation using benefits, see table II-4.	Imputation using benefits, see table II-4.	Imputation using benefits, see table II-4.
33	Military medical insurance	1.2	Imputation using benefits, see table II-4.	Imputation using benefits, see table II-4.	Imputation using benefits, see table II-4.
34	Employee and self- employed contributions	356.3			
35	Old-age, survivors, disability, and hospital insurance	333.7			
36	Employees	299.7			
37	Old-age, survivors, and disability insurance	231.3	Interpolated using wages and salaries as indicator.	SSA quarterly taxable wages and salaries multiplied by the OASDI tax rate.	Extrapolated using wages and salaries as indicator.
38	Hospital insurance	68.4	Interpolated using wages and salaries as indicator.	SSA quarterly taxable wages and salaries multiplied by the HI tax rate.	Extrapolated using wages and salaries as indicator.
39	Self-employed	34.0	Interpolated without indicator.	SSA quarterly taxable wages and salaries multiplied by the OASDI and HI tax rate.	Extrapolated judgmentally.
40	Supplementary medical insurance	20.4	Interpolated without indicator.	<i>MTS</i> and <i>CMS</i> data.	Extrapolated judgmentally.

TABLE II-3. FEDERAL GOVERNMENT CURRENT RECEIPTS: SOURCES OF ESTIMATES

Line	Category	Calendar-year 2000 Estimates (billions of dollars)	Procedure used to prepare seasonally-adjusted estimates	First Annual Revision: Quarterly and calendar-year estimates	Current quarterly (and monthly) estimates
41	State unemployment insurance	0.1	Interpolated using wages and salaries as indicator.	Unpublished BLS data.	Extrapolated using wages and salaries as indicator.
42	Railroad retirement	1.4	Interpolated using railroad wages and salaries as indicator.	Regular: RRB annual taxable wages and salaries multiplied by tax rate. Supplemental: Budget data.	Extrapolated using railroad wages and salaries as indicator.
43	Veterans life insurance	0.6	Calendar-year estimate divided equally.	VA data.	Calendar-year estimate divided equally.
44	<b>Income receipts on assets</b>	25.2			
45	Interest receipts	20.1			
46	From persons and business				
47	Monetary		NSA = SA.	Budget and IRS data.	Extrapolated judgmentally.
48	Imputed interest received		See article in September 2003 <i>SCB</i> .	See article in September 2003 <i>SCB</i> .	See article in September 2003 <i>SCB</i> .
49	From the rest of the world		NSA = SA.	ITA and FRB data.	ITA projection and when available, ITA and FRB data.
50	Rents and royalties	5.1	NSA = SA.	Budget and SPR data.	Extrapolated judgmentally and SPR data.
51	<b>Current transfer receipts</b>	25.7			
52	From business	14.9			
53	Deposit insurance premiums	3.3	NSA = SA.	Budget data.	Extrapolated judgmentally.
54	Other	11.6	Interpolated without indicator.	Budget and <i>MTS</i> data.	Extrapolated judgmentally.
55	From persons	10.8	Interpolated without indicator and NSA=SA.	Budget, <i>MTS</i> , and IRS quarterly liabilities data.	Extrapolated judgmentally.
56	<b>Current surplus of government enterprises</b>	-2.3			
57	Postal Service	-6.1	Interpolated without indicator.	Postal Service financial reports.	Extrapolated judgmentally.
58	Federal Housing Administration	2.9	Interpolated without indicator.	Budget data.	Extrapolated judgmentally.
59	Tennessee Valley Authority	1.5	Interpolated without indicator.	Tennessee Valley Authority financial reports.	Extrapolated judgmentally.
60	Other	-0.7	Interpolated without indicator.	Budget data.	Extrapolated judgmentally.

TABLE II-4. FEDERAL GOVERNMENT CURRENT EXPENDITURES: SOURCES OF ESTIMATES

Line	Category	Calendar-year 2000 Estimates (billions of dollars)	Procedure used to seasonally-adjusted estimates	First Annual Revision: Quarterly and calendar-year estimates	Current quarterly (and monthly) estimates
1	<b>Current Expenditures</b>	1864.4			
2	<b>Consumption expenditures</b>	499.3			
3	National defense consumption expenditures	321.5	See Table II-5.	See Table II-5.	See Table II-5.
4	Nondefense consumption expenditures	177.8	See Table II-6.	See Table II-6.	See Table II-6.
5	<b>Current transfer payments</b>	1038.1			
6	Government social benefits	772.5			
7	To persons	770.0			
8	Benefits from social insurance funds	655.5			
9	Old-age, survivors, and disability insurance	401.2	Census Bureau's seasonal adjustment program.	SSA monthly payments and ITA data.	<i>MTS</i> outlays and when available, SSA monthly payments.
10	Hospital and supplementary medical insurance	219.6	Interpolated without indicator.	CMS benefits and Census data.	Extrapolated judgmentally.
11	Unemployment insurance	20.4			
12	State	19.9	Census Bureau's seasonal adjustment program and NSA=SA.	OWS data.	Extrapolated judgmentally and extrapolated using regular benefits as indicator.
13	Railroad employees	0.1	Census Bureau's seasonal adjustment program.	<i>MTS</i> outlays.	RRB data and when available, <i>MTS</i> outlays.
14	Federal employees	0.4	Census Bureau's seasonal adjustment program.	Budget and unpublished OWS data.	Extrapolated judgmentally.
15	Special unemployment benefits	0.0	NSA=SA.	Unpublished OWS data.	Unpublished monthly OWS data.
16	Railroad retirement	8.3	NSA=SA.	<i>MTS</i> , ITA, and Census data.	RRB data and when available, <i>MTS</i> outlays.
17	Pension benefit guaranty	0.9	NSA=SA.	OCPR and Budget data.	Extrapolated judgmentally.
18	Veterans life insurance	1.7	Census Bureau's seasonal adjustment program in most years; NSA=SA in others.	VA unpublished reports, ITA, and Census data.	VA benefits and dividends data.
19	Workers' compensation	2.2	Interpolated without indicator.	Unpublished ESA reports.	Extrapolated judgmentally.
20	Military medical insurance	1.2	Interpolated using military manpower levels as indicator.	TRICARE report.	Extrapolated judgmentally.
21	Veterans benefits	23.2			
22	Pension and disability	21.9	Census Bureau's seasonal adjustment program.	<i>MTS</i> outlays, VA reports, ITA, and Census data.	<i>MTS</i> outlays.
23	Readjustment	1.3	NSA=SA.	<i>MTS</i> outlays, VA reports, ITA, and Census data.	Extrapolated judgmentally.
24	Food stamp benefits	14.9	Census Bureau's seasonal adjustment program.	Unpublished FNS data.	Extrapolated judgmentally, and when available, USDA benefits data.
25	Black lung benefits	0.9	NSA=SA.	Unpublished monthly ESA reports.	Extrapolated judgmentally, and when available, monthly benefits data from ESA.
26	Supplemental security income	27.3	NSA=SA.	Budget and SSA data.	SSA benefits.
27	Earned income and child tax credit	27.0	Calendar-year estimate divided by twelve.	<i>MTS</i> outlays.	Extrapolated judgmentally.

TABLE II-4. FEDERAL GOVERNMENT CURRENT EXPENDITURES: SOURCES OF ESTIMATES

Line	Category	Calendar-year 2000 Estimates (billions of dollars)	Procedure used to seasonally-adjusted estimates	First Annual Revision: Quarterly and calendar-year estimates	Current quarterly (and monthly) estimates
28	Other	21.2			
29	Payments to non-profit institutions		Interpolated without indicator.	<i>MTS</i> outlays and fiscal-year analysis relationships.	Extrapolated judgmentally.
30	Trade adjustment assistance		Interpolated using monthly ETA benefit data.	Budget data.	Extrapolated using monthly ETA benefit data.
31	Alaska native claims		Calendar-year estimate divided by twelve.	<i>MTS</i> outlays and fiscal-year analysis relationships.	Extrapolated judgmentally.
32	All other		NSA = SA.	<i>MTS</i> outlays and fiscal-year analysis relationships and FEMA data.	Extrapolated judgmentally.
33	To the rest of the world	2.5	See ITA methodology paper.	See ITA methodology paper.	See ITA methodology paper.
34	Other current transfer payments	265.6			
35	Grants-in-aid to state and local governments	247.3	Census Bureau's seasonal adjustment program, NSA=SA, and interpolated without indicator.	<i>MTS</i> outlays and fiscal-year analysis relationships.	<i>MTS</i> outlays.
36	To the rest of the world (net)	18.3	See ITA methodology paper.	See ITA methodology paper.	See ITA methodology paper.
37	<b>Interest payments</b>	283.3			
38	To persons and business	200.3			
39	Federal Government employee pension plans		Interpolated without indicator.	<i>MTS</i> outlays.	Extrapolated judgmentally.
40	Interest paid on refunds		Interpolated without indicator.	IRS data.	Extrapolated judgmentally.
41	Other		Census Bureau's seasonal adjustment program	BPD, Budget, and ITA data.	<i>MTS</i> outlays and ITA data.
42	To the rest of the world	83.0	See ITA methodology paper.	See ITA methodology paper.	See ITA methodology paper.
43	<b>Subsidies</b>	43.8			
44	Agricultural	22.9	Interpolated using USDA estimates as indicator.	CCC and FSA data.	FSA payments data and extrapolated judgmentally.
45	Housing	19.7	Interpolated without indicator.	<i>MTS</i> outlays and fiscal-year analysis relationships.	Extrapolated judgmentally.
46	Maritime	0.1	Interpolated without indicator.	<i>MTS</i> outlays and fiscal-year analysis relationships.	Extrapolated judgmentally.
47	Air carriers	0.0	Interpolated without indicator.	<i>MTS</i> outlays and fiscal-year analysis relationships.	Extrapolated judgmentally.
48	Other	1.1	Interpolated without indicator.	<i>MTS</i> outlays and fiscal-year analysis relationships.	Extrapolated judgmentally.
49	<b>Less: Wage accruals less disbursements</b>	0.0	See tables II-5 and II-6.	See tables II-5 and II-6.	See tables II-5 and II-6.
50	<b>Net Federal Government saving</b>	189.5	Current receipts less current expenditures.	Current receipts less current expenditures	Current receipts less current expenditures.
51	Social insurance funds	112.3	Interpolated without indicator.	See table II-3 for contributions detail and <i>MTS</i> outlays and fiscal-year analysis relationships for administrative fees.	Extrapolated judgmentally.
52	Other	77.1	Residual.	Residual.	Residual.

ITA International Transaction Accounts  
 BPD Bureau of Public Debt, Department of Treasury  
 CCC Commodity Credit Corporation  
 CMS Centers for Medicare and Medicaid Services

ESA Employment Standards Administration, Department of Labor  
ETA Employment and Training Administration  
FNS Food and Nutrition Service, Department of Agriculture  
FSA Farm Service Agency, Department of Agriculture  
IRS Internal Revenue Service, Department of Treasury  
*MTS Monthly Treasury Statement*  
OCPR Office of Corporate Policy and Research, Pension Benefit Guaranty Corporation  
OWS Office of Workforce Security, Department of Labor  
RRB Railroad Retirement Board  
SSA Social Security Administration  
USDA U.S. Department of Agriculture  
VA Veterans Administration



**TABLE II-5. FEDERAL GOVERNMENT NATIONAL DEFENSE CONSUMPTION  
EXPENDITURES AND GROSS INVESTMENT: SOURCES OF ESTIMATES**

Line	Category	Calendar-year 2000 Estimates (billions of dollars)	Procedure used to prepare seasonally-adjusted estimates	First Annual Revision: Quarterly and calendar-year estimates	Current quarterly estimates
1	<b>National Defense Consumption Expenditures and Gross Investment</b>	370.3			
2	<b>Consumption expenditures</b>	321.5			
3	Gross output of general government	324.6			
4	Value added	199.2			
5	Compensation of general government employees	138.9			
6	Military	89.4			
7	Wages and salaries		Interpolated using military employment as indicator.	Budget wages and salaries.	Extrapolated using military employment as indicator.
8	Supplements to wages and salaries:				
9	Employer contributions for government social insurance		See table II-3 for sources of estimates.	See table II-3 for sources of estimates.	See table II-3 for sources of estimates.
10	Employer contributions for employee pension and insurance funds		Interpolated using military personnel as indicator.	OPM data.	Extrapolated using military personnel as indicator.
11	Civilian	49.5			
12	Wages and salaries		Interpolated using BLS employment a indicator.	OPM wages and salaries and DOT data.	Extrapolated using BLS employment as indicator.
13	Supplements to wages and salaries:				
14	Employer contributions for government social insurance		See table II-3 for sources of estimates.	See table II-3 for source of estimates.	See table II-3 for sources of estimates.
15	Employer contributions for employee pension and insurance funds		Interpolated using BLS employment as indicator.	OPM data.	Extrapolated using BLS employment as indicator.
16	General government consumption of fixed capital	60.2	See table II-7 for sources of estimates.	See table II-7 for sources of estimates.	See table II-7 for sources of estimates.
17	Intermediate goods and services purchased	125.4			
18	Durable goods	22.3			
19	Aircraft	9.8	NSA=SA.	Financial report quarterly disbursements.	Extrapolated using <i>MTS</i> outlays and, when available, financial report quarterly disbursements.
20	Missiles	2.5	NSA=SA.	Financial report quarterly disbursements.	Extrapolated using <i>MTS</i> outlays and, when available, financial report quarterly disbursements.
21	Ships	1.3	Census Bureau's seasonal adjustment program.	<i>MTS</i> outlays.	<i>MTS</i> outlays.

TABLE II-5. FEDERAL GOVERNMENT NATIONAL DEFENSE CONSUMPTION EXPENDITURES AND GROSS INVESTMENT: SOURCES OF ESTIMATES

Line	Category	Calendar-year 2000 Estimates (billions of dollars)	Procedure used to prepare seasonally-adjusted estimates	First Annual Revision: Quarterly and calendar-year estimates	Current quarterly estimates
22	Vehicles	0.8	NSA=SA.	Financial report quarterly disbursements.	Extrapolated using <i>MTS</i> outlays and, when available, financial report quarterly disbursements.
23	Electronics	2.9	NSA=SA and Census Bureau's seasonal adjustment program.	Financial report quarterly disbursements and contract award data.	Extrapolated based on <i>MTS</i> outlays and, when available, financial report quarterly disbursements, and extrapolated judgmentally.
24	Other durable goods	5.0	NSA=SA.	Financial report quarterly disbursements.	Extrapolated judgmentally and, when available, financial report quarterly disbursements.
25	Nondurable goods	10.4			
26	Petroleum products	4.1	Census Bureau's seasonal adjustment program.	PPRs.	Extrapolated judgmentally and, when available, PPRs.
27	Ammunition	1.8	NSA=SA.	Financial report quarterly disbursements.	Financial report quarterly disbursements.
28	Other nondurable goods	4.6	Census Bureau's seasonal adjustment program and interpolated without indicator.	Financial report quarterly disbursements and contract award data.	Extrapolated judgmentally and, when available, quarterly disbursements.
29	Services	92.7			
30	Research and development	26.3	NSA=SA.	<i>MTS</i> outlays and NSF data.	<i>MTS</i> outlays.
31	Installation support	24.9	Interpolated without indicator.	USPS, DODs CSIF, McNeil Technologies, and contract award data.	Extrapolated judgmentally.
32	Weapons support	9.6	Census Bureau's seasonal adjustment program and interpolated without indicator.	Financial report quarterly disbursements and contract award data.	Extrapolated judgmentally and, when available, financial report quarterly disbursements.
33	Personnel support	22.9	NSA=SA and interpolated without indicator.	ITA and contract award data.	Extrapolated judgmentally and, when available, ITA data.
34	Transportation of material	4.3	Interpolated without indicator.	Budget data.	Extrapolated judgmentally.
35	Travel of persons	4.7	Interpolated without indicator.	Budget data.	Extrapolated judgmentally.
36	Less: Own-account investment	1.1			
37	Structures		Census Bureau VPIP data.	Census Bureau VPIP data.	Census Bureau VPIP data.

TABLE II-5. FEDERAL GOVERNMENT NATIONAL DEFENSE CONSUMPTION EXPENDITURES AND GROSS INVESTMENT: SOURCES OF ESTIMATES

Line	Category	Calendar-year 2000 Estimates (billions of dollars)	Procedure used to prepare seasonally-adjusted estimates	First Annual Revision: Quarterly and calendar-year estimates	Current quarterly estimates
38	Software		Interpolated using investment in computers as indicator.	Portion of national total for own-account software.	Extrapolated judgmentally.
39	Less: Sales to other sectors	1.9	NSA=SA	MTS outlays.	MTS outlays and, when available, financial report quarterly disbursements.
40	<b>Gross Investment</b>	48.8			
41	Structures	5.0			
42	New	5.0			
43	Buildings	1.6			
44	Residential	1.3	Census Bureau's seasonal adjustment program .	Financial report quarterly disbursements.	Extrapolated using MTS outlays and, when available, financial report quarterly disbursements.
45	Other, including industrial	0.3	Census Bureau's seasonal adjustment program.	Census Bureau VPIP data.	Census Bureau VPIP data.
46	Military facilities	3.4	NSA=SA.	Financial report quarterly disbursements.	Extrapolated using MTS outlays and, when available, financial report quarterly disbursements.
47	Net purchases of used structures	0.0			
48	Equipment and software	43.8			
49	Aircraft	7.8			
	Directly priced:		NSA=SA.	Production control reports and "budget exhibit" data.	Unpublished DOD data and, when available, production control reports and contract control documentation reports.
	Ratio:		NSA=SA.	Financial report quarterly disbursements.	Extrapolated using MTS outlays and, when available, financial report quarterly disbursements.
50	Missiles	2.7			
	Directly priced:		NSA=SA.	Production control reports and "budget exhibit" data.	Unpublished DOD data and, when available, production control reports and contract control documentation reports.
	Ratio:		NSA=SA.	Financial report quarterly disbursements.	Extrapolated using MTS outlays and, when available, financial report quarterly disbursements.

TABLE II-5. FEDERAL GOVERNMENT NATIONAL DEFENSE CONSUMPTION EXPENDITURES AND GROSS INVESTMENT: SOURCES OF ESTIMATES

Line	Category	Calendar-year 2000 Estimates (billions of dollars)	Procedure used to prepare seasonally-adjusted estimates	First Annual Revision: Quarterly and calendar-year estimates	Current quarterly estimates
51	Ships	6.6	Census Bureau's seasonal adjustment program.	<i>MTS</i> outlays.	<i>MTS</i> outlays.
52	Vehicles Directly priced:	1.8	NSA=SA.	Production control reports and "budget exhibit" data.	Unpublished DOD data and, when available, production control reports and contract control documentation reports.
	Ratio:		NSA=SA.	Financial report quarterly disbursements.	Extrapolated using <i>MTS</i> outlays and, when available, financial report quarterly disbursements.
53	Electronics and software	10.1	NSA=SA and Census Bureau's seasonal adjustment program.	Financial reports quarterly disbursements and contract award data.	Extrapolated using <i>MTS</i> outlays and, when available, financial report quarterly disbursements and extrapolated judgmentally.
54	Electronics and computers				
55	Software		Interpolated using SEC data receipts and trade source sales as indicator.	Census Bureau Service Annual Survey, BEA's I-O accounts, and other sources.	Extrapolated using SEC data receipts and trade source sales as indicator.
56	Other equipment	14.9	NSA=SA.	financial report quarterly disbursements.	Extrapolated based on <i>MTS</i> outlays and, when available, financial report quarterly disbursements.

BLS Bureau of Labor Statistics  
 CCDR Contract Control Documentation Report  
 CCR Current Construction Reports  
 CFC Consumption of fixed capital  
 CSIF Communication Services Industrial Fund  
 DOD U.S. Department of Defense  
 DOT U.S. Department of Transportation  
 I-O BEA's Input-Output accounts  
 NSF National Science Foundation  
 OPM Office of Personnel Management  
 PCR Production control report  
 PCR Production control report  
 PPR Petroleum products report  
 SEC Securities and Exchange Commission  
 USPS United States Postal Service  
 VPIP Value-Put-in-Place

**TABLE II-6. FEDERAL GOVERNMENT NONDEFENSE CONSUMPTION EXPENDITURES  
AND GROSS INVESTMENT: SOURCES OF ESTIMATES**

Line	Category	Calendar-year 2000 Estimates (billions of dollars)	Procedure used to prepare seasonally- adjusted estimate	First Annual Revision: Quarterly and calendar-year estimates	Current quarterly estimates
1	<b>Nondefense Consumption Expenditures and Gross Investment</b>	208.5			
2	<b>Consumption expenditures</b>	177.8			
3	Gross output of general government	184.6			
4	Value added	116.2			
5	Compensation of general government employees	94.8			
6	Wages and salaries		Interpolated using employment as indicator.	OPM wages and salaries and DOT data.	Extrapolated judgmentally.
7	Supplements to wages and salaries:				
8	Employer contributions for government social insurance		See table II-3 for sources of estimates.	See table II-3 for sources of estimates.	See table II-1 for sources of estimates.
9	Employer contributions for employee pension and insurance funds		Interpolated using employment as indicator.	OPM data.	Extrapolated judgmentally.
10	General government consumption of fixed capital	21.4	See table II-8 for sources of estimates.	See table II-8 for sources of estimates.	See table II-8 for sources of estimates.
11	Intermediate goods and services purchased	68.4			
12	Durable goods	1.8	NSA=SA.	<i>MTS</i> outlays.	<i>MTS</i> outlays.
13	Nondurable goods	8.5			
14	Commodity Credit Corporation inventory change	0.8	Census Bureau's seasonal adjustment program.	CCC Headquarter offices, NASS and <i>Dairy Market News</i> .	CCC Headquarter offices, NASS and <i>Dairy Market News</i> .
15	Petroleum products	7.7	Interpolated without indicator.	McNeil technologies data.	Extrapolated judgmentally.
16	Services	58.1			
17	Imputed interest		See article in September 2003 <i>SCB</i> .	See article in September 2003 <i>SCB</i> .	See article in September 2003 <i>SCB</i> .
18	Research and development		Interpolated without indicator and NSA=SA.	NSF and NASA disbursements data.	Extrapolated judgmentally.
19	Rent, communications, and utilities		Interpolated without indicator.	Budget data.	Extrapolated judgmentally.
20	Travel and transportation		Interpolated without indicator.	Budget data.	Extrapolated judgmentally.
21	Less: Own-account investment	2.1			
22	Structures		Census Bureau VPIP data.	Census Bureau VPIP data.	Census Bureau VPIP data.
23	Software		Interpolated using investment in computers as indicator.	Portion of national total for own-account software.	Extrapolated judgmentally.
24	Less: Sales to other sectors	4.7	NSA=SA.	USDA, SPR, and <i>MTS</i> outlays.	Extrapolated judgmentally and when available, USDA, SPR, and <i>MTS</i> outlays.
25	<b>Gross Investment</b>	30.7			
26	Structures	8.3			
27	New	9.5	Census Bureau VPIP data.	Census Bureau VPIP data.	Census Bureau VPIP data.
28	Net purchases of used structures	-1.2	Interpolated without indicator.	FHA, VA, and GSA data.	Last quarter of annual revision.
29	Equipment and software	22.3			

TABLE II-6. FEDERAL GOVERNMENT NONDEFENSE CONSUMPTION EXPENDITURES AND GROSS INVESTMENT: SOURCES OF ESTIMATES

Line	Category	Calendar-year 2000 Estimates (billions of dollars)	Procedure used to prepare seasonally-adjusted estimate	First Annual Revision: Quarterly and calendar-year estimates	Current quarterly estimates
30	Computers		Census Bureau's seasonal adjustment program.	GSA data.	Extrapolated using GSA data as indicator.
31	Software		Interpolated using SEC data receipts and trade source sales as indicator.	Census Bureau Service Annual Survey, BEA's I-O accounts, and other sources.	Extrapolated using SEC data receipts and trade source sales as indicator.
32	Aerospace equipment		Interpolated without indicator.	Budget data.	Extrapolated judgmentally.
33	Vehicles		NSA=SA.	GSA data.	GSA data.
34	Enterprise equipment		Interpolated without indicator.	Budget data.	Extrapolated judgmentally.

DOT U.S. Department of Transportation  
 FHA Federal Housing Administration  
 GSA General Services Administration  
 I-O BEA's Input-Output accounts  
 MTS *Monthly Treasury Statement*  
 NASA National Aeronautics and Space Administration  
 NASS National Agricultural Stabilization Service  
 NSF National Science Foundation  
 OPM Office of Personnel Management  
 SCB Survey of Current Business  
 SEC Securities and Exchange Commission  
 SPR Strategic Petroleum Reserve  
 USDA United States Department of Agriculture  
 VA Veterans Administration  
 VPIP Value-Put-in-Place

**TABLE II-7. REAL FEDERAL GOVERNMENT NATIONAL DEFENSE CONSUMPTION EXPENDITURES AND GROSS INVESTMENT: SOURCES OF ESTIMATES**

Line	Category	Methods	First Annual Revision: Quarterly and calendar-year estimates	Current quarterly estimates
1	<b>National Defense Consumption Expenditures and Gross Investment</b>			
2	<b>Consumption expenditures</b>			
3	Gross output of general government			
4	Value added			
5	Compensation of general government employees			
6	Military	Extrapolation and deflation.	Employment by rank, length of service from MR, and special pay from military and compensation reports.	Extrapolated using employment from MR.
7	Civilian	Extrapolation.	Employment data from OPM.	Employment data from BLS.
8	General government consumption of fixed capital	Deflation.	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.
9	Intermediate goods and services purchased			
10	Durable goods			
11	Aircraft	Directly priced and deflation.	Production control reports, "budget exhibit" data, PPIs and IPDs.	PPIs, IPDS, unpublished DOD data and when available, production control reports, and contract control documentation reports.
12	Missiles	Directly priced and deflation.	Production control reports, contract control documentation reports, PPIs and IPDs.	PPIs, IPDs, unpublished DOD data and when available, production control reports, and contract control documentation reports.
13	Ships	Deflation.	PPIs.	PPIs.
14	Vehicles	Directly priced and deflation.	Production control reports, "budget exhibit" data, PPIs and IPDs.	PPIs, IPDs, unpublished DOD data and when available, production control reports, and contract control documentation reports.
15	Electronics	Deflation.	PPIs and IPDs.	PPIs and IPDs.
16	Other durable goods	Deflation.	PPIs.	PPIs.
17	Nondurable goods			
18	Petroleum products	Directly priced and deflation.	PPRs and DOD prices.	Extrapolated judgmentally and, when available, PPRs.
19	Ammunition	Deflation.	PPIs.	PPIs.
20	Other nondurable goods	Deflation.	PPIs.	PPIs.
21	Services			
22	Research and development	Deflation.	PPIs.	PPIs.
23	Installation support	Deflation.	PPIs, CPI's, ECIs and exchange rate adjustment.	PPIs, CPI's, ECIs and exchange rate adjustment.
24	Weapons support	Deflation.	AHE and ECIs.	AHE and ECIs.
25	Personnel support	Deflation.	CPIs, ECIs and DOD wage rates.	CPIs and extrapolated judgmentally.
26	Transportation of material	Deflation.	MSC, NMTO, MTMC, and AMC.	PPIs.
27	Travel of persons	Deflation.	MTMC, AMC, GSA, and CPIs.	PPIs.
28	Less: Own-account investment			
29	Structures	Deflation	Existing price indexes for construction parts, other nondurable goods, and architectural and engineering services.	Existing price indexes for construction parts, other nondurable goods, and architectural and engineering services.

TABLE II-7. REAL FEDERAL GOVERNMENT NATIONAL DEFENSE CONSUMPTION EXPENDITURES AND GROSS INVESTMENT: SOURCES OF ESTIMATES

Line	Category	Methods	First Annual Revision: Quarterly and calendar-year estimates	Current quarterly estimates
30	Software	Deflated	BEA own-account software intermediate inputs index and the nondefense compensation price index.	BEA own-account software intermediate inputs index and the nondefense compensation price index.
31	Less: Sales to other sectors	Deflation.	IPD for military officers' compensation.	IPD for military officers' compensation.
32	<b>Gross Investment</b>			
33	Structures			
34	New			
35	Buildings			
36	Residential	Deflation.	Census Bureau price index for single-family houses under construction.	Census Bureau price index for single-family houses under construction.
37	Industrial	Deflation.	Turner Construction Co. building cost index, FHWA highway structures construction index, and the Census Bureau price index for single-family houses under construction.	Turner Construction Co. building cost index, FHWA highway structures construction index, and the Census Bureau price index for single-family houses under construction
38	Military facilities	Deflation.	FHWA composite index, the Census Bureau price index for single-family houses under construction, the Turner Construction Co. building cost index, and the Bureau of Reclamation index.	FHWA composite index, the Census Bureau price index for single-family houses under construction, the Turner Construction Co. building cost index, and the Bureau of Reclamation index.
39	Net Purchases	Deflation.	Census Bureau price index for single-family houses under construction, the Turner Construction Co. building cost index, the Bureau of Reclamation index, FHWA structures index, and the FHWA composite index.	Census Bureau price index for single-family houses under construction, the Turner Construction Co. building cost index, the Bureau of Reclamation index, FHWA structures index, and the FHWA composite index.
40	Equipment and software			
41	Aircraft	Directly priced and deflation.	Production control reports, "budget exhibit" data, PPIs, and IPDs.	PPIs, IPDs, unpublished DOD data and, when available, production control reports, and contract control documentation reports.
42	Missiles	Directly priced and deflation.	Production control reports, "budget exhibit" data, PPIs, and IPDs.	PPIs, IPDs, unpublished DOD data and, when available, production control reports, and contract control documentation reports.
43	Ships	Deflation.	PPIs.	PPIs.
44	Vehicles	Directly priced and deflation.	Production control reports, "budget exhibit" data, PPIs, and IPDs.	PPIs, IPDs, unpublished DOD data and, when available, production control reports and contract control documentation reports.
45	Electronics and software	Deflation.	PPIs, IPDs, and weighted index for custom software.	PPIs, IPDs, and weighted index for custom software.
46	Other equipment	Deflation.	PPIs.	PPIs.



AHE Average Hourly Earnings  
AMC Air Mobility Command  
BLS Bureau of Labor Statistics  
CCDR Contract control documentation report  
CPI Consumer Price Index  
DOD U.S Department of Defense  
ECI Employment Cost Index  
FHWA Federal Highway Administration  
GSA General Services Administration  
IPD Implicit price deflator  
MR U.S. Department of Defense manpower reports  
MSC Military Sealift Command  
MTMC Military Traffic Management Command  
NMTO Navy Material Transportation Office  
OPM Office of Personnel Management  
PCR Production Control Report

TABLE II-8. REAL FEDERAL GOVERNMENT NONDEFENSE CONSUMPTION EXPENDITURES AND GROSS INVESTMENT: SOURCES OF ESTIMATES

Line	Category	Method	First Annual Revision: Quarterly and calendar-year estimates	Current quarterly estimates
1	<b>Nondefense Consumption Expenditures and Gross Investment</b>			
2	<b>Consumption expenditures</b>			
3	Gross output of general government			
4	Value added			
5	Compensation of general government employees	Extrapolation.	Employment data from OPM.	Employment data from BLS.
6	Consumption of general government fixed capital	Deflation.	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.
7	Intermediate goods and services purchased			
8	Durable goods	Deflation.	PPIs and IPDs.	PPIs and IPDs.
9	Nondurable goods			
10	Commodity Credit Corporation inventory change	Directly priced and deflation.	ASCS and PRF.	ASCS and PRF.
11	Other nondurable goods	Directly priced and deflation.	DOE prices and quantities and PPIs.	DOE prices and quantities and PPIs.
12	Services			
13	Imputed interest	Extrapolation.	Judgmental.	Judgmental.
14	Research and development	Deflation.	PPIs.	PPIs.
15	Rent, communications, and utilities	Deflation.	CPIs.	CPIs.
16	Travel and transportation	Deflation.	PPIs.	PPIs.
17	Less: Own-account investment	See Table II-7 for sources of estimate.	See Table II-7 for sources of estimate.	See Table II-7 for sources of estimate.
18	Less: Sales to other sectors	Deflation.	PPIs.	PPIs.
19	<b>Gross Investment</b>			
20	Structures			
21	New	Deflation.	IPDs, FHWA composite index, Census Bureau price index for single-family houses under construction, the Turner Construction Cost index, Bureau of Reclamation index, and Handy Whitman index.	IPDs, FHWA composite index, Census Bureau price index for single-family houses under construction, the Turner Construction Cost index, Bureau of Reclamation index, and Handy Whitman index.
22	Net purchases of used structures	Deflation.	New private nonfarm residential structures index, new private farm residential structures index, and new private nonresidential structures index.	New private nonfarm residential structures index, new private farm residential structures index, and new private nonresidential structures index.
23	Equipment and software			
24	Computers	Deflation.	IPDs.	IPDs.
25	Software	Deflation.	PPIs and weighted index for customs software.	PPIs and weighted index for customs software.
26	Aerospace equipment	Deflation.	PPIs.	PPIs.
27	Vehicles	Deflation.	PPIs.	PPIs.
28	Enterprise equipment	Deflation.	PPIs.	PPIs.

ASCS Agricultural Stabilization and Conservation Service  
 BLS Bureau of Labor Statistics  
 CPI Consumer Price Index  
 DOE U.S. Department of Energy  
 FHWA Federal Highway Administration  
 IPD Implicit Price Deflator  
 OPM Office of Personnel Management  
 PPI Producer Price Index

PRF Index of Prices Received by Farmers for Crops

TABLE II-9. SOURCES OF ESTIMATES

Line	Category	Calendar-year 2000 Estimates (billions of dollars)	Procedure used to prepare seasonally- adjusted estimates	First Annual Revision: Quarterly and calendar- year estimates	Current quarterly (and monthly) estimates
1	<b>Total Receipts</b>	2081.9			
2	<b>Current receipts</b>	2053.8	See table II-3.	See table II-3.	See table II-3.
3	<b>Capital transfer receipts</b>	28.1			
4	Estate and gift taxes	28.1	Census Bureau's seasonal adjustment program.	<i>MTS</i> data less IRS interest paid on late taxes.	<i>MTS</i> data.
5	<b>Total Expenditures</b>	1892.6			
6	<b>Current expenditures</b>	1864.4	See table II-4.	See table II-4.	See table II-4.
7	<b>Gross government investment</b>	79.5	See tables II-5 and II-6.	See tables II-5 and II-6.	See tables II-5 and II-6.
8	<b>Capital transfer payments</b>	36.2			
9	Capital grants-in-aid to State and local governments	36.2	See table II-4.	See table II-4.	See table II-4.
10	Capital transfers paid to the rest of the world	0.0	See ITA methodology paper.	See ITA methodology paper.	See ITA methodology paper.
11	Capital grants to business	—	NSA = SA.	<i>MTS</i> data.	NSA = SA.
12	Capital transfers to persons	0.0	Interpolated without indicator.	<i>MTS</i> data.	Extrapolated judgmentally.
13	<b>Net purchases of non-produced assets</b>	-0.3			
14	<b>Less: Consumption of fixed capital</b>	87.2	See tables II-5 and II-6.	See tables II-5 and II-6.	See tables II-5 and II-6.
15	<b>Net lending or net borrowing (-)</b>	189.4	Total receipts less total expenditures.	Total receipts less total expenditures.	Total receipts less total expenditures.

ITA International Transaction Accounts  
 IRS Internal Revenue Service, Department of Treasury  
*MTS* Monthly Treasury Statement

**PART III**

**STATE AND LOCAL GOVERNMENT TRANSACTIONS**

## Acronyms and Abbreviations

AFDC	Aid to Families with Dependent Children
BLS	Bureau of Labor Statistics
CETA	Comprehensive Employment and Training Act
CFC	Consumption of Fixed Capital
CMS	Centers for Medicare and Medicaid Services
COG	Census of Governments
CPI	Consumer Price Index
ECEC	BLS Employer Costs for Employee Compensation
ECI	Employment Cost Index
ETA	Employment and Training Administration
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GDP	Gross Domestic Product
GF	Government Finances
HHS	U.S. Department of Health and Human Services
I-O	Input-Output
LIHEAP	Low Income Heating and Energy Assistance Program
MEPS	Medical Expenditure Panel Survey
MFMR	Medicaid Financial Management Report
MPPI	Medical Premiums Paid on Behalf of Indigents
MSA	Master Settlement Agreement
MTS	Monthly Treasury Statement
NIPA	National Income and Product Account
PPI	Producer Price Index
QS	Census Bureau's Quarterly Summary of State and Local Government Tax Revenue
SCB	<i>Survey of Current Business</i> , BEA's monthly journal
SCHIP	State Children's Health Insurance Program
SEC	Securities and Exchange Commission
SRR	Nelson A. Rockefeller Institute of Government's State Revenue Report
SSA	Social Security Administration
SSI	Supplemental Security Income
STC	Census Bureau's State Government Tax Collections Survey
TANF	Temporary Assistance to Needy Families
TIAA-CREF	Teachers Insurance and Annuity Association - College Retirement Equities Fund
VPIIP	Value of New Construction Put in Place
WIC	Women, Infants, and Children

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## 1. INTRODUCTION

This part describes state and local government transactions. State and local government transactions are presented as (1) state and local government current receipts and expenditures (National Income and Product Accounts (NIPA) table 3.3);<sup>1</sup> (2) state and local government consumption expenditures and gross investment (NIPA table 3.9.x); and (3) state and local government consumption expenditures and general government gross output (NIPA table family 3.10.x). These transactions are presented here as an integrated, line-by-line set of accounts that follow the structure of the NIPA tables. A description of the estimation procedures for calculating nominal and real estimates is provided.

The first section, “Overview of Source Data and Estimating Procedures,” shows how NIPA current receipts, current expenditures, and gross investment estimates can be reconciled to Census estimates using coverage, netting and grossing, and timing adjustments.

The second section provides the sources and methods used to estimate current receipts and capital transfer receipts. Current receipts includes current tax receipts, contributions for government social insurance, income receipts on assets, current transfer receipts, and the current surplus of government enterprises. Capital transfer receipts include estate and gift taxes and capital grants.

The third section presents the sources and methods used to estimate current expenditures, gross investment, and other capital expenditures. Current expenditures includes consumption expenditures, which is comprised of compensation of general government employees, consumption of general government fixed capital, and expenditures on intermediate goods and services purchased; social benefit payments; interest payments; subsidies; and a small adjustment item, wage accruals less disbursements. Gross investment includes investment in structures and in equipment and software. Other capital expenditures include capital transfer payments and net purchases of nonproduced assets.

The final section, “Estimates of Real Consumption Expenditures and Gross Investment,” describes the chain-type quantity and price indexes, which measure changes in real output and prices. It provides details on the methodologies and price indexes used to estimate real consumption expenditures and gross investment, which is included in gross domestic product (GDP).

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<sup>1</sup> Total Government receipts and expenditures—both Federal and state and local government—can also be found in NIPA Table A. Summary National Income and Product Accounts, Account 4. Government Receipts and Expenditures Account.

## 2. OVERVIEW OF SOURCE DATA AND ESTIMATING PROCEDURES

In considering the estimation methodology for state and local governments, it is useful to draw a distinction between annual estimates, which are prepared for annual or benchmark revisions and current quarterly estimates, which are prepared each quarter. Annual estimates incorporate detailed fiscal-year data from the U.S. Census Bureau and many other sources. Annual estimates are interpolated into quarters.<sup>2</sup> In contrast, current quarterly estimates are prepared from a mix of available monthly and quarterly data in a process that might be compared to putting together a puzzle with missing pieces. Many of the larger pieces such as compensation, construction, taxes, Medicaid, and other social benefit payments are based on current source data. Many of the smaller pieces are estimated with a variety of methods including judgmental extrapolation.<sup>3</sup>

### ANNUAL ESTIMATES

Annual NIPA estimates of state and local government current receipts, current expenditures, and gross investment are based primarily on compilations of data on the finances of state and local governments. The major sources of these data are *Government Finances (GF)* [43], which is based on an annual survey, and the *Census of Governments (COG)* [38], which is based on a quinquennial census that is conducted in years ending in 2 and 7. The U.S. Census Bureau prepares both of these sources. Other sources include construction statistics compiled by the Census Bureau (i.e., *Current Construction Reports: Value of New Construction Put in Place (VPIP)*) [40], data from the Medical Expenditures Panel Survey (MEPS) [69], data on social benefit payments from various agencies of the U.S. Department of Health and Human Services (HHS), and employment and wage and salary statistics prepared by the Bureau of Labor Statistics (BLS).

The derivation of the annual estimates of state and local government current receipts, current expenditures, and gross investment in the NIPAs starts with the financial data collected in *GF* or the *COG* [43,38].<sup>4</sup> *GF* comprises several component surveys, which collect data on tax collections, public employee retirement systems, state government finances, local government finances, and public education finances. The financial data collected through each of these surveys contain information on the revenues, expenditures, debt, and assets of the reporting governmental unit [47].

The availability of the *COG/GF* data has varied over the years. Recently, the final data from *COG/GF* have been available with a 2-year lag, and have been incorporated in the third annual revision of the NIPA estimates.<sup>5</sup> Estimates for the second annual revision incorporate both

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<sup>2</sup> For a detailed description of interpolation, see Part I, “Statistical Conventions.”

<sup>3</sup> For a detailed description of extrapolation, see Part I, “Statistical Conventions.”

<sup>4</sup> The *Census of Governments (COG)* is conducted every five years and collects data in three areas: government organization, public employment, and government finances. In years when a census is conducted, the data collected through *GF* form a major component of the data reported in the *COG* [37]. Hereafter, these sources are cited as *COG/GF* when the context is a general description of methodology and as *COG* or *GF* when information specific to only one of the sources is referenced.

<sup>5</sup> For example, FY 2002 data, which in combination with FY 2001 data comprise CY 2001 data, were incorporated in 2004—the third revision of 2001.

preliminary tabulations of unpublished *COG/GF* data and BEA extrapolations of the *COG/GF* components used. Estimates for the first annual revision incorporate BEA extrapolations of the *COG/GF* components used. In all instances, the procedure for using the *COG/GF* data is the same.

Data from the *COG/GF* are reported to the Census Bureau based on the reporting government's fiscal year. As a result, the data included in the *COG/GF* report for a given year are for fiscal years ending at various dates during the 12 months ending June 30 of the year specified.<sup>6</sup> The NIPA estimates of current receipts, current expenditures, and gross investment cover calendar years. Thus, the *COG/GF* data are converted to a calendar-year basis so that they can be used to calculate NIPA estimates. The steps in converting *COG/GF* data from fiscal years to calendar years are outlined below.

- (1) Most state governments and state and local government enterprises have fiscal years ending on June 30. Fiscal-year data for these entities is converted to a calendar-year basis through a two-year average.
- (2) Local governments have fiscal years ending at various dates during the year. The *COG/GF* data for these entities are converted to a calendar-year basis using the following formula based on periodic Census Bureau tabulations by ending month of the fiscal year. The formula can be implemented by denoting the fiscal year running from July 1 of calendar year t-1 to June 30 of calendar year t as FY(t) and the calendar year t as CY(t), then

$$CY(t) = .33FY(t) + .67FY(t+1). \quad (\text{Equation 1})$$

For 1962 and earlier years, the *COG/GF* data on local governments cover fiscal years ending throughout the calendar year and are assumed to be on a calendar-year basis, except for school districts, which are lagged six months.

NIPA table 3.19 shows the relationship of total revenue and total expenditures in the *COG/GF* to NIPA estimates of current receipts, current expenditures, and gross investment. The first section of this table shows Census total revenue followed by the coverage, netting and grossing, and timing and other differences that are used to convert *COG/GF* to NIPA state and local government current receipts. The second section of the table shows Census total expenditures followed by the coverage, netting and grossing, and timing and other differences, which are used to translate *COG/GF* to NIPA state and local government current expenditures. The last section of the table reconciles the difference between Census revenues and Census expenditures with NIPA net state and local government saving. This reconciliation is performed by adding net investment to and subtracting net capital transfers received, net transactions from state and local employee retirement plans, other coverage differences, and timing and other differences from net state and local government saving. In all cases, the Census data are reconciled to NIPA not-seasonally-adjusted data that have been converted into fiscal years.

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<sup>6</sup> Alabama, Michigan, New York, and Texas are the only states whose fiscal years do not begin on July 1<sup>st</sup> and end on June 30<sup>th</sup>.

## DIFFERENCES BETWEEN *COG/GF* AND NIPA RECEIPTS

NIPA table 3.19 shows that NIPA current receipts differ from *COG/GF* source data receipts because of coverage, netting and grossing, and timing and other differences.

### COVERAGE DIFFERENCES

Coverage adjustments arise because the NIPAs have a different definition of state and local government transactions than does *COG/GF*. These differences include transactions associated with state and local government employee retirement plans, which the NIPAs account for in the household, not government, sector; transactions of the unemployment insurance system, which is a state program in *COG/GF*, but it is a Federal program in the NIPAs; transactions for capital transfers received (estate and gift taxes and Federal grants for capital expenditures are treated as capital in the NIPAs, and thus are not included in current receipts); and transactions in financial assets and in the sale of land (including oil bonuses), which is netted against purchases of land and other nonproduced assets in net purchases of nonproduced assets.

*COG/GF* does not include NIPA imputations. NIPA current receipts include imputations for certain dividends and for certain interest received for services provided without cash payments by commercial banks.

An additional coverage adjustment is made for certain grant programs. *COG/GF* intergovernmental revenues are replaced by an estimate of Federal grants derived from Federal budget documents (see Part II, “Grants-in-aid to state and local Governments.”) These NIPA grants-in-aid estimates are consistent with estimates of similar transactions elsewhere in the NIPAs.

A further coverage adjustment is made to account for the current surplus of Indian tribal government enterprises. Indian tribal governments are included in the NIPA government sector; however, they do not fall within the *COG/GF* definition of government.

### NETTING AND GROSSING DIFFERENCES

NIPA table 3.19 includes three netting differences and one grossing difference. For all four, the government surplus or deficit is not affected because equal adjustments are made to current receipts and to current expenditures.

In the NIPAs, expenditures are generally shown net of related sales revenue. For the first two netting entries, sales are subtracted for government enterprises and for general governments, respectively.

For the third netting entry, insurance claims revenue is subtracted from receipts and expenditures because expenditures for insurance services are recorded as premiums plus premium supplements less normal losses (see “From business (net)” for a full explanation).

For the grossing entry, an imputation is made to reflect employer contributions to own social insurance funds. This requires the addition of an expense item and a corresponding receipt item to *COG/GF*.

#### TIMING AND OTHER DIFFERENCES

Timing adjustments are used to account for differences in timing between the NIPAs and *COG/GF*. Historically, NIPA current receipts are recorded on either a payments basis, i.e. when-paid, or on an accrual basis. Corporate profits taxes are adjusted from a cash to an accrual accounting basis.

Timing differences also occur because quarterly interpolation is performed for calendar-year totals in the actual preparation of the NIPA estimates. The four fiscal-year quarters may not sum to the *COG/GF* fiscal year.

Other timing differences result from the out-of-court tobacco settlement payments that are made to states. *COG/GF* records these payments when they are received by the states. In the NIPAs, these payments are included when the payments are deposited in the state's escrow account.

#### DIFFERENCES BETWEEN *COG/GF* AND NIPA CURRENT EXPENDITURES

NIPA table 3.19 shows that NIPA current expenditures differ from *COG/GF* expenditures because of coverage, netting and grossing, and timing and other differences.

#### COVERAGE DIFFERENCES

Coverage adjustments arise because *COG/GF* includes, but the NIPAs exclude, certain transactions associated with state and local government employee retirement plans (which the NIPAs assign to the household sector), benefits paid by unemployment insurance system (a state program in *COG/GF*, but a Federal program in the NIPAs), and purchases of land.

In addition, *COG/GF* expenditure estimates include actual transactions, but not imputations. NIPA current expenditures include imputations that are made for services provided without payment by domestic securities brokers, by commercial banks, and by property and casualty insurance carriers. (See "Current transfer receipts.")

*COG/GF* expenditures do not include the value of consumption of fixed capital (CFC) (a partial measure of services rendered by government-owned capital) in the NIPAs. In addition, the NIPAs exclude investment from current expenditures, while these expenditures are reflected in *COG/GF*. The difference between investment and CFC is shown as net investment under coverage adjustments.

*COG/GF* includes net purchases of nonproduced assets as expenditures. These transactions consist of the purchase of land and oil bonus revenues. The NIPAs classify these transactions as capital expenditures because they are an exchange of existing assets.

The NIPAs also include an estimate of expenditures by Indian tribal governments. Indian tribes do not fall within the *COG/GF* definition of government.

#### NETTING AND GROSSING DIFFERENCES

These differences are discussed under “Differences Between *COG/GF* and NIPA Receipts.”

#### TIMING AND OTHER DIFFERENCES

Timing differences occur because quarterly interpolation is performed for calendar-year totals in the actual preparation of the NIPA estimates. The four fiscal-year quarters may not sum to the *COG/GF* fiscal year.

Other differences occur because *COG/GF* source data are replaced by estimates that are more consistent with estimates of similar transactions elsewhere in the NIPAs; e.g., wages and salaries and certain government social benefit payments to persons, including Medicaid payments.

#### QUARTERLY ESTIMATES

For annual revisions, quarterly source data are available and are used for the following NIPA components: Compensation, construction, certain social benefit payments, and tax receipts. For those series where not seasonally-adjusted source data are available, they are seasonally-adjusted using the Census Bureau’s X-12 ARIMA seasonal adjustment program. For the other components, there are no quarterly source data, and the quarterly estimates are prepared by interpolating annual estimates. When current quarterly estimates are prepared, many components are estimated using judgmental extrapolations.<sup>7</sup> The major exceptions are the wages and salaries component of compensation of state and local government employees, new construction put in place, certain social benefit payments, and selected tax receipts. Generally, for these components, two months of source data are available for the advance estimate, and three months of source data are available for the preliminary and final estimates.<sup>8</sup> Unless otherwise noted, the same methodology is used to prepare the advance, preliminary, and final current quarterly estimates. In those cases where the methodology differs, the procedure used for each type of estimate is explained in the sections below.

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<sup>7</sup> In judgmental extrapolation, analysts consider all available information and may base an estimate on any combination of a moving average, a trend growth rate, a statistical model, newspaper stories, and other published and unpublished information available to them. The trend estimate may also be adjusted for unusual events including, recent legislation, court rulings, or weather-related events.

<sup>8</sup> The advance, preliminary, and final estimates are generally released 30, 60, and 90 days, respectively, after the end of the quarter.

## ESTIMATES OF REAL CONSUMPTION EXPENDITURES AND GROSS INVESTMENT

Estimates of real consumption expenditures and gross investment are prepared for both annual and quarterly NIPA estimates. These estimates are prepared either through deflation using price indexes or through quantity extrapolation.

### 3. DERIVATION OF RECEIPTS

#### CURRENT RECEIPTS

The primary data sources for the estimates of receipts are *COG/GF* [38,43] from the Census Bureau. Additional tax data are provided by the Census Bureau's *Quarterly Summary of State and Local Government Tax Revenue (QS)* [45], the Census Bureau's *State Government Tax Collections Survey (STC)* [48], and the Nelson A. Rockefeller Institute of Government's *State Revenue Report (SRR)* [25]. Other receipts data come from various sources. Several state reports are used to calculate contributions to social insurance funds. The Federal Reserve Board's *Flow of Funds* [9] report is used to estimate dividends.

Before 1952, for state governments, Census's *State Government Finances* [46] and its predecessors provided the basic data for receipts for all years, except 1933–36, when these reports were suspended. Estimates for these years are based on *Tax Yields* [34] from the Tax Policy League, a publication based on data compiled mainly from questionnaires sent to state tax officials.

For local governments, estimates of receipts for 1942 to 1952 are prepared from annual Census Bureau estimates of city and county revenues. Estimates for years before 1942 are prepared by extrapolation, using estimates prepared by the National Industrial Conference Board from fragmentary Census Bureau information [23], reports of tax commissions or similar agencies, correspondence with public officials, information obtained from sample surveys, and a variety of other sources.

Table III-1 presents the current derivation of the estimates for the receipts categories shown in the NIPA tables at the level of detail presented annually. Because the sources of information for states and localities differ, states are distinguished from local governments in table III-1, although this detail is not presented in the NIPA tables for all estimates. The data from the *COG/GF* are available according to the timeline presented in the section "Overview Of Source Data And Estimating Procedures." State taxes are an exception to this rule in that annual source data from the *STC* [48] are available with a one-year lag, rather than with a two-year lag. Unless otherwise noted, the *COG/GF* data are converted to a calendar-year basis using the procedure outlined in the section "Annual Estimates." For years for which Census data are unavailable, BEA prepares calendar-year estimates by extrapolating the *COG/GF* data.

Table III-1 lists the sources of the estimates of the major types of receipts and indicates the procedures by which the quarterly estimates are derived. Quarterly seasonally-adjusted estimates of taxes, contributions for government social insurance, income receipts of assets, current

transfer receipts, and the current surplus of government enterprises are prepared in one of the following methods:

- (1) For those types of taxes that are reported quarterly in either the *QS* [45] or the *SRR* [25] and that demonstrate stable seasonality, the seasonally-adjusted tax collections data are used as an indicator series in the interpolation of the annual data into quarterly estimates. An example of the use of this approach is state personal income taxes, which is interpolated and extrapolated using the seasonally-adjusted collections data from the *SRR* [25] as an indicator series.
- (2) For taxes for which the quarterly observations fail to demonstrate stable seasonality, and for all other receipts for which no quarterly data are available, the quarterly seasonally-adjusted estimates are prepared by interpolating annual estimates into quarters without an indicator and extrapolating the current quarterly estimates judgmentally. Examples of the use of this approach are property taxes, interest receipts, rents and royalties, and many other series for which annual source data are from *COG/GF*.
- (3) For series for which a suitable indicator series exists, the indicator series serves as the pattern of quarterly changes in the series. An example of this approach is state and local government dividend receipts, which is based partly on asset holdings data from the Federal Reserve Board's *Flow of Funds* [9] report and average dividend yield data from Standard & Poor's [26].
- (4) For certain other categories of receipts, *COG/GF* data are supplemented with other sources. Federal grants, for example, are based on seasonally-adjusted grants data from the Department of Treasury [94]. (See Part II, "Grants-in-aid to state and local governments.")

Unless otherwise indicated, the current estimate methodology presented in each section applies to the advance, preliminary, and final estimates. In addition to the annual and quarterly estimates, monthly estimates are prepared for personal current taxes and for personal contributions for social insurance because they are components of the personal income and outlay account, which is prepared on a monthly basis. Although monthly estimates are presented in the NIPA tables, they are not covered in table III-1. However, the methodologies used to prepare these estimates are provided below.

#### CURRENT TAX RECEIPTS

Beginning with 1988, all state and local annual tax estimates are based on *COG/GF* fiscal-year data, except for estimates of taxes on corporate profits, which are based on the *QS* [45]. In order to convert *COG/GF* fiscal-year data to a calendar-year basis, *COG/GF* fiscal-years are interpolated using available seasonally unadjusted quarterly tax collections data and then re-summed on a calendar-year basis. The main source of quarterly collections data is the *QS* [45], which provides detailed tax collections data for states and for a sample of local governments. NIPA estimates of state personal income taxes and state general sales taxes use collections data from the *SRR* [25]. For tax types for which no quarterly collections data are available, *COG/GF*



fiscal-year data are interpolated without an indicator series to produce quarterly estimates that are summed to prepare calendar-year estimates.

During advance estimates, tax estimates are prepared using judgmental extrapolation. *QS* [45] data and final data from the *SRR* [25] are available during the final estimate of each quarter. Preliminary data from the *SRR* [25] on general sales taxes and state income taxes are available for preliminary quarterly estimates.

Between 1962 and 1987, estimates for most taxes are prepared using data from the *QS* [45] and underlying unpublished detail. For these taxes, the annual estimates represent the sum of four quarters of collections data, except for state general sales and state gasoline taxes where timing adjustments are necessary. Estimates for the remaining taxes, all levied by local governments, are not well covered in the *QS* [45] and thus are prepared using *COG/GF* data. Before 1963, estimates of taxes consist of annual data on local taxes (with school district property taxes lagged 6 months) and the *State Government Finances* [46] fiscal-year state tax data converted to a calendar-year basis by simple averaging.

#### *PERSONAL CURRENT TAXES*

Table III-1 lists personal current taxes for the different types of income taxes, as shown in NIPA table 3.4.

#### Income Taxes

Annual estimates of personal income taxes are derived by interpolating *COG/GF* fiscal-year data using quarterly collections data as the indicator series. The interpolated quarters are then summed to calendar years. The quarterly indicator series for state income tax estimates is based on collections data from the *SRR* [25]. The indicator series for local income tax estimates is based on collections data from the *QS* [45]. These collections data are seasonally adjusted and are used as the indicator series for interpolating the NIPA annual estimates into quarterly estimates. Monthly estimates of income taxes are derived by interpolating the quarterly estimates without indicator series. Current quarterly estimates of income taxes are extrapolated using seasonally-adjusted collections data as indicator series. Monthly values are estimated by fitting the quarterly value over the relevant months.

#### Other Taxes

This category is composed of taxes for motor vehicle licenses; personal property; and other personal licenses, such as hunting and fishing licenses. Census Bureau data do not distinguish whether certain tax types are paid by business or by persons. As a result, estimates of personal taxes for motor vehicle licenses, property taxes, and hunting and fishing licenses are estimated by BEA using information from other sources to split the Census data between business and personal taxes.

Census Bureau data contain a category “property tax,” with no distinction made with respect to the tax base—residential real property; other realty; business inventory or equipment; or personal property; such as furniture, personal autos, or pleasure boats. Using data from quinquennial *COG* [38] reports on types of property subject to tax, the NIPAs distinguish between property taxes paid by persons and those paid by business. (The latter include all taxes paid on real property, including residential property, because owner-occupied dwellings are treated as businesses in the NIPAs.) Census Bureau data for motor vehicle license taxes do not distinguish between those paid on business-owned vehicles and those paid on personal vehicles. The NIPA split is based on motor vehicle registrations data from the Federal Highway Administration (FHWA) [92]. Census Bureau data on hunting and fishing licenses are allocated 90 percent to persons and 10 percent to business on the premise that businesses purchase licenses for the purpose of entertaining clients.

Annual estimates for these “other taxes” are produced by first interpolating *COG/GF* fiscal-year data to quarters, using available unadjusted collections data from the *QS* [45] as an indicator series when possible, and then re-summing the quarters on a calendar-year basis. For those series for which no quarterly collections data are available (i.e. most local license taxes), *COG/GF* fiscal-year data are interpolated without indicator series and then re-summed to calculate calendar-year estimates. The quarterly estimates for state motor vehicle licenses and state hunting and fishing licenses are interpolated and extrapolated using seasonally-adjusted collections data from the *QS* [45] as indicator series. Quarterly estimates for property taxes are interpolated without an indicator series. This is because property taxes are shown on a liability basis and liability on property is accrued smoothly throughout the year. Monthly estimates for these series are interpolated without indicator and extrapolated judgmentally.

### *TAXES ON PRODUCTION AND IMPORTS*

Table III-1 lists taxes on production and imports for sales taxes, property taxes, motor vehicle licenses, severance taxes, special assessments, and other taxes, as they are shown in NIPA table 3.5. The “other taxes” category published in NIPA table 3.5 is composed primarily of business license taxes and documentary and stamp taxes.

#### Sales Taxes

State and local sales taxes include taxes imposed on general sales, gasoline, alcoholic beverages, tobacco, public utilities, insurance receipts, and other selective sales. Annual estimates for all state and local government sales taxes are derived through the interpolation of *COG/GF* fiscal-year data. The quarterly collections data that are used in the estimation of state general sales tax are from the *SRR* [25]. All other quarterly collections data are from the *QS* [45]. Quarterly estimates of state taxes on general sales, gasoline, alcoholic beverages, public utilities, insurance receipts, and several other minor categories are interpolated and extrapolated using seasonally-adjusted collections data as indicator series. Quarterly estimates for all other sales taxes are interpolated without an indicator series and extrapolated judgmentally.

For 1963 through 1987, state and local government annual tax estimates are based on the summation of quarterly collections data from the *QS* [45]. During this period, for estimates of state general sales taxes and state gasoline taxes, the quarterly collections data are lagged one month in proportion to retail sales and fuel consumption, respectively, to derive the appropriate NIPA liability measure.

### Property Taxes

Annual NIPA estimates of property taxes are prepared in the same way as for other tax types; i.e., with *COG/GF* fiscal-year data being interpolated into quarters then re-summing the quarters into calendar years. Quarterly tax estimates are prepared by interpolating the annual estimates without indicator series to show the tax on a liability basis (property tax liability is accrued smoothly throughout the year). Current quarterly estimates are extrapolated judgmentally taking into consideration trends in the quarterly collections data. As stated above in the “Income Taxes” section, *COG/GF* does not provide a breakdown of property taxes between those paid by persons and those paid by businesses. (Refer to the section “Other Taxes” for a discussion of how this breakdown is computed.)

### Other taxes on production and imports

Estimates of motor vehicle license taxes, severance taxes, special assessments, and other taxes shown in NIPA table 3.5 are prepared using the methods described in the following paragraphs.

Annual estimates for all of these tax types, except for special assessments, are prepared by interpolating fiscal-year data without indicator series and re-summing quarterly estimates to form calendar years. Annual estimates for special assessments are prepared by using the procedure described in “Annual Estimates.”

Quarterly estimates for state motor vehicle licenses, severance taxes, and various license taxes within “other taxes” are interpolated and extrapolated using seasonally-adjusted collections data from *QS* [45] as indicator series. For all other tax types in this category, quarterly estimates are interpolated and extrapolated without indicator series.

### *TAXES ON CORPORATE INCOME*

The primary source of annual data on state taxes on corporate income is state detail on collections data underlying the Census Bureau’s *QS* [25]. To relate collections to calendar-year liabilities, the quarterly data are lagged on the basis of a 1977–78 BEA study of certain features of state corporate laws—when estimated taxes were due, settlements made, etc. This study, based on the Commerce Clearing House *State Tax Guide* [13], provides information on the relationship between tax collection and tax liability.

Annual data on local taxes on corporate income are primarily from the *QS* [45]. For 1965 and earlier years, the estimates are based on Tax Foundation [33] data.

Quarterly estimates of total state and local taxes on corporate income, seasonally adjusted and unadjusted, are prepared from the annual liability totals by interpolation and extrapolation using NIPA estimates of domestic corporate profits before tax (less Federal Reserve profits) as an indicator series.<sup>9</sup> Taxes on corporate income are not published during the advance estimate.

## CONTRIBUTIONS FOR GOVERNMENT SOCIAL INSURANCE

Table III-1 lists employer contributions and contributions from employees by program as shown in NIPA table 3.6.

### *EMPLOYER CONTRIBUTIONS*

#### Temporary disability insurance

Employer and employee contributions for temporary disability insurance are reported together in *COG/GF*. Estimates for employer contributions are calculated as a percentage of the total contributions for New Jersey and California, which are the only states where employers are required to make contributions. Monthly seasonally-adjusted estimates for employee and employer contributions are interpolated from annual estimates without an indicator series, and the current monthly estimates are extrapolated judgmentally. Quarterly estimates are prepared by summing the monthly estimates.

#### Workers' compensation

Fiscal-year data for employer contributions (there are no employee contributions) to state-administered workers' compensation funds are from *COG/GF*. These data include state government, local government, and private employer contributions. Contributions to temporary disability funds for the State of Colorado are added to *COG/GF* employer contributions to workers' compensation funds to ensure definitional consistency. State government contributions are taken directly from *COG/GF*. Local government contributions are based on state government contributions multiplied by a ratio of local government full-time equivalent employees to state government full-time equivalent employees. State and local combined contributions are subtracted from total contributions to estimate private contributions. Calendar-year estimates are prepared by averaging fiscal-year data. Monthly seasonally-adjusted estimates are interpolated from the annual estimates without indicator. Quarterly estimates are prepared by summing the monthly estimates.

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<sup>9</sup> For further information see, U.S. Department of Commerce, Bureau of Economic Analysis, *Corporate Profits: Profits Before Tax, Profits Tax Liability, and Dividends*, Methodology Paper Series MP-2, September 2002.

For current estimates, a premium per employee is determined separately for state and local government employees and for private employees. These premiums are multiplied by current employment, state and local government and private, respectively, to estimate contributions. Estimates of employment are obtained monthly from *The Employment Situation* [89], which is published by BLS. Quarterly estimates are prepared by summing the monthly estimates.

#### *EMPLOYEE CONTRIBUTIONS*

##### Temporary disability insurance

Data for employee contributions to temporary disability insurance funds are from *COG/GF* for New Jersey and Rhode Island and from the California Employment Development Department [31]. Calendar-year estimates for New Jersey and Rhode Island are prepared by averaging fiscal-year data. These calendar-year estimates are added to the calendar-year data received from the State of California. Monthly seasonally-adjusted estimates for employee and employer contributions are interpolated from the annual estimates without indicator, and the current monthly estimates are extrapolated judgmentally. Quarterly estimates are prepared by summing the monthly estimates.

#### INCOME RECEIPTS ON ASSETS

Income receipts on assets consist of interest receipts, dividends, and rents and royalties that are received by state and local governments.

#### *INTEREST RECEIPTS*

Interest receipts include both monetary interest and imputed interest. Monetary interest received is the monetary return that financial institutions credit to depositors' accounts. Imputed interest received is an imputed income flow that includes the value of the services furnished without payment by commercial banks and by property and casualty insurance carriers to state and local governments for their deposits. It also includes the investment income earned from insurance technical reserves.

#### MONETARY INTEREST RECEIVED

Calendar-year estimates of monetary interest received by state and local governments, including that received by temporary disability insurance and workers' compensation funds, are prepared by adjusting *COG/GF* fiscal-year data to a calendar-year basis using the procedure outlined in "Annual Estimates." The quarterly estimates are interpolated without indicator from the annual

estimates. Current estimates are extrapolated judgmentally. For workers' compensation and temporary disability systems, all investment earnings are assumed to be interest.<sup>10</sup>

#### IMPUTED INTEREST RECEIVED

In the NIPAs, a number of imputations are made to account for transactions that are implicit rather than explicit. Two such imputations are for the value of services received from banks and insurance companies.

It is common for banks to provide "free" services, that is services furnished without payment to depositors in lieu of paying interest on deposits. Of course, these services are not really "free"—the depositor forgoes some of the interest that could have been earned on these funds, which instead are retained by the bank. In order to estimate the total value of services provided by banks, it is necessary to estimate the monetary value of the services furnished without payment and to add this value to the value of services for which payment is made. Balancing this transaction is another transaction in which the value of the services furnished without payment is added to interest. This imputation is the estimate of interest foregone in order to obtain the services furnished without payment.<sup>11</sup>

A similar pair of transactions is used to reflect the fact that in setting their premiums, property and casualty insurance companies take into account the expected income that may be earned from the investment of reserves. Estimates are made of the implicit component of the insurance services, which is referred to as a "premium supplement," and is balanced by an imputed interest flow.<sup>12</sup>

#### DIVIDENDS

Most governments do not routinely invest in equities, because safety and liquidity are most often the primary concern of government financial managers. However, state universities are known to have large equity holdings, and these holdings are reflected in the Federal Reserve Board's *Flow of Funds* [9] accounts. Beginning in 1990, dividends are calculated by multiplying the dividend yield of the Standard & Poor's 500 [26] by the equity investments held by state and local governments as reported in the *Flow of Funds*. Quarterly estimates are interpolated without an indicator from these annual estimates. Advance and preliminary current quarterly estimates are extrapolated judgmentally. Revised *Flow of Funds* data [9] are available for the final estimate.

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<sup>10</sup> The primary data source of interest received for temporary disability insurance is the calendar year report from the State of California. This is the same source used for contributions and benefit payments for temporary disability insurance.

<sup>11</sup> For the methodology used to prepare NIPA estimates of imputed interest received, see Dennis J. Fixler, Marshall B. Reinsdorf, and George M. Smith, "Measuring the Services of Commercial Banks in the NIPAs: Changes in Concepts and Methods," *Survey of Current Business* 83 (September 2003): 33-44.

<sup>12</sup> For a full discussion of these issues, see Brent R. Moulton and Eugene P. Seskin, "Preview of the 2003 Comprehensive Annual Revision of the National Income and Product Accounts: Changes in Definitions and Classifications," *Survey of Current Business* 83 (June 2003): 17-34.

## *RENTS AND ROYALTIES*

Beginning with 1959, calendar-year estimates are prepared by adjusting *COG/GF* fiscal-year data to a calendar-year basis through the procedure described in “Annual Estimates.” The annual estimates are prepared from unpublished data underlying *COG/GF* current charges and miscellaneous general revenue. Oil bonus data are collected from certain states. Appendix III-A provides more details on these data. Quarterly seasonally-adjusted estimates are interpolated without an indicator series from the annual estimates. Current quarterly estimates are extrapolated judgmentally.

## CURRENT TRANSFER RECEIPTS

Table III-1 lists current transfer receipts from business and from persons as shown in NIPA table 3-7.

Beginning with 1959 (the first year estimates are available), all state and local government annual current transfer estimates are based on *COG/GF* fiscal-year data. Both current transfers to persons and to business are derived from *COG/GF* current charges and miscellaneous revenue. The details of the derivation are shown in Appendix III-A.

*COG/GF* does not delineate whether certain fines and donations are paid by business or by persons. Although current transfer estimates are taken primarily from the Census Bureau sources, they are distributed among several NIPA categories on the basis of supplemental information. Using data from various sources, the NIPAs delineate fines and donations paid by persons and those paid by business. Beginning with 1993, 60 percent of fines are determined to be from persons and 40 percent from business. Prior to 1993, fines are allocated 50/50 to persons and business. Beginning with 1959, donations are allocated 90 percent from persons and 10 percent from business.

Because the sources of information for states and localities differ, states are distinguished from local government in preparing the estimates, although this detail is not generally presented in the NIPA tables. Several of the components of current receipts incorporate timing and other adjustments.<sup>13</sup>

## *FEDERAL GRANTS-IN-AID*

See Part II, “Grants-in-aid to state and local governments.”

## *FROM BUSINESS (NET)*

Current transfer receipts from business consist of fines; net insurance settlements; and “other,” a category that includes donations and payments from tobacco companies to states.

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<sup>13</sup> Refer to the “Difference Between *COG/GF* and NIPA Receipts” for a discussion of these adjustments.

Data on fines and donations are included in *COG/GF*. Calendar-year estimates are prepared by adjusting fiscal-year data using the procedure described in “Annual Estimates.” Quarterly seasonally-adjusted estimates are interpolated from the annual estimates without an indicator series, and current estimates are extrapolated judgmentally.

Net insurance settlements consist of actual insurance claims, or losses, less “normal” (expected) insurance claims, or losses.<sup>14</sup> Calendar-year estimates are prepared from A.M. Best insurance data [1,2]. Quarterly seasonally-adjusted estimates are interpolated without an indicator series from the annual estimates. Current quarterly estimates are extrapolated judgmentally.

In 1997, the first states reached out-of-court settlements with the tobacco companies, and during 1998 two additional states reached out-of-court settlements and the Master Settlement Agreement (MSA) was accepted.<sup>15</sup> In implementing this agreement, the National Association of Attorneys General [19] established a general escrow account for the distributions to each state based on formulas established in the agreement. In the NIPAs, these payments are classified as current receipts from business, which include awards to state and local governments from the settlement of civil lawsuits. Expected payments are published in the MSA through 2025. The distributed funds are placed in the appropriate quarters.

#### *FROM PERSONS*

Current transfer receipts from persons consist of a wide variety of payments from individuals to state and local governments. From 1959 forward, calendar-year estimates are prepared by adjusting *COG/GF* fiscal-year data using the procedure described in “Annual Estimates.” These receipts are classified as fines, including penalties imposed for violations of the law and certain court fees; and “other,” including donations from individuals, unclaimed monies, charges for court and recording fees, and license fees. The annual estimates are prepared from unpublished data underlying *COG/GF* current charges and miscellaneous general revenue. Quarterly seasonally-adjusted estimates are interpolations without an indicator series from the annual estimates. Current quarterly estimates are extrapolated judgmentally. Monthly estimates are interpolated without an indicator from the quarterly seasonally-adjusted series and extrapolated judgmentally.

#### CURRENT SURPLUS OF GOVERNMENT ENTERPRISES

Government enterprises are governmental units that sell products to households and businesses and cover most or all of their expenses from revenue. An expedient way to identify government enterprises out of the tens of thousands of state and local governmental units is to classify enterprises by functions. The following functions are deemed to be enterprise functions: Water;

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<sup>14</sup> For a full discussion of these issues, see Moulton, Seskin, 17-34 and Boaline Chen and Dennis J. Fixler, “Measuring the Services of Property-Casualty Insurance in the NIPAs,” *Survey of Current Business* 83 (October 2003): 10-26.

<sup>15</sup> For more information, see Janet H. Kmitch and Bruce E. Baker, “State and Local Government Fiscal Position in 1998,” *Survey of Current Business* 79 (April 1999): 11-17.



sewerage; gas; electricity; toll facilities; liquor stores; air terminals; water terminals; housing and urban renewal; public transit; and a residual category that includes state lotteries, gaming administered by Indian tribal governments, off-track betting, local parking, and miscellaneous commercial activities.

To estimate current operating receipts, BEA supplements revenue data reported in *COG/GF* with an estimate of “other enterprise revenue,” which is drawn from *COG/GF* current charges and miscellaneous general revenue, as shown in table III-1. An estimate of non-operating receipts included in the *COG/GF* data for electric utilities [64] is removed, as described above in the “Differences Between *COG/GF* and NIPA Receipts.” Quarterly seasonally-adjusted estimates of current operating receipts are interpolated from the annual estimates without an indicator series and extrapolated judgmentally.

Estimates of subsidies paid by the Federal government to state and local government housing enterprises are also added, because *COG/GF* records these as intergovernmental receipts. Federal subsidy payments to these enterprises are derived from analyses of the *Monthly Treasury Statement (MTS)* [94].<sup>16</sup>

Estimates of current operating outlays are prepared by function, based on *COG/GF* current operating expenditures. Outlays include employer contributions plus a number of additional items, one of which is an imputation for employer contributions to social insurance funds on behalf of enterprise employees. Also, estimates of the CFC for government enterprises are included as an outlay in the NIPA enterprise surplus calculation. Quarterly seasonally-adjusted estimates of current operating outlays are interpolated from the annual estimates without an indicator series and extrapolated judgmentally.

For specific types of enterprises, additional source data augment *COG/GF*. Data on local toll facilities are from *Highway Statistics* [92], which are prepared by the FHWA. Reports from local governments in New York are used to assemble information on off-track betting. Data from *Gaming and Wagering Business* [11] are used to estimate surpluses generated by lotteries. Annual data on lottery receipts and expenditures, with a one-year lag, and current quarterly data on gross lottery sales supplement the receipts and expenditures data from *COG/GF*.

Indian tribes are local governments in the NIPAs, but they are excluded from the *COG/GF*; therefore, it is necessary to obtain data from an alternate source and include them in the NIPA enterprise estimates. Receipts data on gaming administered by Indian tribal governments are obtained from the National Indian Gaming Commission [22]. Estimates of expenditures by tribal gaming enterprises are estimated using information on typical profit margins for privately run casinos. Therefore, the surplus of Indian gaming enterprises is prepared by subtracting the estimated expenditures of these enterprises from their estimated receipts.

For liquor stores, the surplus is calculated by subtracting expenditures, adjusted to remove inventory change from the current operating outlays, from liquor store receipts. The inventory change is derived from *State Government Finances* [46] and is included in purchases of goods and services.

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<sup>16</sup> See Part II, “Subsidies.”

## CAPITAL TRANSFER RECEIPTS

As mentioned in Part I of this publication, certain government transactions are classified as capital transfers. For state and local governments, capital transfers include estate and gift taxes and Federal government capital grants for highways, transit, air transportation, and water treatment plants. This section provides the methodology for estimating these capital transfers.

### ESTATE AND GIFT TAXES

Beginning with 1988, these taxes are based on *COG/GF* data. Annual estimates for state estate and gift taxes are prepared by interpolating *COG/GF* fiscal-year data using data from the *QS* [45] as an indicator series. The interpolated quarters are then summed to calendar years. The annual estimates for local estate and gift taxes are prepared by interpolating fiscal-year data without indicator and re-summing quarters to calendar years. Quarterly estimates for both state and local estate and gift taxes are prepared by interpolating annual estimates without an indicator series. Current quarterly estimates are extrapolated judgmentally. For 1963 through 1987, annual estimates of state estate and gift taxes are prepared as the sum of four quarters of tax collections data from the *QS* and its underlying unpublished detail. Before 1963, estimates of estate and gift taxes are prepared using annual data on local taxes (with school district property taxes lagged 6 months) and the *State Government Finances* [46] fiscal-year state tax data converted to a calendar-year basis by simple averaging.

### CAPITAL GRANTS

See Part II, “Capital Grants-in-aid to State and Local Governments.”

## 4. DERIVATION OF EXPENDITURES

The primary data source for estimates of state and local government current expenditures and gross investment is *COG/GF* [38,43] from the Census Bureau. Other sources include construction statistics that are prepared by the Census Bureau [40], data on government social benefit payments from HHS [66,67,68,70,73,74,75,77,78,79], and employment and wage and salary statistics prepared by BLS [86,87]. Estimates of current expenditures and gross investment for years before 1952 are based on *State Government Finances* [46] and the available Census Bureau estimates of local expenditures, Census Bureau construction statistics, information on government social benefit payments from HHS, and BLS employment and earnings statistics. For the years before 1942 for which the data are fragmentary, estimates of consumption expenditures and gross investment, other than construction and compensation, are prepared by extrapolation, using state and local government compensation as an indicator series.

Data from the *COG/GF* are available according to the timeline presented in the above section “Overview Of Source Data And Estimating Procedures.” Unless otherwise noted, the *COG/GF* data are converted to a calendar-year basis using the procedure described in “Annual Estimates.”

For years for which Census data are unavailable, BEA extrapolations of the *COG/GF* data are used to prepare calendar-year estimates.

This section provides a detailed analysis of the sources and methods used to estimate consumption expenditures and gross investment, following the outline of the NIPA table family 3.10.x. Table III-2 presents the derivation of the estimates for the consumption expenditures and gross investment categories. Table III-3 presents the derivation of the estimates for the current expenditures categories. Although the sources of information for states and localities differ, states are not distinguished from local governments in table III-2, table III-3, or in the NIPA tables. Periodically BEA prepares and publishes separate estimates of state and local government transactions.<sup>17</sup> Tables III-2 and III-3 list the sources of the estimates and indicate the procedure by which the quarterly estimates of the major types of expenditures are derived. Quarterly (and, where necessary, monthly) seasonally-adjusted estimates of expenditures are prepared using one of four methods: (1) For those expenditure categories for which seasonally-adjusted quarterly data are available, they are used directly; (2) for those expenditure categories for which unadjusted quarterly data are available, quarterly seasonally-adjusted estimates are prepared by using the Census Bureau X-12 ARIMA seasonal adjustment program to adjust the quarterly data directly; (3) for those expenditure categories for which only annual data are available but for which the quarterly pattern of outlays may be assumed to reflect fluctuations in another expenditure component or in some related series, the quarterly seasonally-adjusted estimates are prepared by interpolating the annual estimates using a seasonally-adjusted measure of the expenditure component or related series as an indicator; (4) for those expenditure categories for which annual data are available but no quarterly data nor relevant indicator are available, the quarterly seasonally-adjusted estimates are prepared by interpolating the annual estimates into quarterly estimates without an indicator. Current quarterly estimates are prepared under each of these methods by extrapolation using the indicator series (Methods (1), (2), and (3)), or by extrapolating judgmentally. Unless otherwise indicated, the advance, preliminary, and final current estimates of each component of consumption expenditures and gross investment are prepared using the same methodology. In those cases where the methodology differs, the procedure is explained in the sections detailing each estimate contained below.

Quarterly unadjusted estimates are prepared using one of three methods: (1) Where unadjusted quarterly data are available, they are used directly; (2) annual-only data are interpolated using a related quarterly unadjusted series as an indicator; (3) where a quarterly indicator series is unavailable, the quarterly unadjusted estimates are the same as the quarterly seasonally-adjusted estimates described above.

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<sup>17</sup> For the most recent presentation of the data, see Bruce E. Baker, "Receipts and Expenditures of State Governments and of Local Governments, 1959-2001", *Survey of Current Business* 83 (June 2003): 36-53. A new presentation of these estimates is anticipated in October 2005.

## CONSUMPTION EXPENDITURES

State and local government consumption expenditures is measured as compensation; CFC; intermediate goods and services purchased, less sales to other sectors; and own-account investment.<sup>18</sup>

Additionally, government expenditures in *COG/GF* are classified by function, or purpose, of the expenditure. (The functions are listed in appendix III-B.) Therefore, an indirect procedure is used to estimate consumption expenditures, by commodity, from the annual *COG/GF* functional data on current operations, capital outlay, and general government sales. The procedure uses information, by function, on the commodity composition of state and local government purchases from BEA's input-output (I-O) tables [49].

Table III-2 shows the sources used for the estimates of consumption expenditures.

## GROSS OUTPUT OF GENERAL GOVERNMENT

### *VALUE ADDED*

#### Compensation of general government employees

Compensation is estimated as the sum of two components: Wages and salaries and supplements to wages and salaries. The source data for compensation cover all state and local government employees, including employees of government enterprises. Enterprise current account expenditures, including compensation, are not included in government consumption expenditures.<sup>19</sup> Wages and salaries are distributed among the functions of government using data on wages and salaries from the Census Bureau's report, *Public Employment* [44]. Certain functions are deemed to be "enterprise functions," and compensation for these functions is used in calculating the enterprise current account expenditures. Other functions are considered to be general government functions.

Estimates of compensation for general government own-account investment are subtracted from compensation within consumption expenditures, because own-account investment is included in estimates of gross investment in new structures and software.

## WAGES AND SALARIES

Wages and salaries include cash wages and salaries paid to government employees plus compensation paid to prison inmates, fees paid to jurors and witnesses, and marriage fees paid to justices of the peace. Calendar-year estimates are primarily from BLS tabulations of employment and wages reported by employers covered by state unemployment insurance programs [86,87] and of estimates of wages and salaries of state and local employees not covered by

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<sup>18</sup> Own-account investment is output of the sector deemed to be investment, not compensation.

<sup>19</sup> See "Current Surplus of Government Enterprises" for more details.

unemployment insurance, including students who work for public educational institutions. Annual estimates of marriage fees, jury and witness fees, and compensation of prison inmates are based on state and local government budgets and *COG/GF* data on current judicial expenditures. During comprehensive revisions, annual estimates of jury and witness fees are based on state budget data for jury and witness fees. Annual estimates of compensation of prison inmates are based on annual data on average compensation and number of state prison inmates [16,81].

Beginning with 1990, Indian tribal governments and tribal government-owned enterprises, including casinos, are included in BLS tabulations of employment and wages reported by employers covered by state unemployment insurance programs for local governments [86,87].

Quarterly seasonally-adjusted estimates of wages and salaries are prepared by summing the BLS monthly series. For monthly series, BEA develops a monthly indicator series using changes in BLS monthly seasonally-adjusted employment estimates [89] and changes in the BLS employment cost index (ECI) [88]. Monthly wages and salaries are then prepared by interpolating annual estimates using the indicator series.

Estimates of the quarterly change in the ECI are judgmentally extrapolated for the next quarter during the current quarter preliminary estimate. ECI data are received from BLS during the advance estimate for the current quarter and are fully incorporated during the preliminary estimate.

#### SUPPLEMENTS TO WAGES AND SALARIES

Supplements to wages and salaries include employer contributions for employee pension funds, insurance funds, and government social insurance. Employer contributions for state and local employee pension and insurance funds consist of the following: State and local employee pension funds, group health insurance, group life insurance, private pension funds for state and local government education workers (TIAA/CREF), and private workers' compensation insurance funds for state and local employees. Employer contributions for social insurance consist of the following: Old-age, survivors, disability, and hospital insurance, unemployment insurance, and state-administered workers compensation insurance.

Monthly estimates of employer contributions for state and local employee pension and insurance funds are prepared because they are components of, and are published with, the monthly personal income and outlay account. As a general rule, monthly estimates for these components of compensation are interpolated without indicator from annual estimates, and quarterly estimates are prepared by summing monthly estimates. Current quarterly and monthly estimates are prepared using judgmental extrapolation. Exceptions to this rule are explained in the sections below.

For employer contributions to state and local employee pension and insurance funds, the annual estimates are based on various sources. Employer contributions to state and local government employee retirement funds [42] are based on the Census Bureau's Annual Retirement System Survey; estimates of group health insurance are based on the MEPS for group health [69]; and

estimates of private pension funds for certain state and local education workers are based on unpublished data from TIAA/CREF [35]. Employer contributions to group life insurance and workers' compensation insurance are based on annual reports of private insurance carriers [3,18].

Certain supplements, chiefly pension fund contributions that are dedicated to education employees, are assigned to these employees. The remainder is allocated between employees of government enterprises and general government in proportion to wages and salaries for the two groups. Within general government, supplements are further allocated between education and noneducation employees in proportion to wages and salaries for these two groups.

Quarterly seasonally-adjusted estimates of employer contributions to group health insurance are prepared by interpolating annual estimates using total state and local wages and salaries as an indicator series. Quarterly estimates are extrapolated using BLS Employer Costs for Employee Compensation (ECEC) [85] and total state and local wages and salaries [86]. Monthly estimates are prepared by interpolating the quarterly seasonally-adjusted series. Monthly estimates are extrapolated using the product of ECEC and wages and salaries.

Current monthly estimates of other employer contributions for employee pension and insurance funds, except for employer contributions to group health insurance and state and local employee retirement funds, are extrapolated using changes in BLS employment data.

The methods used to prepare annual and quarterly estimates of employer contributions for social insurance are described above in the section "Contributions for Government Social Insurance" (See also Part II, "Contributions for Government Social Insurance."). A description of the methodology used to prepare annual and quarterly estimates of state-administered workers' compensation funds is discussed in the above section, "Contributions for Government Social Insurance."

### Consumption of general government fixed capital

Estimates of current-dollar general government CFC are derived by multiplying the constant-dollar estimates by the appropriate price indexes. The CFC current-dollar estimates are prepared using this procedure for over 50 types of structures and equipment, (see "Consumption of general government fixed capital" for a discussion of constant-dollar CFC).

### *INTERMEDIATE GOODS AND SERVICES PURCHASED*

State and local government intermediate goods and services include all the durable goods, nondurable goods, and services consumed in order to produce state and local government gross output. NIPA Table 3.10.5 shows the derivation of state and local government consumption expenditures starting from "gross output of general government."<sup>20</sup>

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<sup>20</sup> See the stub of NIPA Table 3.10.5.

BEA prepares annual estimates of current operating expenditures separately for states and for localities, for each of the functions shown Appendix III-B, using *COG/GF* data. Estimates of intermediate goods and services purchased are prepared by subtracting items that are not included in the NIPA definition of intermediate goods and services from *COG/GF* data on current operating expenditures by function. The residual amount is then distributed among durable goods, nondurable goods, and services.

The first item that is subtracted is wages and salaries (except for 1978–81, when the *COG/GF* data classified them separately). The second item that is subtracted is “other current operating expenditures,” which are not included in NIPA purchases of intermediate goods and services. These purchases include pay-related outlays that are included in NIPA compensation (as supplements), payments that are included in NIPA transfer payments, enterprise expenditures for operations, and subsidies paid to railroads. The third item that is subtracted is software purchases. Software purchases are removed because these purchases are treated as investment rather than consumption expenditures in the NIPAs. The methods used to prepare estimates of state and local software investment are discussed below in the section on “Gross Investment.” Finally, estimates of own-account investment must be subtracted because they are classified in the NIPAs as investment.

Once these items are subtracted from the *COG/GF* current operating expenditures data by function, the residual is distributed among durable goods, nondurable goods, and other services. First, data on libraries from the Association of American Publishers [5] and from Bowker’s [10] are used to estimate purchases of books and audiovisual materials by four functions—elementary and secondary education, higher education, public libraries, and general control. For each of these functions, the estimates of books and audiovisual equipment are classified as gross purchases of durable goods and are subtracted from the remainder of other current operating expenditures.

The remainder of other expenditures on current operations is distributed, by function, among gross purchases of durable goods, nondurable goods, and services using benchmark information on the commodity composition of purchases, also classified by function, from BEA’s benchmark I-O tables [49]. Because the I-O table is only available about every five years, the fixed-weighted constant-dollar commodity distribution is wedged between I-O years and then multiplied by the appropriate price index to obtain current-dollar commodity distribution weights, which are applied to the Census Bureau estimates that are discussed above.

Quarterly seasonally-adjusted estimates for intermediate goods and services purchased are prepared by interpolating without an indicator series annual estimates of each of the major categories of intermediate goods and services. Current quarterly estimates are prepared by extrapolating the constant-dollar estimates judgmentally and then converting them to current dollars by multiplying the constant-dollar estimates by the appropriate price indexes.<sup>21</sup>

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<sup>21</sup> For more information, refer to “Estimates of Real Consumption Expenditures and Gross Investment.”

## Services

### IMPUTED BANK SERVICES

Government consumption expenditures include the value of an imputation for bank services that are supplied without payment. For the methodology used to prepare NIPA estimates of services furnished without payment by financial intermediaries, see the section above, “Imputed Interest Received.”

### SERVICES FURNISHED WITHOUT PAYMENT BY DOMESTIC SECURITY BROKERS

Government consumption expenditures include an imputation for the estimated value of services rendered without payment to state and local governments by domestic security brokers. This series is an implicit charge equal to the “bid-ask” price spread on the transactions carried out by securities dealers on behalf of governments. Dealers who make markets in securities do not charge commissions; instead, as income they retain the revenue resulting from acquiring securities at a price lower than the price at which the securities subsequently are sold to their customers. Omitting this imputation would reduce business income because the trading gains would be classified as capital gains income, which is omitted in the NIPAs. For Federal Government and agency securities owned by state and local governments, commissions are estimated using the dollar volume of trading as reported by the Federal Reserve Bank of New York, bid and ask prices as published in the *Wall Street Journal*, and sectoral allocation based on the Federal Reserve Board’s *Flow of Funds* [9] data. For equities, commissions are estimated based primarily on cents per share spread and volume data from the National Association of Securities Dealers and on total specialist sales and average spreads data from the New York Stock Exchange.

### OWN-ACCOUNT INVESTMENT

Own-account investment is investment in structures and software produced by state and local government employees. Estimates of own-account investment are included in general government gross output, but they are subtracted from gross output to derive estimates of general government consumption expenditures. Own-account investment is measured as the sum of compensation of employees engaged in construction and in the development of new software, along with the overhead costs for the related goods and services required to produce the structures and software. Estimates of state and local government own-account investment are included in state and local government gross investment in structures and in equipment and software.

Annual estimates of general government own-account compensation are prepared using data from BEA’s I-O tables, which include estimates of this investment by type of expenditure, by function. Ratios of own-account construction compensation to the value of new construction, by function, are extrapolated and interpolated without an indicator series between I-O years. Annual estimates of own-account construction compensation are the product of these ratios and annual



data on new construction put in place, by function. The own-account overhead expenditures for construction are set equal to the amount of the own-account compensation value and then distributed to specific commodities within intermediate goods and services based on detailed information from BEA's I-O tables [49]. Quarterly seasonally-adjusted estimates of education and all other own-account construction investment are prepared by interpolating the seasonal estimates, using seasonally-adjusted Census Bureau education and all other construction series as indicators. Current quarterly estimates are extrapolated using the same indicator.

Similar to own-account compensation for construction, own-account investment for software development is based on detailed I-O information. Annual estimates of own-account software investment are based on information from BEA's I-O tables and are extrapolated between I-O years using changes in estimates of private own-account investment. Quarterly estimates of own-account software investment are extrapolated using private own-account investment estimates. Current quarterly estimates are extrapolated using the same indicator.

#### SALES TO OTHER SECTORS

State and local government sales to other sectors include tuition and related educational charges, health and hospital charges, and other sales of goods and services.

Estimates of state and local government sales to other sectors are based on *COG/GF* data. Annual estimates are prepared from unpublished data underlying *COG/GF* current charges and miscellaneous general revenue. Appendix III-A provides more details on these data. *COG/GF* fiscal-year data are converted into calendar-year data using the procedure that is described in "Annual Estimates."

Once annual estimates are derived by function from the Census data, total sales estimates are disaggregated into specific commodities based on the commodity distribution that is provided in the detailed I-O table (which has the breakdown by function).

Quarterly seasonally-adjusted estimates are prepared by interpolating annual estimates without an indicator series. Current quarterly estimates are derived by extrapolating the constant-dollar estimates judgmentally and converting them to current dollars by multiplying the constant-dollar estimates by the appropriate price indexes.

#### GROSS INVESTMENT

Gross investment comprises investment in structures, equipment, and software. The following sections describe the sources and methods used to prepare these estimates and are consistent with the outlines of NIPA table family 3.9.x.<sup>22</sup>

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<sup>22</sup> See the stub of NIPA table family 3.9.x.

## STRUCTURES

Gross investment in structures consists of new construction put in place and net purchases of existing structures. Compensation paid to state and local general government employees engaged in own-account investment is included in the *VPIP* [40], and is subtracted from general government compensation to avoid double-counting.

### *NEW CONSTRUCTION*

For 1975 and later years, the Census Bureau data from *VPIP* [40] are used to estimate the value of new structures. Since 1975, the Census Bureau has conducted a direct survey of construction projects in which information is gathered about the value of construction completed each month on a sample of projects. This survey is benchmarked to *COG/GF* for six categories of construction: Housing, education, highway, electric, sewer and water supply, and all other construction.

Beginning with July 2003, the Census Bureau's Manufacturing and Construction Division began publishing *VPIP* [40] data using a new classification system. Census provided BEA with a bridge that permits comparisons between the old and new types of construction for 1997. As a result of the new classification system, the categories used to benchmark the *VPIP* data to *COG/GF* are different beginning with 1997. The new *VPIP* structures types are benchmarked to Census *COG/GF* in the following categories: Residential, educational, highway and street, power, sewage and waste disposal and water, and all other construction. BEA uses construction by function from *COG/GF* and unpublished detail from the *VPIP* survey to estimate additional detail used in the NIPAs. For years prior to 1975, estimates of new construction put in place are obtained from the Census Bureau, which collects monthly data on construction expenditures. These data are lagged one month to approximate the put in place timing. In one case, BEA departs from the Census Bureau construction data because of evident under-reporting. For the years 1972–75, as funds from the Federal Clean Water Act became available, BEA modifies the Census Bureau sewer construction data because the sample design for the *VPIP* survey was not totally successful in capturing a representative component of the new special districts created to build and operate new systems.

During annual revisions, BEA extrapolates the most recent, complete construction survey data—both the *VPIP* data and unpublished, preliminary tabulations of *COG/GF* data. Quarterly seasonally adjusted and unadjusted estimates are prepared by interpolating the annual estimates using the *VPIP* data as the indicator series. Advance quarterly estimates for new structures are extrapolations using two months of *VPIP* data as the indicator series. Typically, two months of data are averaged to obtain an estimate for the third month. Three months of *VPIP* data are available for the preliminary and final estimates.

## *NET PURCHASES OF EXISTING STRUCTURES*

Estimates of net purchases of existing structures are based on data from *COG/GF*. The Census Bureau reports data, by function, on purchases of equipment, land, and existing structures. Sales of land and existing structures are also reported for both states and localities combined, not separately nor by function.<sup>23</sup> Because land transactions are classified as net purchases of nonproduced assets, a separate category from NIPA government gross investment, BEA prepares estimates of the value of purchases of existing structures, excluding land. Ratios, calculated by function from BEA's I-O tables [49], are used to separate purchases of structures from those of land. Sales of structures and land are separated using the overall ratio of purchases of structures to those of land. State sales of property are from *State Government Finances* [46], and local sales are from a BEA analysis of *COG/GF* miscellaneous general revenues. Sales are netted against purchases to derive net purchases of existing structures. Quarterly seasonally-adjusted estimates are prepared by interpolating annual estimates without an indicator series, and current quarterly estimates are judgmental extrapolations.

## EQUIPMENT AND SOFTWARE

NIPA estimates of equipment investment are based on *COG/GF* data from the Census Bureau. For state governments from 1979 forward, total equipment purchases are reported separately from other purchases of capital, including land and existing structures. For all local government data and state data prior to 1979, the Census Bureau reports combined purchases of equipment, land, and existing structures and sales of property; i.e., land and existing structures, by function. For periods when Census reports the purchases on a combined basis, BEA estimates equipment purchases using pre-1978 information on the relationships between functions and equipment, land, and existing structures purchases. Once estimates of total equipment purchases are prepared, the estimates are distributed by function into detailed equipment estimates using information on the commodity composition of purchases, also classified by function, from BEA's benchmark I-O tables. In non-benchmark years, annual estimates of computer purchases (based on the I-O table) are interpolations and extrapolations using Census-based computer shipments data as an indicator series. The following sections describe the methods used to prepare quarterly estimates of computers.

## *EQUIPMENT EXCLUDING COMPUTERS*

Quarterly seasonally-adjusted estimates of equipment excluding computers are interpolations of annual totals of each of the major categories without an indicator series. The current quarterly estimates of all non-computer equipment series are prepared by extrapolating constant-dollar estimates judgmentally and then converting them to current dollar estimates by multiplying the constant-dollar estimates by the appropriate price indexes.

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<sup>23</sup> For years after 1978, the Census Bureau separates purchases of equipment from those of land and existing structures only for states. BEA estimates equipment purchases of local governments, using pre-1978 information on the relationships, by function, among equipment, land, and existing structures.

### *COMPUTER HARDWARE*

Quarterly estimates of computer hardware are prepared by extrapolation, using Census Bureau computer shipments as an indicator series.

### *COMPUTER SOFTWARE*

Purchases of software are classified as investment in the NIPAs. As discussed in the section on intermediate goods and services purchased, estimates of software are removed from *COG/GF*-based intermediate goods purchased so that they can then be added to NIPA investment along with equipment. The three categories of software investment that are identified in the NIPAs are purchases of prepackaged software, custom software, and own-account software investment. In benchmark years, these estimates are based on detailed expenditure information, by function, from BEA's I-O tables.<sup>24</sup> Non-benchmark year's annual and quarterly estimates are interpolations and extrapolations using the indicators described below.

#### Pre-packaged software

Estimates of prepackaged software are extrapolations and interpolations using as an indicator software company receipts from Securities and Exchange Commission (SEC) reports and data on monthly software sales from trade sources. Current quarterly estimates are extrapolations using the same indicator series.

#### Custom software

Annual and quarterly estimates of custom software are interpolations and extrapolations using as an indicator company receipts and monthly retail sales data. Current quarterly estimates are extrapolations using the same indicator series.

#### Own-account software

Annual and quarterly estimates of own-account software investment are interpolations and extrapolations using as an indicator series a percent change in a 3-quarter moving average trend of private fixed investment in computers and peripheral equipment. Current quarterly estimates are extrapolations using the same indicator series.

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<sup>24</sup> For more on BEA's sources and methods of estimating software, see Bruce Grimm and Robert Parker, "Recognition of Business and Government Expenditures for Software Investment: Methodology and Quantitative Impacts, 1959-1998," [www.bea.gov/bea/mp.htm](http://www.bea.gov/bea/mp.htm) (May 2000).

## OTHER CURRENT EXPENDITURES

### CURRENT TRANSFER PAYMENTS

#### *GOVERNMENT SOCIAL BENEFIT PAYMENTS TO PERSONS*

State and local government social benefit payments to persons consist of benefits from social insurance funds, public assistance, and payments for education, employment and training, and other assistance. Estimates are prepared monthly, as well as quarterly and annually, because they are a component of the monthly personal income and outlay account. As a general rule, monthly estimates are interpolated without indicator from annual estimates, and quarterly estimates are prepared by summing monthly estimates. Further, monthly and quarterly current estimates are prepared through judgmental extrapolation. Exceptions to this rule include estimates for Medicaid, medical premiums paid on behalf of indigents (MPPI), Federally administered state supplementation, disaster assistance, and Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). The methodologies used to derive these estimates are provided in table III-3.

#### Benefits from social insurance funds

Benefits from social insurance funds consist of temporary disability insurance benefits and workers' compensation benefits. Annual estimates are prepared by the methods discussed below.

#### TEMPORARY DISABILITY INSURANCE

Estimates of benefits from temporary disability insurance funds are prepared using data from *COG/GF* for New Jersey and Rhode Island and from the California Employment Development Department [31]. Calendar-year estimates for New Jersey and Rhode Island are prepared by averaging fiscal-year data. These calendar-year estimates are added to calendar-year data received from the State of California.

#### WORKERS' COMPENSATION

Fiscal-year data for benefits from state-administered workers' compensation funds are available from *COG/GF*. Benefits from temporary disability funds for the State of Colorado, which are compiled in *COG/GF*, are added to workers' compensation benefits. Calendar-year estimates are prepared by averaging fiscal-year data.

## Public assistance

Public assistance consists of social benefit payments for medical care, family assistance, supplemental security income (SSI), general assistance, energy assistance, WIC, foster care, adoption assistance, and payments to nonprofit welfare institutions.

## MEDICAL CARE

Medical care is comprised entirely of medical vendor payments, which are government payments on behalf of indigents for medical services, drugs, and other medical supplies. Most of these payments are for the federally assisted Medicaid program and for the State Children's Health Insurance Program (SCHIP). The remaining payments are for state general medical assistance.

Beginning with 1991, quarterly Medicaid data are from the *Medicaid Financial Management Report (MFMR)* from the Centers for Medicare and Medicaid Services (CMS) (formerly the Health Care Financing Administration). Quarterly values are prepared by seasonally adjusting quarterly data from the *MFMR*. Monthly estimates are prepared by interpolating the seasonally-adjusted quarterly estimates without an indicator series.

Current quarterly estimates are prepared by judgmental extrapolation, taking into account such items as "Federal Grants to States for Medicaid" from the *MTS* [94] and the average annual national Federal Medical Assistance Percentage, weighted by state Medicaid expenditures. Monthly estimates are prepared by fitting the quarterly value over the relevant months.

The SCHIP was first implemented by Congress in late 1998. Since then, data on expenditures from separate state programs and from Medicaid extension programs are available from CMS. The estimates for separate state programs are added to general medical assistance expenditures to prepare estimates of "other medical vendor payments." Estimates for Medicaid extension programs are added to "Medicaid" to ensure definitional consistency.

Monthly estimates for MPPI are from CMS [75]. Quarterly and annual estimates are prepared by summing the monthly estimates. These estimates are subtracted from Medicaid expenditures to calculate "Medicaid, excluding MPPI."

Since 1988, the annual value of "general medical assistance" is obtained from the states by CMS [74]. Prior to 1983, monthly data provided by HHS for Medicaid included payments for "general medical assistance." For 1983 through 1987, the estimates are interpolations between the pre-1983 and post-1987 data sources.

From 1983 to 1990, calendar-year estimates of medical vendor payments are based on quarterly data from the CMS [72]; data for 1983 and earlier are available monthly from CMS and predecessor organizations. The monthly and quarterly seasonally-adjusted estimates for "Medicaid, excluding MPPI" and "general medical assistance," are interpolated and extrapolated without indicator for 1984 to 1990. Before 1984, when these series exhibited measurable

seasonality, the monthly data are seasonally adjusted and are converted into quarterly and annual estimates by summing the monthly estimates.

#### FAMILY ASSISTANCE

Family assistance consists of payments for Aid to Families with Dependent Children (AFDC), emergency assistance, and, beginning with 1996, assistance programs operating under the Personal Responsibility and Work Opportunity Reconciliation Act of 1996, known as Temporary Assistance to Needy Families (TANF).

For 1997 and later, annual estimates of TANF are prepared using Federal fiscal-year financial data from the Administration for Children and Families [66]. TANF data are presented on a Federal fiscal-year basis. Calendar-year totals are derived by adding 75 percent of the total expenditures from fiscal year(t) to 25 percent of the total expenditures for fiscal year(t+1). For 1996 and earlier, monthly data for AFDC and for emergency assistance are from the Office of Family Assistance, [71]; the AFDC data are supplemented by information from the Administration for Children, Youth, and Families [65]. The monthly data are seasonally adjusted. Annual and quarterly estimates are prepared by summing the monthly estimates.

#### SUPPLEMENTAL SECURITY INCOME

In January 1974, the Federal SSI program replaced aid to the blind, old age assistance, and aid to the permanently and totally disabled. Certain state governments chose to continue their own SSI program in one of two ways. Certain states make direct payments to individuals, and some deposit the payments with the Federal Government, which then makes the supplemental payments to the individuals. Monthly data for Federally administered state supplementation are from the Social Security Administration (SSA) [79]. The monthly data reflect no identifiable seasonality. Annual and quarterly estimates are prepared by summing the monthly estimates. Data for payments made directly from the states to individuals are available annually from the SSA.

#### GENERAL ASSISTANCE

Since 1981, annual estimates for "general assistance" are from *COG/GF* data for "other cash assistance programs" and "vendor payments for other purposes," excluding social benefit payments to persons for energy assistance. In addition, since 1988, general assistance includes disaster assistance payments to individuals.

Monthly disaster assistance data are obtained from the Federal Emergency Management Agency (FEMA) [80]. Monthly seasonally-adjusted estimates of general assistance, excluding disaster payments, are interpolated from annual estimates and extrapolated judgmentally. Annual and quarterly estimates are prepared by summing the monthly estimates. For periods prior to 1981, monthly general assistance data are available from HHS.

## ENERGY ASSISTANCE

Social benefit payments for energy assistance to low-income individuals are recorded for 1977 and later. Energy assistance includes both cash payments to low-income individuals and vendor payments to suppliers. The estimates for energy assistance include benefits from the Federal Low Income Heating and Energy Assistance Program (LIHEAP) and benefits from separate state programs.

Annual estimates of Federal LIHEAP benefits are derived from Federal grants-in-aid, excluding administrative costs. Beginning with 1988, annual social benefits from separate state programs are based on the percentage change in the annual Federal LIHEAP benefit estimate. Information on independent state programs is from a study by the Maryland Energy Assistance Program [70].

## OTHER PUBLIC ASSISTANCE

The remainder of public assistance consists of expenditures for WIC, foster care, adoption assistance, and payments to nonprofit welfare institutions.

For current estimates, monthly WIC food expenditure data are available from the WIC program *State Agency Participation and Expenditure Report* [36], provided by Food and Nutrition Services of the United States Department of Agriculture. Annual estimates are prepared by summing monthly data. During annual and comprehensive revisions, monthly estimates are interpolated from annual estimates without indicator.

Foster care payments are estimated using expenditures by the Federal Government under Section IV-E of Title XX of the Social Security Act [67], state payments under Section IV-E that are derived using average state matching rates, and state-only payments that are based on a 1983 study by the American Public Welfare Association [4].

Estimates of adoption assistance are prepared using expenditures by the Federal Government under Section IV-E of Title XX of the Social Security Act, state payments under Section IV-E that are derived using the average state matching rates, and state-only payments that are based on 1994 study by the American Public Welfare Association [68]. Calendar-year estimates for foster care and adoption assistance programs are prepared using Federal data through the procedure described in the "Family Assistance."

Annual data for welfare payments to nonprofit organizations come from *COG/GF*. Calendar-year estimates are prepared by averaging fiscal years.

## Education

Education social benefit payments are identified in *COG/GF* as "assistance and subsidies." These payments include scholarships, stipends, fellowships, and similar payments to individuals, plus



state support for nonprofit educational institutions. Calendar-year estimates are prepared by averaging fiscal-year data.

### Employment and training

Beginning with 1982, employment and training consists of payments to nonprofit institutions for training programs under the Job Training Partnership Act of 1982. Annual data are from NIPA Federal grants-in-aid to state and local governments (see Part II, “Grants-in-aid to state and local Governments”) and from the Office of Management and Budget’s analysis of the Department of Labor’s Employment and Training Administration (ETA).

For years prior to 1982, employment and training includes payments under the Comprehensive Employment and Training Act (CETA) and its predecessor, the Public Employment Program, which provided funds from 1971 until 1982 for employment in state and local governments, for employment in nonprofit organizations, and for job training programs operated by nonprofit institutions. Expenditures for employment in state and local governments are classified as wages, a component of consumption expenditures. The remaining expenditures are included in social benefit payments to persons. For employment in nonprofit institutions, estimates are based on occasional informal estimates of CETA employment in nonprofit institutions made by the ETA and on staff studies performed by the Urban Institute [97]. ETA estimates of average pay per CETA participant are multiplied by monthly estimates of nonprofit employment to derive a value for these social benefit payments. For job training programs operated by nonprofit institutions, the value of training grants is available quarterly from the ETA [91].

### Other

“Other” social benefits consist of payments for crime victims’ compensation, Alaska social benefit programs, veterans benefits, and corrections and health.

Social benefits that compensate victims of crimes are paid in all 50 states and the District of Columbia. Beginning with 1986, annual data are available with a 1-year lag from the Department of Justice, Office for Victims of Crime [82]. Estimates for 1979-85 are based on a compilation of data on state benefits by the New York Crime Victims Board [24]. Between 1968 and 1978, data are based on BEA’s informal collection of information from individual states.

Social benefit payments from the State of Alaska include annual payments from the Alaska Permanent Fund to residents and bonus payments given to residents 65 years of age or older, who meet specific state requirements. Beginning with 1982, annual payments are made from the earnings of a fund that receives payments from companies extracting oil from the North Slope oil fields. Annual data are available from the Alaska Department of Revenue [27,29]. Monthly unadjusted estimates are calculated by placing the majority of the annual estimate in the fourth quarter, with the rest in progressively smaller increments into the first, second, and third quarters. The method for preparing the monthly unadjusted estimates is based on historical monthly data from the Alaska Department of Revenue.

From 1985 to 2003, annual data for the Alaska longevity bonus program, obtained from the State of Alaska, are included as government social benefit payments to persons. The Commonwealth of Massachusetts provides cash benefits to veterans based solely on their veteran status. Fiscal-year data are available from the Massachusetts Department of Veterans Services. Calendar-year estimates are prepared by averaging fiscal-year data.

Social benefit payments from state and local governments for health are comprised of assistance payments to non-publicly funded hospitals. Social benefit payments for corrections represent payments provided to former incarcerated persons when they are released for the purpose of travel, clothing, and a small amount of spending money. Calendar-year estimates of social benefit payments for corrections and health are prepared from *COG/GF* by averaging fiscal-year data.

#### INTEREST PAYMENTS

Interest payments include actual payments and imputed payments.

##### *ACTUAL INTEREST PAID*

Calendar-year estimates of interest paid by state and local governments are prepared by adjusting *COG/GF* fiscal-year data using the procedure described in “Annual Estimates.” The interest data are available according to the timeline presented in the section “Overview Of Source Data And Estimating Procedures.” Current quarterly estimates are extrapolated judgmentally. The seasonally-adjusted estimates equal unadjusted estimates.

##### *IMPUTED INTEREST PAID*

Estimates of imputed interest are prepared as part of the estimates of imputed interest and associated service charges for the remaining sectors of the NIPAs [54].

#### SUBSIDIES

State and local subsidies are largely payments to railroads. For 1988 and later, annual estimates are based on *COG/GF* data. For 1983 to 1987, annual estimates are prepared judgmentally. In all cases, quarterly estimates are interpolations without an indicator series of annual estimates. Before 1983, annual data are provided by the Association of American Railroads [6]. Current estimates are extrapolated judgmentally. In 2001, California experienced electricity shortages and price spikes. The State of California made payments, which are classified as subsidies in the NIPAs, to electricity suppliers in 2001, 2002, and 2003 to ease the crisis. Partly offsetting these subsidies are payments by individuals and businesses to the state. Estimates of these subsidies and offsets are provided by the California Department of Finance.

## WAGE ACCRUALS LESS DISBURSEMENTS

Wage accruals less disbursements, as the name implies, is the difference between wages paid on an accrual basis and wages paid on cash basis.

Normally, wages are paid with a short lag after they are earned. Wages in both periods are nearly equal, so "wage accruals less disbursements" is estimated as zero in most periods. Differences arise primarily because of strikes and workforce disruptions, and estimates are prepared from reports from jurisdictions affected by strikes on a case-by-case basis [86,87].

## NET STATE AND LOCAL GOVERNMENT SAVING

The NIPA net state and local government saving measure has two parts: (1) The net saving generated by the excess of social insurance system receipts over the outlays of social insurance systems; and (2) the net saving resulting from all other government transactions.

Social insurance fund saving is calculated as the sum of contributions and interest received by social insurance funds, less the sum of social insurance benefits and administrative expenses. Data for administrative expenses of social insurance funds are available in *COG/GF* for workers' compensation and temporary disability systems. These fiscal-year data are averaged to calendar years, and quarterly seasonally-adjusted estimates are interpolated from annual estimates without an indicator series; current quarterly estimates are extrapolated judgmentally. The other funds saving equals the NIPA total net saving minus the social insurance fund saving.

## OTHER CAPITAL EXPENDITURES

### CAPITAL TRANSFER PAYMENTS

There are no capital transfer payments for state and local governments.

### NET PURCHASES OF NONPRODUCED ASSETS

Net purchases of non-produced assets are composed of net purchases of land less oil bonuses. Oil bonuses are payments to states for the long-term rights to extract oil, and they are subtracted from land expenditures, to be consistent with the NIPA treatment of sales revenue.

Annual estimates of land are based on *COG/GF* data. *COG/GF* data for purchases of land, structures and equipment, and sales of land and equipment are split by BEA into separate functional estimates of land, structures, and equipment using ratios. The functional values of purchases and sales of land are then netted to produce estimates of net purchases of land. Oil bonuses are estimated from the charges and miscellaneous general revenue data provided in the *COG/GF* data.

Quarterly estimates are interpolated without indicator, and current quarterly estimates are extrapolated judgmentally.

## NET STATE AND LOCAL LENDING OR BORROWING (-)

Total receipts less total expenditures.

## 5. ESTIMATES OF REAL CONSUMPTION EXPENDITURES AND GROSS INVESTMENT

Most of the time series that are used in computing estimates of real consumption expenditures and gross investment are prepared by deflating current-dollar estimates by suitable price indexes.<sup>25</sup> The principal exceptions are compensation and imputed bank services, both of which are estimated by extrapolating base-year values by quantity indicators, and CFC, which is estimated initially in real terms as described below in the section, "Consumption of General Government Fixed Capital." Major aggregates, such as real consumption expenditures and real gross investment, are prepared by using Fisher chain-type indexes.<sup>26</sup>

The price indexes used for deflation are taken primarily from the Census Bureau's *Current Construction Reports* [40] and from BLS' *Producer Prices and Price Indexes* (PPI) [90] and *Consumer Price Index Detailed Report* (CPI) [84]. Table III-4 indicates the methods that are used to prepare estimates of real state and local consumption expenditures and gross investment by component as well as an overview of the source data used for annual, quarterly, and current quarterly estimates. Current quarterly advance estimates reflect preliminary BEA estimates of the construction price indexes; three months of PPIs; and three months of CPIs. The price data are complete by the final estimate. Unless otherwise stated, the advance, preliminary, and final estimates are prepared using the same methodology.

Estimates for other types of consumption expenditures (e.g., social benefits payments, grants-in-aid, interest payments, and subsidies) are not prepared on a real basis because no price indexes or other suitable measures exist for transforming the current-dollar estimates into real measures.

NIPA table 3.9.1 shows percent change from preceding period for government consumption expenditures and gross investment; table 3.9.2 shows contributions to percent change; table 3.9.3 shows quantity indexes; table 3.9.4 shows price indexes; table 3.9.5 shows current dollars; and table 3.9.6 shows chained dollars. NIPA table family 3.10.x shows similar information for government consumption expenditures and general government gross output.

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<sup>25</sup> For a detailed description of deflation, see Part I, "Real Output and Related Measures."

<sup>26</sup> For more information on chain-type indexes, see 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 of Current Business* 75 (July 1995): 31-38; J. Steven Landefeld and Robert P. Parker, "BEA's Chain Indexes, Time Series, and Measures of Long-Term Economic Growth," *Survey of Current Business* 77 (May 1997): 58-68; and J. Steven Landefeld, Brent R. Moulton, and Cindy M. Vojtech, "Chained-Dollar Indexes: Issues, Tips on Their Use, and Upcoming Changes," *Survey of Current Business* 83 (November 2003): 8-16.

## CONSUMPTION EXPENDITURES

### GROSS OUTPUT OF GENERAL GOVERNMENT

#### *VALUE ADDED*

#### Compensation of general government employees (including own-account compensation)

The estimates of real compensation are obtained by extrapolating base-year compensation by an index of employee hours that is adjusted for changes in the composition of the workforce in terms of experience and education. This procedure is designed to approximate specification pricing for output produced by general government. It assumes that, for a given type of employee, output per hour worked does not change over time and that productivity changes occur for the workforce only because of changes in the mix of employees with respect to their level of experience, their education, and the functions in which they are employed. The mix is defined, by function, by level of experience, and by education. For each type of employee for which BEA has data, real compensation in a given year is the product of average base-year (2000) compensation and an index of employee hours that is the product of employment measured in full-time equivalent units and the average weekly hours worked.

Quarterly and annual measures of full- and part-time employment and hours worked are derived for education and for noneducation employees based on BLS tabulations of employment and wages reported by employers covered by state unemployment insurance programs [86,87]. Data from the annual Census Bureau report, *Public Employment* [44], are used to convert full- and part-time measures of employment to full-time equivalents. Before 1979, the unemployment insurance data did not cover state and local government employment. Estimates for the pre-1979 period are based on the annual *Public Employment* [44] report and on monthly data from BLS establishment surveys.

For estimates of real education compensation, eight employee types are identified, six from *Public Employment* and two from a 1973 study from the Office of Education, Department of Health, Education, and Welfare [62]. For primary-secondary teachers, the largest category, independent data are available to adjust for changes in the composition of employment. Demographic and salary data collected in surveys of teachers [21,63] are distributed into groups defined by teacher characteristics—years of teaching experience and level of educational attainment.<sup>27</sup> For each group, reported average base-year salary is multiplied by employment. The results are summed and a measure of average salary (valued in base-year prices) for primary-secondary teachers in the current period is derived. This index is the index of teaching staff composition. It is used to adjust wage changes for changes in the composition of the teaching staff. The difference between this measure and base-year average salary represents the shift in the composition of employment with respect to experience and educational attainment. Average base-year compensation is then multiplied by the product of this composition shift and the index of employee hours.

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<sup>27</sup> For 1959-86, the survey is conducted by the National Education Association (NEA). Since 1987, the survey is conducted by the National Center for Education Statistics (NCES).

For the remaining seven categories of education employment, average base-year compensation for each category is multiplied by the index of employee hours. The results are summed over all eight categories to produce estimates of constant-dollar education compensation.

For 1982 forward, noneducation real compensation is estimated as the product of average base-year compensation and the index of employee hours. Between 1972 and 1981, BLS noneducation data are disaggregated into two categories: Federally-funded public service employment and other. Measures of public service employment and an estimate of average compensation for these employees are derived from internal documents of the Employment and Training Administration [91]. The remaining segment of noneducation real compensation for this period is estimated as the product of average base-year compensation and the index of employee hours. The results are summed over both categories to produce estimates of real noneducation compensation. For the years 1950-70, a factor designed to reflect rising educational and technical attainments in the Federal workforce was applied to state and local noneducation employment.

### Consumption of general government fixed capital

Estimates of real general government CFC are derived by deflating current-dollar investment flows using BEA's perpetual inventory method. Price indexes for corresponding categories of structures and equipment and software are used to deflate investment flows.<sup>28</sup>

Also, see the explanation for current-dollar consumption of general government fixed capital.

### *INTERMEDIATE GOODS AND SERVICES PURCHASED*

Annual estimates of real intermediate purchases of durable goods; nondurable goods; and services, excluding imputed bank services and services furnished without payment by domestic security brokers, are derived by deflation. Deflation is accomplished through a three-step process. First, consumption expenditures and gross investment is allocated to deflation level commodity detail. Most details are derived based on data from I-O tables as discussed above in "Intermediate goods and services purchased." Second, commodities are matched with relevant price indexes and deflated to produce values in base-year terms. Third, real values for higher level aggregates are prepared using Fisher chain-type measures [50,51,58].

Current quarterly estimates are prepared using current and constant dollars estimates, which are prepared using the methodology for current dollars described in "Intermediate goods and services purchased" and for constant dollars described above, and price indexes to calculate Fisher-chain type measures.

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<sup>28</sup> For further information, see U.S. Department of Commerce, Bureau of Economic Analysis, *Fixed Assets and Consumer Durable Goods in the United States, 1925-97*, September 2003. Current CFC data are online at BEA National Economic Accounts under "Fixed Assets" ([www.bea.gov](http://www.bea.gov)).

## Services

### SERVICES FURNISHED WITHOUT PAYMENT BY FINANCIAL INTERMEDIARIES

Estimates of real services furnished without payment are calculated for commercial banks and for regulated investment companies. For commercial banks, real measures are derived as the remainder of quantity extrapolation using the BLS banking output index, which is then reduced by real estimates of explicitly charged services. The remainder is allocated to state and local governments in proportion to total bank deposits held by those governments, based on *Flow of Funds* data [9]. For regulated investment companies, real measures are prepared by taking the gross output other than charges by security brokers and deflating with a composite index prepared from several related PPIs. For charges by security brokers, real measures are prepared by extrapolating base-year estimates by the number of orders placed by regulated investment companies [15].

### SERVICES FURNISHED WITHOUT PAYMENT BY DOMESTIC SECURITY BROKERS

Beginning with 2001, annual estimates are deflated with PPIs. Historically, estimates of the real services rendered without payment to state and local governments by domestic security brokers are obtained by extrapolating the base-year value by the number of orders derived from volume data from the New York Stock Exchange, the SEC, and the National Association of Securities Dealers.

### OWN-ACCOUNT INVESTMENT

Annual estimates of real own-account investment are derived using the following steps. First, deflation level detail for own-account investment is determined. For a discussion of how current-dollar deflator-level detail for own-account investment is prepared, refer to “Own-account investment.” Second, estimates are deflated using appropriate price indexes. Estimates of real own-account overhead for structures are prepared by deflation using the same price indexes for each commodity as are used to deflate the intermediate goods and services purchased. Estimates of real own-account overhead for software are prepared by deflation using a price index based primarily on weighted average of various PPIs. Estimates of real own-account compensation for structures and for software are prepared by deflation using the BEA implicit price deflators for state and local compensation. Third, real values for higher level aggregates are prepared using Fisher chain-type measures [50,51,58]. Current quarterly estimates are prepared using the same process described above.

### SALES TO OTHER SECTORS

State and local government sales to other sectors include tuition and related educational charges, health and hospital charges, and other sales of goods and services. Annual and quarterly estimates of real sales are prepared by deflation using detailed price indexes.

## GROSS INVESTMENT

### STRUCTURES

Estimates of real investment in structures are derived by deflating 16 types of new construction and 3 types of existing structures.

#### *NEW CONSTRUCTION*

The 16 types of new construction put in place are prepared by deflation using price indexes developed by BEA for office buildings, factories, and education buildings; FHWA Composite index; the Census Bureau price index for single-family houses under construction; the Turner Construction Company index; the Bureau of Reclamation Composite index; and the Handy-Whitman Electric Building index. These indexes are smoothed by a three-quarter moving average or are seasonally adjusted. The FHWA highway composite price index is smoothed by a 12-quarter moving average and then seasonally adjusted.

#### *NET PURCHASES OF EXISTING STRUCTURES*

Estimates of real net purchases of residential, nonresidential, and farm structures are prepared by deflating current-dollar estimates using BEA's price index for new private nonfarm residential structures, BEA's implicit price deflator for new private nonresidential structures, and BEA's price index for new private farm residential structures.

### EQUIPMENT AND SOFTWARE

Estimates of real investment in equipment and software are prepared by deflating separately estimates of equipment excluding computers, computers, and computer software.

#### *EQUIPMENT EXCLUDING COMPUTERS*

Annual estimates of real investment in equipment excluding computers are prepared by deflation. Price indexes, primarily PPIs, are used to deflate the current-dollar commodity estimates for equipment excluding computers. Current quarterly estimates are prepared by judgmental extrapolation.

#### *COMPUTER HARDWARE*

Estimates of real investment in computers are prepared by deflating current-dollar estimates using a BEA price index for computer and peripheral equipment.



### *COMPUTER SOFTWARE*

Estimates of real investment in software are prepared by deflating the three types of software separately. Prepackaged software is deflated by the PPI for prepackaged software with a downward bias adjustment to account for the likely understatement of quality-adjusted price declines. For 1994 through 1997, prepackaged software is deflated using BEA's matched-model index with the bias adjustment. Prior to 1994, an unweighted average of BEA's hedonic index for spreadsheets and word processors and a matched-model index is used. Custom software is deflated by the weighted index of the PPI for non-suite applications. Prior to 1998, the weighted index of prepackaged software price changes (25 percent) and own-account software price changes (75 percent) are used to deflate custom software.

## SOURCES

This is a list of information sources used in preparing current-dollar and real estimates of state and local government transactions in the national income and product accounts. When possible, a specific portion of a larger publication is cited—a chapter, a series, or table number/title. In some cases, the information used is more detailed than that available in the listed source, which is the publication most accessible to the public.

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## TABLES

### TABLE III-1. STATE AND LOCAL GOVERNMENT RECEIPTS: SOURCES OF ESTIMATES

Line	Category	Calendar Year 2000 Estimates (billions of dollars)	Annual <sup>1</sup> and quarterly unadjusted <sup>2</sup>	Quarterly seasonally adjusted
1	<b>Current Receipts</b>	1319.5		
2	<b>Current tax receipts</b>	893.2		
3	Personal current taxes	236.6		
4	Income taxes	217.3		
5	State		<i>COG/GF</i> . <sup>3</sup>	Interpolated and extrapolated using <i>SRR</i> data, seasonally adjusted, as indicator.
6	Local		<i>COG/GF</i> . <sup>3</sup>	Interpolated and extrapolated using <i>QS</i> data, seasonally adjusted, as indicator.
7	Other taxes			
8	Motor vehicle licenses	11.4		
9	State		<i>COG/GF</i> . <sup>3</sup> Allocation between personal and business based on registration data from FHA.	Interpolated and extrapolated using <i>QS</i> data, seasonally adjusted, as indicator.
10	Local		<i>COG/GF</i> . <sup>4</sup> Allocation between personal and business based on registration data from FHA.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
11	Property taxes	4.8		
12	State		<i>COG/GF</i> . <sup>3</sup>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
13	Local		<i>COG/GF</i> . <sup>3</sup>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
14	Other taxes	3.1		
15	State		<i>COG/GF</i> . <sup>3</sup> 90 percent of hunting and fishing licenses allocated to personal, 10 percent allocated to business.	Interpolated and extrapolated using <i>QS</i> data, seasonally adjusted, as indicator.
16	Local		<i>COG/GF</i> . <sup>4</sup>	Historical: Interpolated without indicator Current: Extrapolated judgmentally and interpolated without indicator.
17	Taxes on production and imports	621.1		
18	Sales taxes	316.6		
19	State	255.5		
20	General	177.8	<i>COG/GF</i> . <sup>3</sup>	Interpolated and extrapolated using <i>SRR</i> data, seasonally adjusted, as indicator.
21	Gasoline	30.4	<i>COG/GF</i> . <sup>3</sup>	Interpolated and extrapolated using <i>QS</i> data, seasonally adjusted, as indicator.
22	Alcoholic beverages	4.1	<i>COG/GF</i> . <sup>3</sup>	Interpolated and extrapolated using <i>QS</i> data, seasonally adjusted, as indicator.
23	Tobacco	8.5	<i>COG/GF</i> . <sup>4</sup>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
24	Public utilities	8.8	<i>COG/GF</i> . <sup>3</sup>	Interpolated and extrapolated using <i>QS</i> data, seasonally adjusted, as indicator.

TABLE III-1. STATE AND LOCAL GOVERNMENT RECEIPTS: SOURCES OF ESTIMATES

Line	Category	Calendar Year 2000 Estimates (billions of dollars)	Annual <sup>1</sup> and quarterly unadjusted <sup>2</sup>	Quarterly seasonally adjusted
25	Insurance receipts	9.8	<i>COG/GF</i> . <sup>3</sup>	Interpolated and extrapolated using <i>QS</i> data, seasonally adjusted, as indicator.
26	Other	16.0	<i>COG/GF</i> .	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
27	Local	61.1		
28	General	43.5	<i>COG/GF</i> . <sup>4</sup>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
29	Public utilities	9.2	<i>COG/GF</i> . <sup>4</sup>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
30	Other	8.4	<i>COG/GF</i> . <sup>4</sup>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
31	Other taxes			
32	Property taxes	254.6		
33	State		<i>COG/GF</i> . <sup>3</sup>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
34	Local		<i>COG/GF</i> . <sup>3</sup>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
35	Motor vehicle licenses	6.7		
36	State		<i>COG/GF</i> . <sup>4</sup> Allocation between personal and business based on registration data from FHWA.	Interpolated and extrapolated using <i>QS</i> data, seasonally adjusted, as indicator.
37	Local		<i>COG/GF</i> . <sup>4</sup> Allocation between personal and business based on registration data from FHWA.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
38	Severance taxes	5.3	<i>COG/GF</i> . <sup>4</sup>	Interpolated and extrapolated using <i>QS</i> data, seasonally adjusted, as indicator.
39	Special assessments	3.9	<i>COG/GF</i>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
40	Other taxes	34.0	<i>COG/GF</i> . <sup>4</sup>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
41	Taxes on corporate income	35.5		
42	State		<i>QS</i> .	Interpolated and extrapolated using domestic PBT (less Federal Reserve bank profits), seasonally adjusted, as indicator.
43	Local		<i>QS</i> .	Interpolated and extrapolated using domestic PBT (less Federal Reserve bank profits), seasonally adjusted, as indicator.
44	<b>Contributions for government social insurance</b>	11.0		
45	Employer contributions	8.2		

TABLE III-1. STATE AND LOCAL GOVERNMENT RECEIPTS: SOURCES OF ESTIMATES

Line	Category	Calendar Year 2000 Estimates (billions of dollars)	Annual <sup>1</sup> and quarterly unadjusted <sup>2</sup>	Quarterly seasonally adjusted
46	Temporary disability insurance	0.0	California EDD, <i>COG/GF</i> : percent of employee contributions for CA and NJ. <sup>5</sup>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
47	Workers' compensation	8.1	<i>COG/GF</i> . <sup>5,6</sup>	Historical: Interpolated without indicator. Current: Premium per employee ratio multiplied by current BLS employment data.
48	Employee and self-employed contributions	2.8	California EDD, <i>COG/GF</i> . <sup>5</sup>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
49	<b>Income receipts on assets</b>	92.2		
50	Interest receipts	84.0		
51	Imputed interest received		See article in September 2003 <i>SCB</i> . <sup>7</sup>	See article in September 2003 <i>SCB</i> .
52	Monetary interest received		<i>COG/GF</i> . <sup>5</sup>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
53	Dividends	1.9	S&P 500 dividend yield, Flow of Funds Table L.105. <sup>5</sup>	S&P 500 dividend yield, Flow of Funds Table L.105.
54	Rents and royalties	6.3	<i>COG/GF</i> —CCMGR.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
55	<b>Current transfer receipts</b>	315.4		
56	Federal grants-in-aid	247.3	Budget of the U.S. Government.	<i>MTS</i> .
57	From business	28.8		
58	Fines	7.9	<i>COG/GF</i> —CCMGR. 40 percent of fines.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
59	Net insurance settlements	0.0	A.M. Best insurance data prepared by NIWD.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
60	Other	20.9	<i>COG/GF</i> —CCMGR.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
61	From persons	39.2		
62	Fines	11.9	<i>COG/GF</i> —CCMGR. 60 percent of fines.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
63	Other	27.4	<i>COG/GF</i> —CCMGR.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
64	<b>Current surplus of government enterprises</b>	7.7		
65	Water and sewerage	6.1	<i>COG/GF</i> .	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
66	Gas and electricity	8.5	<i>COG/GF</i> .	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.

TABLE III-1. STATE AND LOCAL GOVERNMENT RECEIPTS: SOURCES OF ESTIMATES

Line	Category	Calendar Year 2000 Estimates (billions of dollars)	Annual <sup>1</sup> and quarterly unadjusted <sup>2</sup>	Quarterly seasonally adjusted
67	Toll facilities	2.6	COG/GF; Highway Statistics, FHWA.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
68	Liquor stores	0.9	COG/GF.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
69	Air and water terminals	3.0	COG/GF.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
70	Housing and urban renewal	-8.7	COG/GF.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
71	Public transit	-17.8	COG/GF.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
72	Other	13.1	COG/GF, Gaming and Wagering Business, National Indian Gaming Commission.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.

1. Except as noted, calendar year estimates are prepared using the procedure described in "Annual Estimates."

2. Except as noted, quarterly unadjusted estimates have the same source as the annual estimates.

3. Calendar year estimates are calculated by interpolating the COG/GF fiscal year data with the available unadjusted quarterly tax collections data and then summed to a calendar year.

4. Calendar year estimates are calculated by interpolating the COG/GF fiscal year data without indicator and then summing on a calendar year basis.

5. Quarterly unadjusted estimates equal quarterly adjusted estimates.

6. Estimates are prepared separately for state and local government employees and for other workers.

7. See Dennis J. Fixler, Marshall B. Reinsdorf, and George M. Smith, "Measuring the Services of Commercial Banks in the NIPAs: Changes in Concepts and Methods" *Survey of Current Business* 83 (September 2003): 33–44.

COG/GF

EDD

FDIC

FHWA

FRB

MTS

PBT

QS

SRR

*Government Finances* and (in years ending in 2 and 7) *Census of Governments* volumes both from the Census Bureau. This includes not only the basic *GF* volume, but also *State Government Finances* and *County Finances*.

California Employment Development Department.

Federal Deposit Insurance Corporation.

Federal Highway Administration.

Federal Reserve Board.

*Monthly Treasury Statement*.

Profits before tax.

*Quarterly Summary*. State quarterly data are unpublished detail; local data are derived residually.

*State Revenue Report*, published by Nelson A. Rockefeller Institute of Government.

TABLE III-2. STATE AND LOCAL GOVERNMENT CONSUMPTION EXPENDITURES AND GROSS INVESTMENT: SOURCES OF ESTIMATES

Line	Category	Calendar Year 2000 Estimates (billions of dollars)	Annual	Quarterly <sup>1</sup>
1	<b>Consumption Expenditures and Gross Investment</b>	1142.8		
2	<b>Consumption expenditures</b>	917.8		
3	Gross output of general government	1153.2		
4	Value added	754.2		
5	Compensation of general government employees <sup>2</sup>	669.4		
6	Wages and salaries <sup>3,4</sup>		BLS tabulations, state local government budgets, <i>COG/GF</i> data on current judicial expenditures, inmate compensation data, the number of prison inmates, data on marriage fees.	Interpolated and extrapolated using BLS employment data and changes in the ECI as indicator.
7	Supplements to wages and salaries:			
8	Employer contributions for social insurance			
9	OASDHI		<i>SSB</i> .	Interpolated and extrapolated using state and local government wages and salaries as indicator.
10	UI		BLS tabulations.	Interpolated and extrapolated using state and local government wages and salaries as indicator.
11	State workers' compensation		<i>COG/GF</i> .	Historical: Interpolated using state and local government wages and salaries as indicator. Current: Extrapolated judgmentally and interpolated without indicator.
12	Employer contributions for employee pension and insurance funds			
13	Publicly administered government employee retirement plans		<i>Ret. Sys.</i>	Historical: Interpolated without indicator Current: Extrapolated judgmentally and interpolated without indicator.
14	Private insurance funds			
15	Group Health Insurance		<i>MEPS</i>	Historical: Interpolated using state and local government wages and salaries as indicator. Current: Extrapolated using ECEC and total state and local government wages and salaries as indicator.
16	Other		Private pension, life insurance carrier, and private workers' compensation reports .	Historical: Interpolated without indicator Current: Extrapolated using changes in BLS employment data.
17	Consumption of general government fixed capital	84.8	See Table III-4.	See Table III-4.
18	Intermediate goods and services purchased	399.0		
19	Durable goods	20.1	<i>COG/GF</i> , Bowker, AAP.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.

TABLE III-2. STATE AND LOCAL GOVERNMENT CONSUMPTION EXPENDITURES AND GROSS INVESTMENT: SOURCES OF ESTIMATES

Line	Category	Calendar Year 2000 Estimates (billions of dollars)	Annual	Quarterly <sup>1</sup>
20	Nondurable goods	126.4	COG/GF.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
21	Services	252.5		
22	Imputed bank services		See article in September 2003 <i>SCB</i> . <sup>5</sup>	See article in September 2003 <i>SCB</i> . <sup>5</sup>
23	Services furnished without payment by domestic security brokers		Federal Reserve Bank of New York volume of trading data, <i>Wall Street Journal</i> bid and ask prices, NASD stock volume data, transactions data and bid and ask prices from various stock exchanges, <i>Flow of Funds</i> data.	Federal Reserve Bank of New York volume of trading data, <i>Wall Street Journal</i> bid and ask prices, NASD stock volume data, transactions data and bid and ask prices from various stock exchanges, <i>Flow of Funds</i> data.
24	Other		COG/GF.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
25	Less: Own-account investment	14.9	I-O benchmarks interpolated and extrapolated using education and all other new construction, private own-account software investment as indicators.	Interpolated and extrapolated using education and all other new construction, own-account software investment as indicators.
26	Less: Sales to other sectors	220.6		
27	Tuition and related educational charges	44.3	COG/GF—CCMGR.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
28	Health and hospital charges	105.5	COG/GF—CCMGR.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
29	Other sales	70.7	COG/GF—CCMGR.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
30	<b>Gross Investment</b>	225.0		
31	Structures	176.0		
32	New	172.0	Census C-30.	Census C-30.
33	Net purchases of used structures	4.1	COG/GF.	Historical: Interpolated without indicator Current: Extrapolated judgmentally and interpolated without indicator.
34	Equipment and software	49.0		
35	Equipment excluding computers		COG/GF.	Historical: Interpolated without indicator Current: Extrapolated judgmentally and interpolated without indicator.
36	Computers		Benchmark I-O relationships, extrapolated using changes in computer shipments as indicator for non-benchmark years.	Interpolated and extrapolated using changes in computer shipments as indicator.
37	Software			
38	Pre-packaged		Benchmark I-O relationships, extrapolated using an indicator based on prepackaged software company earnings and trade source data on sales for non-benchmark years.	Interpolated and extrapolated using an indicator based on prepackaged software company earnings and trade source data on sales.

TABLE III-2. STATE AND LOCAL GOVERNMENT CONSUMPTION EXPENDITURES AND GROSS INVESTMENT: SOURCES OF ESTIMATES

Line	Category	Calendar Year 2000 Estimates (billions of dollars)	Annual	Quarterly <sup>1</sup>
39	Custom		Benchmark I-O relationships, extrapolated using indicator based on trended custom software company earnings for non-benchmark years.	Interpolated and extrapolated using indicator based on trended custom software company earnings.

1. Except as noted, quarterly seasonally adjusted and unadjusted estimates are the same.

2. Allocations between general government and government enterprises based on *Public Employment*, published by the Census Bureau.

3. Cash wages and salaries plus compensation paid to prison inmates, fees paid to jurors and witnesses, and marriage fees.

4. Beginning in 1990, Indian tribal governments and tribal government-owned enterprises are in BLS tabulations.

5. See Dennis J. Fixler, Marshall B. Reinsdorf, and George M. Smith, "Measuring the Services of Commercial Banks in the NIPAs: Changes in Concepts and Methods" *Survey of Current Business* 83 (September 2003): 33—44.

AAP	Association of American Publishers.
BLS tabulations	BLS tabulations of average weekly hours of employment and wages reported by employers covered by State unemployment insurance programs.
CCMGR	Current charges and miscellaneous general revenue. These, in <i>COG/GF</i> , are a set of receipts data. Here, CCMGR includes both data published by Census and the results of BEA analysis underlying unpublished data. See Appendix III-A.
<i>Census C-30</i>	<i>Current Construction Reports: Value of New Construction Put in Place.</i>
<i>COG/GF</i>	<i>Government Finances</i> and (in years ending in 2 and 7) <i>Census of Governments</i> volumes, both from the Census Bureau. This includes not only the basic <i>GF</i> volume, but also <i>State Government Finances</i> and <i>County Finances</i> .
ECEC	Employer Costs for Employee Compensation, published by BLS.
ECI	Employer Cost Index, published by BLS.
MEPS	<i>Medical Expenditure Panel Survey.</i>
NASD	National Association of Securities Dealers.
OASDHI	Old-age, survivors, disability, and hospital insurance.
<i>Ret. Sys.</i>	<i>Finances of Employee-Retirement Systems of State and Local Governments</i> , a specialized publication in the <i>COG/GF</i> series.
SCB	<i>Survey of Current Business</i> , published monthly by the BEA.
SSB	<i>Social Security Bulletin</i> , published by the Social Security Administration.
UI	Unemployment insurance.



TABLE III-3. STATE AND LOCAL GOVERNMENT CURRENT EXPENDITURES: SOURCES OF ESTIMATES

Line	Category	Calendar Year 2000 Estimates (billions of dollars)	Annual <sup>1</sup>	Quarterly <sup>2</sup>
1	<b>Current Expenditures</b>	1269.5		
2	<b>Consumption expenditures</b>	917.8	See Table III-2.	See Table III-2.
3	<b>Government social benefit payments to persons</b>	271.7		
4	Benefits from social insurance funds	11.5		
5	Temporary disability insurance	2.8	California EDD; <i>COG/GF</i> .	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
6	Workers' compensation	8.7	<i>COG/GF</i> .	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
7	Public assistance	245.4		
8	Medical care <sup>3</sup>	205.0		
9	Medicaid	199.5	<i>MFMR</i> .	Historical: <i>MFMR</i> , seasonally adjusted. <sup>4</sup> Current: <i>MTS</i> , national average FMAP.
10	Other medical care <sup>5</sup>	5.5	CMS.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
11	Family assistance <sup>6</sup>	18.4	ACF. <sup>7</sup>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
12	Supplemental security income <sup>8</sup>	4.4	SSA.	Historical: Interpolated without indicator; SSA. Current: Extrapolated judgmentally and interpolated without indicator; SSA.
13	General assistance <sup>9</sup>	3.6	<i>COG/GF</i> , FEMA—IFG.	Historical: Interpolated without indicator, FEMA—IFG. Current: Extrapolated judgmentally and interpolated without indicator, FEMA—IFG.
14	Energy assistance	1.7	Federal grants.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
15	Other <sup>10</sup>	12.3	FNS, ACF, <sup>7</sup> <i>COG/GF</i> .	Historical: Interpolated without indicator, FNS. Current: Interpolated without indicator, FNS.
16	Education <sup>11</sup>	11.6	<i>COG/GF</i> .	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
17	Employment and training <sup>12</sup>	1.0	Federal grants.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
18	Other <sup>13</sup>	2.1	State of Alaska, <sup>14</sup> State of Massachusetts, DOJ, <sup>15</sup> <i>COG/GF</i> .	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.

TABLE III-3. STATE AND LOCAL GOVERNMENT CURRENT EXPENDITURES: SOURCES OF ESTIMATES

Line	Category	Calendar Year 2000 Estimates (billions of dollars)	Annual <sup>1</sup>	Quarterly <sup>2</sup>
19	<b>Interest payments</b>	79.5		
20	Interest paid		COG/GF.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
21	Imputed interest paid		See article in September 2003 SCB. <sup>16</sup>	See article in September 2003 SCB. <sup>16</sup>
22	<b>Subsidies</b>	0.5	COG/GF.	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
23	<b>Less: Wage accruals less disbursements</b>	0.0	Reports from jurisdictions affected by strikes.	Reports from jurisdictions affected by strikes.
24	<b>Net state and local government saving</b>	50.0	Current receipts less current expenditures.	Current receipts less current expenditures.
25	Social insurance funds	2.0	Net sum of social insurance fund components.	Net sum of social insurance fund components.
26	Other	47.9	Residual.	Residual.

1. Except as noted, calendar year estimates are prepared using the procedure described in "Annual Estimates."

2. Except as noted, quarterly seasonally-adjusted and unadjusted estimates are the same.

3. Medical vendor payments, mostly Medicaid.

4. Unadjusted quarterly estimates are from the same source as the annual.

5. General medical assistance and state child health care programs.

6. Aid to families with dependent children, and beginning in 1996, assistance programs operating under the Personal Responsibility and Work Opportunity Reconciliation Act of 1996.

7. Annual estimates are created by converting Federal fiscal year data to a calendar year basis, as described in "Family Assistance."

8. Prior to 1974, consists of old-age assistance, aid to the blind, and aid to permanently and totally disabled, when the programs were federally funded.

9. Prior to 1981, general assistance data are available from HHS.

10. Expenditures for food under the supplemental program for women, infants, and children; foster care; adoption assistance; and payments to nonprofit welfare institutions.

11. Scholarship funds for state universities and colleges; state grants to private educational institutions.

12. Since 1982, payments to nonprofit institutions administering training programs.

13. Consists largely of veterans benefits, Alaska dividends, and crime victim payments.

14. Not-seasonally-adjusted estimates of dividend payments from the Alaska Permanent Fund are calculated by placing the majority of the annual estimates in the fourth quarter, with the rest in progressively smaller increments into the first, second, and third quarters.

15. Calendar year estimates are calculated by averaging the data from the two adjacent fiscal years.

16. Dennis J. Fixler, Marshall B. Reinsdorf, and George M. Smith, "Measuring the Services of Commercial Banks in the NIPAs: Changes in Concepts and Methods" *Survey of Current Business* 83 (September 2003): 33—44.

ACF Administration for Children and Families, U.S. Department of Health and Human Services.

CMS Center for Medicaid and Medicare Services, U.S. Department of Health and Human Services.

COG/GF *Governmental Finances* and (in years ending in 2 and 7) *Census of Government* volumes, both from the Census Bureau. This includes not only the basic *GF* volume, but also *State Government Finances* and *County Finances*. U.S. Department of Justice.

DOJ California Employment Development Department.

EDD See Part II, "Federal Grants-in-aid to State and Local Governments."

Federal grants Federal Emergency Management Agency, U.S. Department of Homeland Security.

FMAP Federal Medical Assistance Percentage, represents the portion of Medicaid expenditures for which the Federal government is responsible

FNS Food and Nutrition Service, U.S. Department of Agriculture.

IFG Individual and Family Grant Program: FEMA Obligations by State.

MFMR *Medicaid Financial Management Report*, a quarterly report published by CMS detailing state Medicaid expenditures.

MTS *Monthly Treasury Statement*.

SSA Social Security Administration.

TABLE III-4. ESTIMATES OF REAL STATE AND LOCAL CONSUMPTION EXPENDITURES AND GROSS INVESTMENT: SOURCES OF ESTIMATES

Line	Category	Method	Annual	Quarterly
1	<b>Consumption Expenditures Gross Investment</b>			
2	<b>Consumption expenditures</b>			
3	Gross output of general government			
4	Value added			
5	Compensation of general government employees	Extrapolation.	Index of employee hours, average base-year compensation, <i>PE</i> , BLS tabulations.	Index of employee hours, average base-year compensation, <i>PE</i> , BLS tabulations.
6	Consumption of general government fixed capital	Extrapolation.	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.
7	Intermediate goods and services purchased			
8	Durable goods	Deflation.	CPIs, PPIs.	Extrapolated judgmentally.
9	Nondurable goods	Deflation.	CPIs, PPIs.	Extrapolated judgmentally.
10	Services			
11	Imputed bank services	Extrapolation.	BLS banking output index, <i>Flow of Funds</i> data, PPIs.	BLS banking output index, <i>Flow of Funds</i> data, PPIs.
12	Services furnished without payment by domestic security brokers	Deflation.	PPIs.	PPIs.
13	Other	Deflation	CPIs, PPIs.	Extrapolated judgmentally.
14	Less: Own-account investment	Deflation	CPIs, PPIs, IPDs.	CPIs, PPIs, IPDs.
15	Less: Sales to other sectors	Deflation.	CPIs, PPIs.	CPIs, PPIs.
16	<b>Gross Investment</b>			
17	Structures			
18	New	Deflation.	FHWA composite index, Census Bureau price index for single-family houses under construction, the Turner Construction Cost index, Bureau of Reclamation index, and Handy Whitman index.	FHWA composite index, Census Bureau price index for single-family houses under construction, the Turner Construction Cost index, Bureau of Reclamation index, and Handy Whitman index.
19	Net purchases of used structures	Deflation.	New private nonfarm residential structures index, new private farm residential structures index, and new private nonresidential structures IPD.	New private nonfarm residential structures index, new private farm residential structures index, and new private nonresidential structures IPD.
20	Equipment and software			
21	Equipment excluding computers	Deflation	PPIs.	Extrapolated judgmentally.
22	Computers	Deflation.	Price index of computer and peripheral equipment investment.	Price index of computer and peripheral equipment investment.
23	Software			
24	Prepackaged	Deflation	PPIs.	PPIs.
25	Custom	Deflation	PPIs.	PPIs.

CPI Consumer price index.  
 FHWA Federal Highway Administration.  
 IPD Implicit price deflator.  
*PE* *Public Employment*, an annual Census Bureau publication.  
 PPI Producer price index.

TABLE III-5. ADDENDA: SOURCES OF ESTIMATES

Line	Category	Calendar Year 2000 Estimates (billions of dollars)	Annual	Quarterly
1	<b>Total Receipts</b>	1363.2		
2	<b>Current receipts</b>	1319.5	See Table III-1.	See Table III-1.
3	<b>Capital transfer receipts</b>	43.7		
4	Estate and gift taxes			
	State		<i>COG/GF.</i> <sup>1</sup>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
	Local		<i>COG/GF.</i> <sup>2</sup>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
5	Capital grants		See Part II, "Capital Grants-in-aid to State and Local Governments."	See Part II, "Capital Grants-in-aid to State and Local Governments."
6	<b>Total Expenditures</b>	1393.5		
7	<b>Current expenditures</b>	1269.5	See Table III-3.	See Table III-3.
8	<b>Gross government investment</b>	225.0	See Table III-2.	See Table III-2.
9	<b>Capital transfer payments</b>	---		
10	<b>Net purchases of non-produced assets</b>	8.8	<i>COG/GF, COG/GF—CCMGR.</i>	Historical: Interpolated without indicator. Current: Extrapolated judgmentally and interpolated without indicator.
11	<b>Less: Consumption of fixed capital</b>	109.8	See Table III-4.	See Table III-4.
12	<b>Net lending or net borrowing (-)</b>	-30.4	Total receipts less total expenditures	Total Receipts less total expenditures

1. Calendar year estimates are calculated by interpolating the *COG/GF* fiscal year data with available not-seasonally-adjusted quarterly tax collections data from the *Quarterly Summary* and then summing on a calendar year basis.

2. Calendar year estimates are calculated by interpolating the *COG/GF* fiscal year data without indicator and then summing on a calendar year basis.

*COG/GF* *Government Finances* and (in years ending in 2 and 7) *Census of Governments* volumes both from the Census Bureau. This includes not only the basic GF volume, but also *State Government Finances* and *County Finances*.

CCMGR Current charges and miscellaneous general revenue. These, in *COG/GF*, are a set of receipts data. Here, CCMGR includes both data published by Census and the results of BEA analysis underlying unpublished data. See Appendix III-A.

APPENDIX III-A  
Analysis of Changes and Miscellaneous General Revenue, *GF*, 2000

**Table III-A-1. Distribution of Current Charges and Miscellaneous General Revenue Among Categories of Current Receipts, FY 2000**  
(Billions of dollars)

	FY2000											
	GF	Sales	Exclusions	Enterprise Revenue	Interest earnings	Dividends received	Curr Trans Persons	Curr Trans Business	Taxes	Rent & Royalties /1/ /2/	Coverage adjustment	
Current charges and miscellaneous revenue, GF	377.0											
Current charges	223.5											
Education:	65.6											
School lunch sales	5.5	5.5										
Institutions of higher education:	55.3											
Tuition /1/	40.4	40.4										
Other /1/	14.9	14.9										
Other education /3/	4.8	4.8										
Hospitals	54.6	54.6										
Highways /4/	7.4	0.8		6.6								
Air transportation & airports	11.1			11.1								
Parking facilities	1.4			1.4								
Sea and inland port facilities	2.5			2.5								
Natural resources	3.0	3.0										
Housing and community development	4.2			4.2								
Sewerage	24.3			24.3								
Solid Waste management	10.2	10.2										
Other charges /5/	33.0	19.0	0.2	0.7			9.8	8.3			1.3	
Miscellaneous general revenue:	153.5											
Interest earnings	70.5				70.5							
Special assessments	3.8								3.8			
Sale of property /1/ /6/	2.2		2.0									
Other general revenue	77.2											
Fines and forfeits /1/	11.7						10.5	1.2				
Donations /1/	18.0						11.0	7.0				
Other miscellaneous revenue	47.5	9.1	4.5	15.8		724.0	6.8	6.1			4.5	

1. Published in *GF* for States; estimated by BEA for local (from underlying unpublished detail).

2. Data on oil bonuses are from direct contact with States. Such payments are included in *GF* rents and royalties, but are excluded, from NIPA transactions.

3. Available is summary detail underlying *Government Finances*.

4. Data on current charges for local highways are available in underlying unpublished detail. The distribution between toll facilities revenue (enterprise revenue) and other charges (government sales) is based on data from *Highway Statistics*, Federal Highway Administration.

5. Distribution of "other" from BEA analysis of data from Census records for individual large governments.

6. This represents sales of land and existing structures. The total is distributions between land and structures, as the purchase of land and existing structures. The sales of existing structures is a negative addition to gross purchases of structures.

Note.—Except where noted, these data can be found in *Government Finances*, 2000.

*GF Government Finances*

APPENDIX III-B  
State and Local Government Functions

General control  
Judicial  
Financial administration  
Imputed financial services  
Retirement administration sales  
Imputed brokers' fees  
Police  
Fire  
Correction  
Elementary and secondary education  
Higher education  
Libraries  
Other education  
Health  
Hospitals  
Workers' compensation  
Temporary disability insurance  
Public assistance  
Veterans programs  
Housing and urban renewal<sup>1</sup>  
Water supply<sup>1</sup>  
Sewerage<sup>1</sup>  
Sanitation  
Parks and recreation  
Natural gas<sup>1</sup>  
Agriculture  
Natural resources  
Electricity supply<sup>1</sup>  
Regular highways  
Toll highways<sup>1</sup>  
Water terminals<sup>1</sup>  
Air terminals<sup>1</sup>  
Transit<sup>1</sup>  
Protective inspection and regulation  
Employment and training  
Liquor stores<sup>1</sup>  
Miscellaneous commercial activities (includes lotteries, off-track betting, parking, and other  
miscellany)<sup>1</sup>  
Other and unallocable  
General public buildings

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<sup>1</sup> These are enterprise functions. In the National Income and Product Accounts, purchases of goods and services by enterprises consist of capital purchases only. Current operating purchases are included as an expense in the derivation of subsidies less current surplus of government enterprises.

**PART IV**

**GOVERNMENT CONSUMPTION EXPENDITURES  
AND GROSS INVESTMENT-BY-FUNCTION**

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## 1. INTRODUCTION

The classification of functions of government provides a detailed array of the functions, or socioeconomic objectives of general government. Ideally, this functional classification serves several purposes: (1) To provide statistics which are of general interest for a wide variety of analytic uses; (2) to provide users with the means to recast key aggregates of government spending for particular kinds of analysis; (3) to permit trends in government outlays on particular functions or purposes to be examined over time; (4) to enable international comparisons of government involvement in economic and social functions.

BEA has historically produced estimates of government spending by function on a current-dollar basis. These estimates appear in NIPA tables 3.15, 3.16, and 3.17

NIPA estimates of government spending are mainly derived from data that are consistent with Federal, state, and local government budgets.<sup>1</sup> These budgets usually reflect expenditures by function or by program, such as defense, health, and education.<sup>2</sup> As a result, BEA's estimates of government spending by function provide information on how governments allocate their funds that is useful to policymakers, business decisionmakers, and other data users. The estimates of current-dollar government spending show the relative size of each function, and the estimates of real government spending remove the effects of price changes over time and show the relative growth of each function.

Government spending is distributed among the following functions: general public service, public order and safety, economic affairs, housing and community services, health, recreation and culture, education and income security. These functional classifications are reported, as applicable, within each of the following categories of expenditures: consumption expenditures, government social benefits, grants-in-aid, subsidies, gross investment, and capital transfers paid.

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<sup>1</sup> In this part, the phrase, "government spending" refers to three configurations of outlays by government. When referring to NIPA table family 3.15, government spending means "consumption expenditures and gross investment." When referring to NIPA table 3.16, government spending means current expenditures (consumption expenditures, government current transfers, grants-in-aid, interest payments, and subsidies, less wage accruals less disbursements). When referring to NIPA table 3.17, government spending refers to current and capital expenditures.

<sup>2</sup> BEA's classification of government spending by function is based on the "Classification of the Functions of Government" (COFOG); COFOG is the international classification standard, which is cited in the *System of National Accounts, 1993* and the *Government Finance Statistics Manual, 2001*. BEA's classifications of functions differ from COFOG because they do not include an environmental category and because they include "space" in economic affairs. An environmental category is not shown because environmental activities in the relevant subfunctions (such as waste management, housing, and community services) cannot be identified in BEA's source data. Including "space" in economic affairs groups all the nondefense space-related activities—mostly National Aeronautical and Space Administration programs. Under the COFOG standard, spending on space-related activities may be classified as part of research and development (R&D) within all the relevant COFOG functions.

Beginning in 2004, BEA began producing estimates of real consumption expenditures and gross investment by function.<sup>3</sup> Just as estimates of real government spending to produce services that are included in estimates of real gross domestic product (GDP), estimates of real government spending by function represent a measure of the changes over time in the real resources or inputs that contribute to the production of these services. Government services are difficult to measure because most of the services are not sold in the marketplace; however, the inputs to the provision of government services are relatively easy to measure, so these input-derived measures are used as proxies for the output of government services. This technique implicitly assumes that the ratio of inputs to outputs is fixed, and it ignores the possibility that output per unit of inputs may increase. Consequently, these estimates of real spending by function are not suitable for preparing productivity measures.

Estimates of real spending by function refer to real government consumption expenditures and gross investment by function, which appear in NIPA table family 3.15 and which constitute a portion of GDP. These estimates exclude other types of government expenditures—such as social benefit payments, grants-in-aid, interest payments, and subsidies—that do not directly contribute to GDP; for example, the health function excludes payments for Medicare and Medicaid, both of which are classified in the NIPAs as government social benefit payments.<sup>4</sup> They also exclude the services produced by government enterprises, but they include the investment spending of these enterprises.<sup>5</sup> In addition, government consumption expenditures by function are on a net basis, that is, gross output less sales and own-account investment; for example, the consumption expenditures for health represent the gross output of providing health care services less the revenues received as hospital charges and other health charges. Estimates of real government spending by function expand the information available in the NIPAs for broad categories of services such as health care and education.<sup>6</sup>

A description of the methodologies that are used to prepare estimates of government spending by function are presented in the next section, along with a discussion of BEA's plans to improve the estimates. Appendix I provides definitions of the functions of government.

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<sup>3</sup> See Bruce E. Baker, Pamela A. Kelly, and Brooks B. Robinson, "Estimates of Real Government Consumption Expenditures and Gross Investment by Function for 1959-2003," *SURVEY OF CURRENT BUSINESS* 84 (October 2004) : 5-10.

<sup>4</sup> Current expenditures for health and other functions in current dollars are presented in NIPA table 3.16. Measures of real expenditures are not prepared for this table because no price indexes or other suitable methods exist for transforming all of the expenditures, such as social benefit payments, into real expenditures.

<sup>5</sup> For more information about the treatment of government enterprises in the NIPAs, see *A Guide to the NIPAs*, M-20 at [www.bea.gov/bea/an/nipaguid.htm](http://www.bea.gov/bea/an/nipaguid.htm). For estimates of real output, value added, and intermediate inputs for Federal and state and local government enterprises see Erich H. Strassner and Thomas F. Howells III, "Annual Industry Accounts Advance Estimates for 2004," *SURVEY OF CURRENT BUSINESS* 85 (May 2005) : 7-19.

<sup>6</sup> Estimates of real personal consumption expenditures for medical care and education are presented in the NIPA tables 2.4.3–2.4.6.

## 2. METHODOLOGIES

The methodologies used to prepare the estimates of Federal Government and state and local government spending by function are based on the integration of estimates of current-dollar government budget data by function with estimates of current-dollar intermediate goods and services purchased by government to produce services. The following sections elaborate on the specific methodologies for the Federal Government and for the state and local estimates. For real estimates of Federal and state and local government spending by function, the deflated compensation of employees, consumption of fixed capital (CFC), and intermediate goods and services purchased for each function are aggregated to the functional and total (Federal, state and local, and total) levels using Fisher index formulas; the indexes are chained together to produce a time series of real quantity and price measures.<sup>7</sup>

## 3. FEDERAL GOVERNMENT SPENDING

Estimates of Federal consumption expenditures and gross investment by function in current dollars are prepared on the basis of functional classifications for each appropriation in the Federal Budget. The portions of spending for all appropriations that are estimated by BEA to be consumption expenditures and gross investment are summed by budget function and then aggregated into the COFOG functions.<sup>8</sup> Sales by appropriation are also assigned to budget functions and are subtracted from gross expenditures. In addition, BEA estimates and adds CFC to each function.

Estimates of real Federal consumption expenditures and gross investment by type of expenditure (consumption or investment) and for investment, by type of asset, are discussed in Parts II and III of this publication.<sup>9</sup> Estimates of real defense consumption expenditures and gross investment represent a single function; as a result, estimates of real spending for the defense function require no additional estimation.

To derive estimates of real nondefense spending by function, first, estimates of current-dollar spending on nondefense compensation of employees, CFC, and intermediate goods and services purchased and sales by type of good and by type of service are allocated to current-dollar nondefense spending by function in the three steps that are described below. Then, the price indexes for compensation of employees, CFC, and intermediate goods, services, and sales are used to deflate the corresponding estimates of current-dollar nondefense spending by function.<sup>10</sup>

The estimates of nondefense compensation of employees, CFC, intermediate goods and services purchased, and sales are allocated in three steps. First, certain goods, services,

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<sup>7</sup> See 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; [www.bea.gov](http://www.bea.gov).

<sup>8</sup>NIPA current receipts differ from Federal budget receipts because of coverage, netting and grossing, and timing. BEA makes these adjustments to adjust to NIPA spending levels. See NIPA table 3.18 and Part II.

<sup>9</sup>Estimates by type of expenditure and, for investment, by type of asset are in NIPA tables 3.9.1–3.9.6, 3.10.1, 3.10.3–3.10.6, 3.11.1, and 3.11.3–3.11.6.

<sup>10</sup>Deflation is the process of dividing current-dollar estimates by price indexes.

and sales within nondefense spending are allocated to a single function; for example, the inventory change of the Commodity Credit Corporation (CCC) is allocated to agriculture, which is included in “other economic affairs.” Thus, the price indexes for CCC inventory change are used to estimate the real measures for “other economic affairs,” but they are not used to estimate any other functions.

Second, because the Federal budget contains data for each appropriation that BEA classifies as compensation of employees, these data are allocated to a budget function and then to a COFOG function. These data are compiled from Federal budgets for selected years. Ratios of compensation by function are developed for selected years, and the ratios for intervening years are derived by interpolation. These ratios are then used to allocate current-dollar compensation to functions. In the derivation of the measures of real compensation, the same price index for compensation is used to deflate all nondefense functions.

Third, the remaining estimates of current-dollar CFC, intermediate goods and services purchased, and sales are allocated to the nondefense functions proportionally.

#### 4. STATE AND LOCAL GOVERNMENT SPENDING

Estimates of current-dollar state and local government consumption expenditures, sales, and gross investment are derived from the Census Bureau’s *Government Finances* data. The Census Bureau data are collected in surveys by function, and these functions form the basis for the NIPA estimates by function. In preparing the NIPA estimates, the Census Bureau data are adjusted to conform to NIPA accounting concepts of coverage, netting, and timing, and the data are sorted into COFOG-based functions.<sup>11</sup> The Census Bureau data are also supplemented with data from other sources—particularly the data for computers and software. In addition, BEA estimates and adds CFC to each function.

Estimates of current-dollar consumption expenditures, sales, and gross investment are allocated to commodities, using detailed data from BEA’s input-output accounts. These commodities are allocated to functions and to types of intermediate goods (that is, durable goods and nondurable goods) and services purchased, and to gross investment (structures and equipment and software). These commodities are matched with price indexes and are deflated to produce estimates of real government consumption expenditures and gross investment and of government spending by function.

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<sup>11</sup> See NIPA table 3.19., “Relation of State and Local Government Current Receipts and Expenditures in the National Income and Product Accounts to Bureau of Census Government Finances Data.” See also Part III of this publication.

## APPENDIX I

### DEFINITIONS OF THE FUNCTIONS OF GOVERNMENT

The functions of government presented in the NIPA tables are based on the international “Classification of the Functions of Government” (COFOG). They reflect the Federal and state and local government consumption expenditures and gross investment to produce the following services: General public services; national defense services; public order and safety services; economic affairs services, including transportation, space, and other services; housing and community services; health services; recreation and culture services; education services; and income security services.

The estimates in NIPA tables 3.15.1 (percent change), 3.15.2 (contribution to percent change), 3.15.3 (quantity index), 3.15.4 (price indexes), and 3.15.6 (chained 2000 dollars) reflect these functions. Table 3.15.5 presents additional detailed services by function in current dollars.

Table 3.16 presents government current expenditures by function, and table 3.17 presents selected government current and capital expenditures by function.

In the detailed NIPA table 3.15.5 and tables 3.16 and 3.17, general public service consists of detailed spending for executive and legislative services, tax collection and financial management services, and other services.

Public order and safety consists of police, fire, law courts, and prisons services.

Economic affairs consists of transportation, space, and “other economic affairs.” Transportation consists of highways, air, water, and transit and railroad. “Other economic affairs” consists of general economic and labor affairs, agriculture, energy, natural resources, postal services, and other services.

Housing and community services for State and local governments consists of water, sewerage, sanitation, and housing and other services.

Education consists of elementary and secondary education, higher education, and libraries and other services. For state and local governments, libraries and other services are shown separately.

Income security consists of disability, retirement, welfare and social services, unemployment, and other services.